

# STATE OF CONNECTICUT

## INSURANCE DEPARTMENT

December 28, 2009

Senator Joseph Crisco, Co-Chairman, Insurance and Real Estate Committee  
Representative Steve Fontana, Co-Chairman, Insurance and Real Estate Committee  
Senator Sam Caligiuri, Ranking Member, Insurance and Real Estate Committee  
Representative Anthony D'Amelio, Ranking Member, Insurance and Real Estate Committee  
Members of the Insurance and Real Estate Committee

Dear Co-Chairmen Crisco and Fontana; Ranking Members Caligiuri and D'Amelio and Honorable Members of the Insurance and Real Estate Committee:

Pursuant to Public Act 09-179, An Act Concerning Reviews of Health Insurance Benefit Mandates in this State, I am pleased to submit the attached health benefit mandate report to the Insurance and Real Estate Committee.

Public Act 09-179 established within the Insurance Department a health benefit review program to review and evaluate health benefit mandates. The Department, as required in the Public Act, contracted with the University of Connecticut's Center for Public Health and Health Policy to perform the review and evaluation of the health benefit mandates that were outlined in your letter of July 31, 2009. At that time, you requested the evaluation of mandated health benefits proposed in Public Act 09-188, which was subsequently vetoed by the Governor. The attached report provides that requisite review and analysis of the seven proposed mandates.

In conjunction with the University of Connecticut's Center for Public Health and Health Policy, I am pleased with the comprehensive and thorough analysis that has been completed in accordance with the requirements of Public Act 09-179.

The Department, along with representatives of the Center for Public Health and Health Policy, would be happy to meet you with all members of the Insurance and Real Estate Committee to provide an overview of the attached report, the process that been established to create the health benefit review program within the Insurance Department in conjunction with the University of Connecticut, and outline the plan that has been established to conduct our future analysis of existing health benefit mandates.

Once again, I am pleased to present this report to the Insurance and Real Estate Committee and look forward to addressing any questions you may have on the enclosed report.

Thank you for this opportunity and on behalf of the Connecticut Insurance Department and the University of Connecticut's Center for Public Health and Health Policy, we look forward to continuing our work in accordance with the provisions of Public Act 09-179.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas R. Sullivan", with a long horizontal line extending to the right from the end of the signature.

Thomas R. Sullivan  
Commissioner  
Connecticut Insurance Department

CC: Diane Kubeck, Committee Clerk, Insurance and Real Estate Committee  
Janet Kaminski-Leduc, Office of Legislative Research  
Kumi Sato, Legislative Commissioner's Office  
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Mary Eberle, Center for Public Health and Health Policy

**Review and Evaluation of Public Act 09-188,  
An Act Concerning Wellness Programs and Expansion of  
Health Insurance Coverage:**

**A Report to the  
Insurance and Real Estate Committee  
of the Connecticut General Assembly**



University of Connecticut

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Center for Public Health and Health Policy

December 2009

Commissioner Thomas R. Sullivan  
Connecticut Insurance Department  
P.O. Box 816  
Hartford, CT 06142-0816

Re: Mandated Benefit Review Project 2009

Dear Commissioner Sullivan,

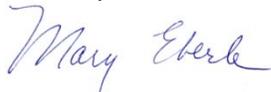
In its 2009 regular session, the Connecticut General Assembly enacted P.A. 09-179, which requires the CT Department of Insurance (Department) to review and evaluate proposed or existing health insurance benefit mandates, as requested by the co-chairs of the Insurance and Real Estate Committee each year. The Department is directed in this legislation to contract with the University of Connecticut Center for Public Health and Health Policy (Center) to perform such review and evaluation and to assess the insurers licensed in Connecticut to recover the costs of such contract. The Center is authorized to obtain the services of whatever other entities it needs to perform the review and analysis, both internal and outside the university.

By letter dated July 31, 2009, the co-chairs of the Insurance and Real Estate Committee requested the Department to report on seven proposed health insurance benefit mandates. All seven had been included in P.A. 09-188, which was passed by both chambers of the General Assembly but was vetoed by the Governor. Enclosed with this letter is our analysis of these mandates.

The analysis consists of eight parts: a general overview and a section for each of the seven proposed mandates. Each of these seven sections is written to stand on its own, because each of the mandates could be proposed as a separate bill in 2010 or subsequent years. The analysis has been prepared by the Center with the assistance of the Department, the CT Center for Economic Analysis at the University of Connecticut and Ingenix Consulting, an actuarial consulting firm.

We have enjoyed working on this analysis and are pleased to present you with our findings. Thank you very much for this opportunity. We look forward to answering your questions and those of the General Assembly.

Sincerely,

A handwritten signature in blue ink that reads "Mary Eberle". The signature is written in a cursive, flowing style.

Mary U. Eberle, J.D.  
Senior Policy Analyst  
University of Connecticut  
Center for Public Health and Health Policy

**Review and Evaluation of Public Act 09-188,  
An Act Concerning Wellness Programs and Expansion of Health  
Insurance Coverage:  
A Report to the  
Insurance and Real Estate Committee  
of the Connecticut General Assembly**

Prepared by:  
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## Executive Summary

Pursuant to Public Act 09-179, the Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage, in accordance with the requirements stipulated under Public Act 09-179. This review has been performed in accordance with that request and has been a collaborative effort of the Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy, with the assistance of the University of Connecticut Center for Economic Analysis and Ingenix Consulting.

Public Act 09-188 included seven proposed new health insurance benefit mandates: 1) an increase in the minimum annual benefit for ostomy supplies; 2) a new mandate to cover the cost of prosthetics at least to the extent that Medicare covers them; 3) an increase in the age limit for coverage of hearing aids for children from under age 13 to under age 19; 4) coverage of wigs for persons with alopecia areata comparable to the current coverage for wigs for chemotherapy patients; 5) a new mandate to cover human leukocyte antigen testing for members enrolling in the National Marrow Donor Registry; 6) elimination of cost sharing for the second or subsequent colonoscopy performed in the same policy year; and 7) a new mandate that group health insurers offer a wellness program with financial incentives for employee participation as an optional benefit. Each proposed mandated benefit was studied separately and the key findings of these studies are reported below.

### Existing health insurance coverage

Existing insurance coverage for these services differs by mandate. Some of the mandates are already included in policies offered by some of the health insurers in Connecticut. Others are not offered currently by any of them. In summary:

- Three insurers provide unlimited coverage of ostomy supplies and appliances under their group plans; another provides unlimited coverage for 28 percent of its insureds in group plans; one insurer provided \$2500 annually and two insurers provided \$1000 annually in coverage for ostomy appliances and supplies in group plans. Five of the seven insurers offered individual health insurance policies. Of these, one insurer provided unlimited coverage and the remaining four insurers provided \$1000 annually in coverage for ostomy appliances and supplies.
- All seven insurers include coverage for prosthetic devices in group and ASO plans, some at the level of the proposed mandate. Coverage of prosthetic limbs is not included in all individual plans
- No CT insurers currently provide hearing aid coverage for children from 13-18, although 2 companies are scheduled to add it in October 2010.
- No CT insurers currently provide benefits for wigs for individuals with alopecia areata.
- Three insurers provide no coverage for initial HLA testing; the other four provide coverage of HLA testing based on medical necessity. It is unclear whether such coverage would comply with the proposed mandate.
- One of the seven CT insurers has eliminated the co-pays for a second or subsequent colonoscopy in a policy year.

- Most insurers offer wellness programs, and most offer at least some wellness programs with financial incentives. The extent to which employers elect to include wellness programs in their health plans and make them available to their employees is unknown.

### Cost of proposed mandates

The estimated medical cost of the individual mandates is shown below. The vast majority of the incremental expense for the first six mandates is medical cost. 2010 medical cost is estimated to be \$0.51 per member per month (PMPM) as a medium-cost scenario for all six mandates combined. Administrative costs are estimated to be \$0.18 PMPM for these six mandates combined. For total retention, we estimate \$0.21, which is administrative cost plus profit.

This yields a total cost of about \$0.72 PMPM for the six mandates.

With the optional wellness program with incentives benefit mandate, however, the cost will not be a medical claim expense, but rather an administrative one. The estimated cost of this mandate will vary depending on the complexity of each program.

### Summary of Expected Medical Costs of Mandates in 2010

1. Ostomy supplies:	\$0.01 PMPM
2. Prosthetics:	\$0.35 “
3. Hearing aids:	\$0.06 “
4. Wigs, Alopecia areata:	\$0.02 “
5. HLA testing	\$0.06 “
6. Colonoscopy	<u>\$0.01 “</u>
Total	\$0.51 “
7. Wellness Programs	0% to 3% of premium

(This depends on the complexity of the wellness/incentive program.)

### Financial burden on insureds

None of the proposed mandates were found to affect the existing health care financial burden for enrollees. Those who already have a high financial burden related to health care costs (i.e., more than 10% of gross income) would continue to bear a high financial burden. Those who bear a low to medium burden without the proposed mandates would continue to bear the same level of burden after the mandates. The proposed mandate on coverage of hearing aids for children between the ages of 13 and 18 has the potential to lower the health care financial burden for those families between 1% and 4%, although they would remain in the high burden category. For those who already bear a high financial burden related to health care, any additional cost can be a barrier to access.

## Impact of mandate on use of procedure, service or equipment

The proposed mandates concerning ostomy supplies, wigs for alopecia areata, and cost sharing for second colonoscopies are not expected to significantly affect the use of the procedure, service or equipment concerned.

The costs of prosthetics and of hearing aids for teenagers have been major barriers to access for those without insurance coverage for these devices. The proposed mandates for coverage of these devices are not expected to increase the diagnosis of the conditions which require them, but demand for the devices is expected to increase among those who could benefit from them.

Insurance coverage for initial HLA testing could substantially increase the rate at which potential bone marrow donors enlist in the National Marrow Donor Registry, which will increase the demand for such testing.

The mandate on wellness programs with financial incentives is voluntary on the part of the employer. It is difficult to predict the impact of the mandate on employer selection of such programs, or on employee use of them. Financial incentives should increase participation, if such programs are in fact included by employers in their health plans.

## Other states

Mandated coverage in other states for the proposed mandated benefits varies by benefit:

- Connecticut is the only state that mandates coverage of ostomy supplies in commercial health insurance policies.
- Five states mandate coverage for prosthetic limbs.
- Fifteen states mandate some level of coverage for hearing aids for children between ages 13-18.
- Four states mandate coverage for wigs for persons with alopecia areata. One applies a dollar limit and one limits the benefit to children under 18.
- Four states mandate coverage of initial HLA testing for purposes of enrolling in the National Marrow Donor Registry.
- 33 states mandate coverage for colonoscopies, although it could not be determined whether co-pays, deductibles and coinsurance for second or subsequent colonoscopies are eliminated in any of them.
- A number of states have studied wellness programs and several offer them to state employees. Few studies addressed the issue of financial incentives. No states were found to have mandated them.



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## General Overview

Over the last 60 years, the Connecticut General Assembly has enacted numerous health insurance benefit mandates and limitations on health insurers licensed to sell insurance in Connecticut. In keeping with a growing trend among the states, the General Assembly in 2009 directed the CT Department of Insurance (Department) to review and evaluate both proposed and existing mandates, as requested by the co-chairs of the Insurance and Real Estate Committee of the General Assembly (P.A. 09-179). This statute directed the Department to contract with the University of Connecticut Center for Public Health and Health Policy (CPHHP) to perform such reviews, and authorized the Department to recover the costs of such contract through assessments on the insurers. It also authorized the CPHHP to obtain whatever expertise it needed to perform the reviews, whether from inside or outside the university.

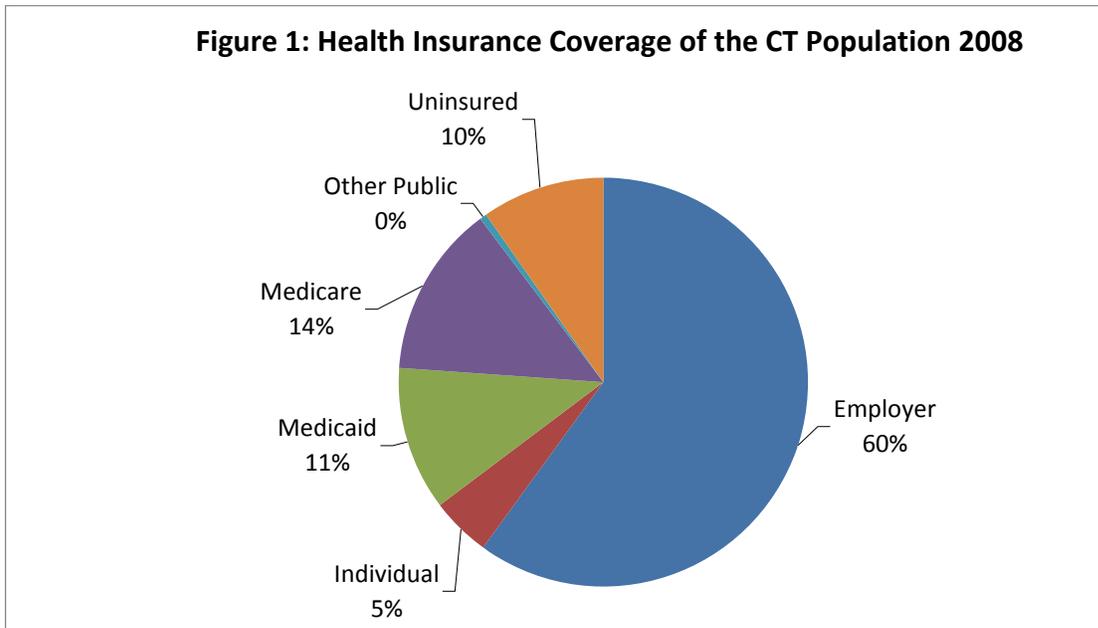
By letter dated July 31, 2009, the co-chairs of the Insurance and Real Estate Committee requested the Department to report on seven proposed health insurance benefit mandates by January 1, 2010. All seven had been included in P.A. 09-188, which was passed by both chambers of the General Assembly but was vetoed by the Governor. Six of these proposed mandates would apply to both individual and group health insurance policies sold, delivered or amended in Connecticut. The seventh mandate would apply only to group health insurance policies.

This report is comprised of eight parts: a general overview and seven sections. Each section reviews one of the seven mandates. Each of the seven sections can stand on its own, since insurance benefit mandates generally are raised separately in individual proposed legislation.

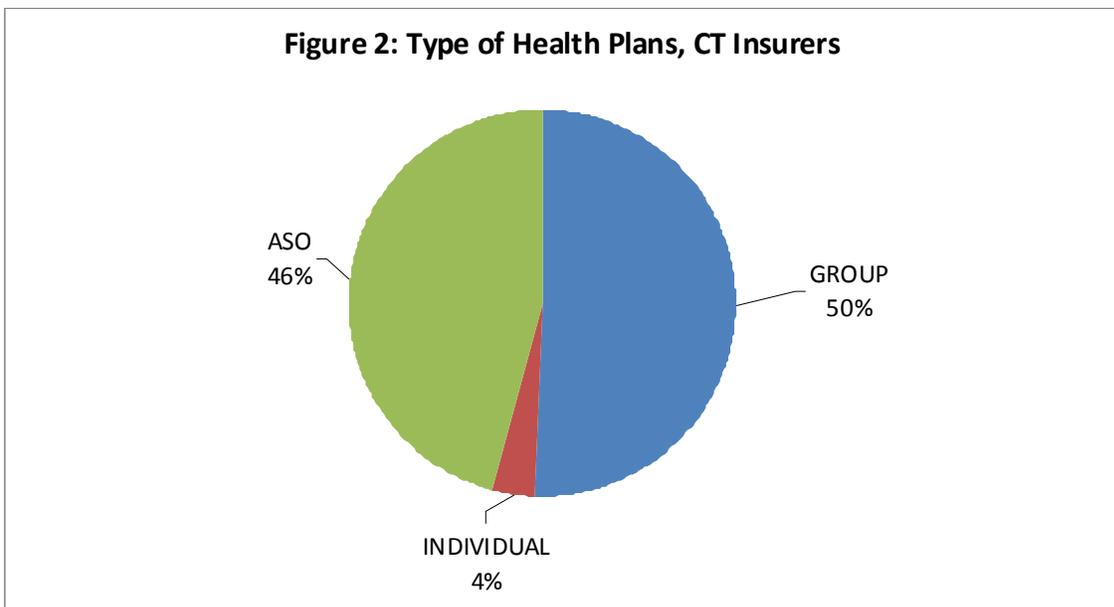
P.A. 09-179 detailed 25 issues to be addressed in the review of each mandate. These issues are divided into those which affect primarily the social impact of a mandate and those which affect primarily the financial impact, although we found a good deal of overlap among the two categories in the course of our research. Each section of this report addresses these issues for the respective proposed mandate. In addition, each section contains a background section that describes the condition, services, equipment or supplies addressed by the mandate proposal and the segment of the general population most affected by the condition, service, equipment or supplies.

**Caveat:** It is important to understand that states only have the power to mandate health insurance benefits in fully-insured products, which are regulated by the states as the business of insurance. Health plans provided by employers or organizations that do not purchase insurance policies to fund them are beyond the reach of state regulation and are only subject to federal regulation under the Employee Retirement Income Security Act (so-called ERISA pre-emption). This is so even if the employer or group sponsor contracts with an insurance company to provide “administrative services only”, because the employer retains the risk of funding the benefits itself and no insurance is involved. So-called ASO contracts are not considered insurance policies and therefore are not subject to state insurance regulation. As a practical matter, in Connecticut the Insurance Department has estimated that approximately 50% of Connecticut’s workforce is covered by fully insured health plans. Therefore, only 50% of employees in Connecticut will be covered by any benefit mandated by statute, although it is not uncommon for some state mandated benefits to be included in ASO plans. In addition, the Department has expressed a concern that the trend is for more and more employers and organizations to opt for self-insured plans, even relatively medium or small employers. Thus, state benefit mandates may be

applicable to an ever shrinking number of employees. The figures below shows the sources of health care coverage for CT residents and the types of health plans in which Connecticut residents are enrolled.



Source: Connecticut Insurer Survey conducted October 2009, UConn Center for Public Health and Health Policy



Source: State Health Facts, Kaiser Family Foundation.

Available at: <http://www.statehealthfacts.org/profileind.jsp?ind=125&cat=3&rqn=8>.

(Urban Institute and Kaiser Commission on Medicaid and the Uninsured estimates based on the Census Bureau's March 2008 and 2009 Current Population Survey (CPS: Annual Social and Economic Supplements).

## Mandates

The seven mandates for which the Insurance Committee requested review are:

- An increase in the minimum benefit for ostomy supplies and appliances,
- A new mandate for coverage of prosthetics at the level of Medicare coverage,
- An increase in the age limit of the mandate for coverage of hearing aids for children from children under 13 to children under 19,
- Inclusion of wigs for persons with alopecia areata in the current mandate for coverage of wigs for persons undergoing chemotherapy,
- A new mandate to cover initial HLA typing for persons enrolling in the National Marrow Donor Program,
- Elimination of cost-sharing for persons who have a second or subsequent colonoscopy within one policy year, and
- A new mandate for inclusion of wellness programs with financial incentives for participation as an option in group health insurance policies, which would be voluntary for the employer plan

## Process

The CPHHP performed the analysis and developed this report pursuant to a Memorandum of Agreement with the Department. The CPHHP was assisted in the development of this report by the Department, the CT Center for Economic Analysis at the University of Connecticut (CCEA), and Ingenix Consulting (Ingenix), an actuarial consulting firm. Ingenix was selected through a competitive bidding process managed by the Department.

A working group was formed, consisting of members of the CPHHP, the Insurance Department, Ingenix Consulting and the CCEA. The group met weekly from October through November. Research tasks were divided among the group as follows: the CPHHP staff researched medical issues, including the conditions addressed by the proposed mandates, the available treatments for those conditions and the medical efficacy of the treatment addressed by the mandate. CPHHP also researched the existence of other types of coverage for the conditions addressed by the mandates, including mandates in other states, Medicare and Medicaid coverage, other units of state government, and non-profit organizations. Ingenix performed the actuarial analyses and the CCEA researched the economic and financial burden issues. Ingenix and CCEA each developed separate reports, which formed the basis for the actuarial and financial burden analyses included in each of the individual mandate reports by CPHHP.

## Methodology

### *UConn Center for Public Health and Health Policy*

CPHHP staff consulted with medical librarians at the Lyman Maynard Stowe Library at the University of Connecticut Health Center (UCHC). Medical librarians conducted literature searches under search terms particular to each proposed mandate using various resources available to them.

CPHHP staff consulted with clinical faculty and staff from the University of Connecticut School of Medicine on matters pertaining to medical standards of care, current and traditional practices, and evidence-based medicine related to the proposed benefit. Additional information was gathered through telephone and e-mail inquiries to appropriate state, federal, municipal, and non-profit entities and from internet sources such as the State of Connecticut website, Medicare website, other states' websites, and the websites of non-profit and community-based organizations.

A survey of insurance companies and managed care organizations domiciled in Connecticut was developed with input from the Department, Ingenix and the CCEA. It was administered with the assistance of the Department. Seven companies and managed care organizations (MCOs) completed the survey.

### *Ingenix Consulting*

With respect to the cost of the benefit mandates, Ingenix examined two pieces—medical and administrative cost, with an emphasis on the former since it involves the greater portion of overall cost. IC's internal commercial health claims data for 2007 and 2008 were consulted, as well as various outside data sources and the survey information provided by CT carriers as requested by the state. The annual cost in 2010 dollars was determined using current utilization and medical cost levels. Costs were projected forward for the next four years and include expected changes in the finance and delivery system caused by the mandates, as well as the effect of trend on unit cost and utilization.

*Note: The estimates in these reports use a range of projected cost estimates as well as a point estimate in some cases. It should be made clear that some aspects of the calculations involve actuarial judgment. The actual 2010 cost may be greater or less than the expected values that have been projected.*

### *UConn Connecticut Center for Economic Analysis*

In order to evaluate the potential financial burden posed by the seven mandates, CCEA considered the following economic impacts for individuals with these medical needs:

- estimated out-of-pocket cost if the services or supplies are not covered as a percent of family income;
- estimated out-of-pocket costs and insurance premiums as a percent of family income representing a lower bound estimate of the total health care burden;
- average work or school days missed annually by individuals with these health needs;
- reported delays or unmet needs in receiving needed medical care; and
- disparities in income where available.

CCEA drew cost estimates from the actuarial analyses, literature reviews or personal communications. State-specific income estimates came from the Census 2009 Current Population Survey. For Connecticut, average premium cost-sharing for employees of fully-insured companies and individuals who directly purchase insurance was imputed based on AHRQ (2008) Medical Expenditure Panel Survey (MEPS) – Insurance Component. The remaining data is from MEPS – Household Component

(various pooled years 1999-2007). The MEPS- Household Component is a nationally representative survey of medical insurance, expenditures, utilization, and health status. To increase statistical validity, this analysis reports national data pooling multiple survey years. Notice is paid to conditions of low prevalence for which no statistically valid data is available.

## General Discussion

The following are general comments taken from the Ingenix and CCEA reports on the main issues that were reviewed. We strongly recommend that both the Actuarial Report, enclosed as Appendix II, and the Report on Financial Burden, enclosed as Appendix III, be read in conjunction with these mandate reports for a more in-depth discussion of the issues addressed in those reports. A Glossary of Terms is also enclosed as Appendix IV.

### *Effect of Mandates*

Any mandate that adds to the list of things health insurers must cover generally adds to the cost of medical care and insurance. The market reacts to the mandate in many ways. The mandate may induce utilization of the service or equipment, and providers may increase the rate at which the service is performed or the equipment is prescribed. The mandate may increase the unit cost of medical goods and services as increased demand increases price.

Mandates generally increase the cost of insurance and, in conjunction with medical cost inflation individuals and groups may respond at time of renewal by purchasing a lower level of coverage with increased member cost-sharing (benefit “buy downs”). Members may forego some medically important services to avoid the higher co-pays, deductibles, or coinsurance. Some employers or individual policyholders may choose to lapse coverage that has become too expensive. The impact of these benefits is small enough that any effect on a decision to lapse coverage or to buy down benefits is expected to be small. (Disenrollment tends to occur more often as a result of an abnormally large increase to a specific policy-holder.)<sup>1</sup>

### *Public health impact*

All of these seven service mandates will serve to improve the health of some individuals and thereby increase their productivity. Due to the small number of individuals affected by the narrow focus of the first six mandates, their overall affect on the public health of the entire insured population will not be as sweeping as a mandate that affects all individuals. For the few that are affected, however, these mandates may provide strongly beneficial health interventions that will enable them to live higher quality, more productive lives.<sup>2</sup>

### *Administrative/systems costs*

The vast majority of the incremental expense for the first six mandates is medical cost. However, the mandates will also necessitate changes in various operational and technological processes, such as premium billing and claims payments systems and may require notice to members or policy-holders of

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<sup>1</sup> See Ingenix report, Appendix II, pp.20-22.

<sup>2</sup> See Ingenix report, Appendix II, pp.20-22.

the changes and revision of marketing and sales material. Even for a mandate whose medical cost may be *de minimis*, there may still be an associated one-time administrative (admin) cost involved in implementation. This one-time admin cost is separate from the ongoing admin cost that occurs in subsequent years.

### *Financial burden on families*

The services and equipment covered by the proposed mandates represent a range of possible financial burdens. To the extent that coverage for services and supplies is generally not available or inadequate, families may face substantial health expenses which can place substantial financial burdens on families. Heavy financial burden may cause individuals to delay or forgo needed medical services and supplies. These choices can impact an individual or family's productivity, finances and health status.<sup>3</sup> This report defines a high burden family as spending 10% or more of their annual income on health care. High burden households are more likely to delay getting needed health care or have unmet health care needs.

The reports that follow in Parts 1 through 8 should be read with these general comments in mind.

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<sup>3</sup> See CCEA report, Appendix III, p.1.

# Part 1. Ostomy Appliances and Supplies

Review and Evaluation of Public Act 09-188

An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage

Sections 1 & 2

An Increase In Coverage for Ostomy Appliances and Supplies

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## 1.1. Executive Summary

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage (Sections 1 & 2, an increase in coverage for ostomy appliances and supplies). The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy.

The Committee requested the analysis be based on the following amendment to the bill:

Require that individual and group health insurance policies that provide coverage for ostomy surgery shall include coverage, up to five thousand dollars annually, for medically necessary appliances and supplies related to ostomy, including but not limited to, collection devices, irrigation equipment and supplies, skin barriers and skin protectors.

Current Connecticut law requires individual and group health insurance policies that provide coverage for ostomy surgery to include coverage, up to one thousand dollars annually, for medically necessary appliances and supplies related to ostomy (limited to ostomies created as part of a colostomy, ileostomy, or urostomy procedure).<sup>4</sup> The proposed mandate would increase coverage to five thousand dollars annually for medically necessary ostomy appliances and supplies, and is also limited to ostomies created as part of a colostomy, ileostomy, or urostomy procedure.

Actuarial analysis of claims data found that there are an estimated 2400 commercially insured ostomates in Connecticut; of these, 480 require more than \$1000 of appliances and supplies annually.

The incremental medical cost of increasing the existing mandate for ostomy appliances and supplies to \$5000 per year is expected to be near zero. When the cost is spread to all insureds, this cost is expected to be about one cent per person per month. As a percentage of total medical cost, this represents an incremental cost of less than 0.01 percent. The expected range is \$0.00 to \$0.03 per insured person per month.

In a survey of seven insurers and managed care organizations domiciled in Connecticut that cover 95 percent of the insured population in Connecticut (2.5 million persons), three provided unlimited coverage of ostomy appliances and supplies under their group plans while another provided unlimited coverage for 28 percent of its insureds in group plans. One insurer provided \$2500 annually in coverage while two insurers provided \$1000 annually in coverage for ostomy appliances and supplies in group plans.

Five of the seven insurers offered individual health insurance policies. Of these, one insurer provided unlimited coverage and the remaining four insurers provided \$1000 annually in coverage for ostomy appliances and supplies. Three of the seven insurers provided information about annual ostomy supplies

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<sup>4</sup> Connecticut Gen. Stat. Ann. § 38a-492j (individual insurance policies); § 38a-518j (group insurance policies).

coverage for administrative services only (ASO) plans; two insurers provided unlimited coverage to all ASO enrollees while the third provided unlimited coverage to 46.5 percent of ASO enrollees.

## 1.2. Background

### *Legislation*

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department (CID) to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage (Sections 1 & 2, an increase in coverage for ostomy appliances and supplies). The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of CID and the University of Connecticut Center for Public Health and Health Policy (CPHHP).

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### *Ostomies and Supplies*

An ostomy refers to a surgically created opening in the body that allows for the discharge of bodily wastes. The most common types of ostomies are colostomies, ileostomies, and urostomies. In a colostomy, a portion of the colon or the rectum is removed and the remaining colon is brought to the abdominal wall. In an ileostomy, a surgical opening is created in the small intestine, usually at the end of the ileum, and the intestine is brought to the abdominal wall. For colostomy and ileostomy, a stoma is formed when a portion of the colon or intestine protrudes through the abdominal wall.<sup>6</sup> Colostomies and ileostomies may be permanent or temporary, depending on the disease or injury that precipitated the ostomy surgery and the condition of remaining gastrointestinal tissues. For example, for cancer or diverticulitis, ostomy may be temporary while in the case of inflammatory bowel disease and Crohn's disease it is likely permanent since these are lifelong conditions.

Urostomy is a general term for a surgical procedure which diverts urine away from a diseased or defective bladder. Either a section at the end of the small bowel (ileum) or at the beginning of the large intestine

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<sup>5</sup> Connecticut Gen. Stat. Ann. § 38a-492j (individual insurance policies); § 38a-518j (group insurance policies).

<sup>6</sup> United Ostomy Associations of America. Available at: [www.uoaa.org](http://www.uoaa.org).

(cecum) is surgically removed and relocated as a passageway (conduit) for urine to pass from the kidneys to the outside of the body through a stoma. A stoma is the actual end of the ureter or small or large bowel that can be seen protruding through the abdominal wall.<sup>7</sup> A urostomy is rarely temporary since the diseased bladder that necessitated the surgery and the creation of the stoma is surgically removed.

Patients need ostomies following surgical removal of cancers and other diseases, due to birth defects, and as a result of injuries. A colostomy is indicated for cancer, diverticulitis, Hirschsprung's disease, imperforate anus, and trauma. An ileostomy or ileoanal reservoir is indicated for Crohn's disease, familial adenomatous polyposis, and ulcerative colitis. A urostomy is indicated for birth defects such as spina bifida, bladder cancer, malfunction of the bladder, and spinal cord injuries. Studies reveal a fairly equal distribution between the major types of ostomy surgeries (colostomy, ileostomy, and urostomy).<sup>8</sup> In 2007 there were 91,654 ostomy procedures performed in U.S. hospitals.<sup>9</sup> Fifty percent of claims were paid by Medicare, 33 percent were paid by private insurance, and 9 percent were paid by Medicaid.<sup>10</sup> An aging population may lead to an increase in the number of people with prostate, bladder, colorectal, and gynecologic cancers, diseases that can lead to ostomy surgery.

Ostomy appliances and supplies are required following surgery to collect and dispose of body waste, thus improving functioning and coping abilities of patients. Supplies also are required to keep the stoma healthy and functioning properly and the surrounding skin healthy. Typical supplies include a barrier (wafer) or faceplate, which acts as an interface between the patient's skin and the pouching system; pouches, for collecting stoma output (some are single use and some are designed to be emptied and re-used several times); pastes, which are used as a protective layer and sealant beneath ostomy appliances, and are applied directly on the skin; and various other supplies that allow proper use and hygiene including tapes, clamps, flanges, and absorbent materials. Irrigation equipment uses water to flush out the bodily waste collected in the ostomy. It is rarely used or prescribed currently.

Appliances and supplies allow ostomy patients to function at levels comparable to their healthy peers and enjoy a higher quality of life than would otherwise be experienced. Many people adapt well, although it is not uncommon for persons with ostomies to withdraw socially to some degree. Cost of supplies can be an obstacle to their proper use and inhibit functioning and quality of life. A study of veterans with ostomies found that those individuals who had difficulty paying for ostomy supplies scored lower on a quality of life questionnaire.<sup>11</sup> Ostomy pouches can fall off when improperly attached or when the adhesive wears down, which often occurs as a result of extending use of supplies beyond their functional capacity.

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<sup>7</sup> Id.

<sup>8</sup> Turnbull GB. 2003. Ostomy statistics: The \$64,000 question. *Ostomy Wound Management* 49(6). Available at: <http://www.o-wm.com/article/1756>. Accessed October 20, 2009.

<sup>9</sup> United States Department of Health and Human Services. Agency for Healthcare Research and Quality. Healthcare Cost and Utilization Project (HCUP). Available at: <http://hcupnet.ahrq.gov/>. Accessed October 20, 2009.

<sup>10</sup> Id.

<sup>11</sup> Coons SJ. 2007. Overall quality of life and difficulty paying for ostomy supplies in the Veterans Affairs ostomy health-related quality of life study: an exploratory analysis. *Medical Care* 45(9): 891-5.

## 1.3. Methodology

CPHHP staff consulted with medical librarians at the Lyman Maynard Stowe Library at the UConn Health Center (UCHC). Medical librarians conducted literature searches under search terms including Ostomy, Ostomy/statistics, Ostomy+Insurance, Ostomy/AND Equipment and Supplies, Ostomy [MESH] AND Equipment Safety [MESH] OR Consumer Product Safety[MESH].

Resources searched include:

- PubMed
- CINAHL
- SCOPUS
- Cochrane
- MarketResearch
- ICD-9 code <http://icd9.chrisendres.com/> Procedure/Tabular (V46.1 for Colostomy; V46.2 for Ileostomy; 56.2 for ureterostomy and 56.5 for ileal conduit. Note=urostomy is divided into ureterostomy and ileal conduit)
- HCUPnet <http://hcupnet.ahrq.gov/>
- Health Care Common Procedure Coding System (HCPCS)
- Council for Affordable Health Insurance [http://www.cahi.org/cahi\\_contents/resources/](http://www.cahi.org/cahi_contents/resources/)
- U.S. Government Accounting Office <http://www.gao.gov/>
- Web Search Engines (Bing; Google)
- <http://www.healthbenefitsdirect.com> Health benefits items by states

CPHHP staff conducted independent literature searches using the Cochrane Review, Pubmed, Google, and Google Scholar using similar search terms used by the UCHC medical librarians. Where available, articles published in peer-reviewed journals are cited to support the analysis. Other sources of information may also be cited in the absence of peer-reviewed journal articles. Content from such sources may or may not be based on scientific evidence.

CPHHP staff consulted with clinical faculty and staff from the University of Connecticut School of Medicine on matters pertaining to medical standards of care, current and traditional practices, and evidence-based medicine related to the proposed benefit. Additionally, practitioners in the community were consulted for additional and/or specialized information.

Additional information was gathered through telephone and e-mail inquiries to appropriate state, federal, municipal, and non-profit entities and from internet sources such as the State of Connecticut website, Medicare website, other states' websites, and non-profit and community-based organizations.

CPHHP, with the assistance of the CID and input from Ingenix Consulting and the UConn Connecticut Center for Economic Analysis (CCEA) developed and administered a survey of insurance companies and MCOs domiciled in Connecticut. Seven insurers and MCOs completed the survey.

CPHHP and the CID contracted with Ingenix Consulting to provide actuarial analysis of the proposed mandate; CPHHP engaged CCEA to provide economic analysis of the proposed mandate.

## 1.4. Social Impact

### 1. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is utilized by a significant portion of the population.

The United Ostomy Associations of America estimates that slightly more than 500,000 Americans now have some type of stoma.<sup>12</sup> Based on total population only, an estimated 5758 people in Connecticut have some type of stoma.<sup>13</sup> Of these, 2043 would be covered by group and individual insurance policies subject to the mandated benefit.<sup>14</sup> An alternative estimate could use the percentage of ostomy surgeries covered by private insurance as a basis for the number of persons requiring ostomy appliances and supplies in Connecticut. In 2007, 32.67 percent of ostomy surgeries were covered by private insurance.<sup>15</sup> This yields an estimate of 1881 patients in Connecticut who require ostomy appliances and supplies.

Actuarial analysis of claims data found that there are an estimated 2400 commercially insured ostomates in Connecticut; of these, 480 require more than \$1000 of appliances and supplies annually. (See Appendix II: Ingenix Consulting Actuarial Report, page 24.)

An alternative estimate based on economic methods including population statistics, annual number of ostomy surgeries and reversals, median age and average life expectancy of ostomates, and insurance rates concluded that 490 commercially insured ostomates require more than \$1000 of appliances and supplies annually.

Different methods employed in estimating the number of people in Connecticut with ostomies and the number of ostomates requiring more than \$1000 in appliances and supplies annually are presented to demonstrate a range of potential values. The similar findings lend credence to each estimate. In this case, the range of commercially-insured ostomates in Connecticut is estimated at 1881-2400 and the range of commercially-insured ostomates requiring more than \$1000 in appliances and supplies annually is 480-490.

To exceed the \$1000 annual threshold, monthly expenses would have to exceed \$83.33. The estimated cost of Medicare's "Usual Maximum Quantity of Supplies" for a one month supply of ostomy supplies are \$208.40; \$2500.80 annually.<sup>16</sup> This estimate includes skin barriers, drainable pouches, tape, and comfort panels. Based on expert opinion, it is estimated that the ostomy

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<sup>12</sup> United Ostomy Associations of America. Available at: <http://www.uoaa.org>.

<sup>13</sup> US Census. 2008 Population estimates for the USA and Connecticut. Available at: <http://www.census.gov/popest/states/NST-ann-est.html>. Accessed November 21, 2009.

<sup>14</sup> Based on the estimated number of persons in Connecticut covered by group and individual insurance plans subject to state regulation.

<sup>15</sup> 2007 National hospital discharges for colostomy, ileostomy, and urostomy surgeries. Available at <http://hcupnet.ahrq.gov>.

<sup>16</sup> Schaum KD. 2002. Ostomy Medicare policy update. *Advances in Skin and Wound Care* 15(5): 230-232.

monthly supply needs of the average person with an ostomy are less than the Medicare maximum.<sup>17</sup> One study based on a national sample estimates average wear time for a pouch at 4.8 days,<sup>18</sup> which is also less than the Medicare maximum.

The amount of supplies required varies with the type of ostomy: Those with an ileostomy require the most frequent changes, while those with a colostomy require less frequent changes than those with an ileostomy or urostomy. It would appear that the ostomy supply needs of very few individuals would exceed \$5000 per year, thus the increased limit of the proposed benefit would seem adequate to ensure insurance coverage of ostomy supplies for most persons who require them. An exception might be a person with a very severe case of cancer. As a result of cancer surgery, such a person may have a colostomy or ileostomy *and* a urostomy and require ostomy supplies for both following the surgery.

- 2. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is available to the population, including, but not limited to, coverage under Medicare, or through public programs administered by charities, public schools, the Department of Public Health, municipal health departments or health districts or the Department of Social Services.**

### *Medicare*<sup>19,20</sup>

Medicare covers ostomy supplies for patients who have a colostomy, ileostomy, or urinary ostomy as durable medical equipment (DME) under Medicare Part B. Medicare covers the amount of supplies as determined by the patient's physician based on the patient's medical condition. There is no annual maximum benefit. Patients are responsible for a \$135 annual deductible and 20 percent co-payment of the Medicare-approved amounts (Medicare pays the remaining 80 percent). Medicare-approved amounts are determined annually as the maximum permissible cost reimbursement ("ceiling") per specific supply item, as well as the maximum quantity of the item that is covered in a given monthly or annual period. A prescription signed by the treating physician must be on file with the supplier, and the supplier must accept Medicare assignment and have a Medicare supplier number. The patient may also have Medicare gap insurance that covers all or part of the patient's deductible and co-payments.

### *Public Programs Administered by Charities*

The Crohn's and Colitis Foundation of America may have samples from manufacturers and distributors of ostomy supplies available for ostomates who are uninsured, experiencing financial difficulties, and for those whose insurance coverage for ostomy supplies has been exhausted. The foundation's resources are limited due to their own financial constraints and those of the suppliers and manufacturers.

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<sup>17</sup> Personal communication. Judy Conway, APRN. November 6, 2009.

<sup>18</sup> Richbourg L, Fellows J, Arroyave WD. 2008. Ostomy pouch wear time in the United States. *Journal of Wound Ostomy Continence Nursing*. 35(5): 504-8.

<sup>19</sup> Medicare Coverage of Durable Medical Equipment and Other Devices – Medicare Publication # 11045.

<sup>20</sup> Medicare Coverage Guidelines for Ostomy Supplies (Connecticut).

### *Public Programs Administered by Public Schools*

No information was found that would indicate public schools would be a regular source of ostomy supplies for students or have a public program specifically for ostomy supplies.

### *The Department of Public Health (DPH)*

No information was found regarding the availability of ostomy appliances and supplies through the Connecticut Department of Public Health. There is no information about the availability of ostomy appliances and supplies on the DPH website.

### *Municipal Health Departments*

No information was found regarding the availability of ostomy appliances and supplies through local and municipal health departments in Connecticut.

### *The Department of Social Services (DSS)*

Medicaid covers many different ostomy supplies, including collection devices, irrigation equipment and supplies, skin barriers and skin protectors (among others).<sup>21</sup> DSS produces an annual list<sup>22</sup> that specifies the maximum permissible cost reimbursements (“ceiling”) per specific supply item, as well the maximum quantity of the item that is typically coverable in a given monthly or annual period. However, DSS “does not impose an annual limit for medically necessary ostomy supplies.”<sup>23</sup>

A prescription signed by the treating doctor must be on file with the supplier, which must be registered with DSS; Medicaid will not pay any claims from unauthorized suppliers. Medicaid clients are not subject to any co-pays or coinsurance for medically necessary ostomy supplies as long as they obtain the supplies from an enrolled provider.<sup>24</sup>

### **3. The extent to which insurance coverage is already available for the treatment, service or equipment, supplies or drugs, as applicable.**

Current State of Connecticut law requires coverage up to \$1000 annually for ostomy appliances and supplies for group and individual health insurance plans.<sup>25</sup> In a survey of seven insurers domiciled in Connecticut that cover 95 percent of the insured population in Connecticut (2.5 million persons), three provided unlimited coverage of ostomy appliances and supplies under their group plans while another provided unlimited coverage for 28 percent of its insureds in group plans. One insurer provided \$2500 annually in coverage while two insurers provided \$1000 annually in coverage for ostomy appliances and supplies in group plans.

Five of the seven insurers offered individual health insurance policies. Of these, one insurer provided unlimited coverage and the remaining four insurers provided \$1000 annually in coverage

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<sup>21</sup> DSS Provider Fee Schedule: Medical/Surgical Fee Schedule 2009, specifically Procedure Codes A4310-A4434.

<sup>22</sup> DSS Provider Fee Schedule: Medical/Surgical Fee Schedule.

<sup>23</sup> Correspondence from Ginny Mahoney, DSS Medical Policy Consultant, 10/26/2009.

<sup>24</sup> Id.

<sup>25</sup> Conn. Gen. Stat. Ann. § 38a-492j (individual insurance policies); § 38a-518j (group insurance policies).

for ostomy appliances and supplies. Three of the seven insurers provided information about annual ostomy supplies coverage for ASO plans; two insurers provided unlimited coverage to all ASO enrollees while the third provided unlimited coverage to 46.5 percent of ASO enrollees.

**Table 1.1: Ostomy supplies coverage limits in Connecticut under private insurance plans**

	Group Plans		Individual Plans		ASO Plans	
	Percent of enrollees with benefits equal to or exceeding limits of proposed mandate	Max annual benefit	Percent of enrollees with benefits equal to or exceeding limits of proposed mandate	Max annual benefit	Percent of enrollees with benefits equal to or exceeding limits of proposed mandate	Max annual benefit
Insurer 1	<10	unlimited	0	\$1000	<10	unlimited
Insurer 2	100	unlimited	N/A	N/A	Unable to determine	
Insurer 3	0	\$2500	N/A	N/A	Unable to determine	
Insurer 4	100	unlimited	100	unlimited	100	unlimited
Insurer 5	28	unlimited	0	\$1000	46.5	unlimited
Insurer 6	0	\$1000	N/A	N/A	0	N/A
Insurer 7	0	\$1000	0	\$1000	Unavailable	

**4. If the coverage is not generally available, the extent to which such lack of coverage results in persons being unable to obtain necessary health care treatment.**

Coverage is generally available to at least \$1000 annually for persons covered by group and individual health insurance plans. As noted above, unlimited coverage of ostomy appliances and supplies is not uncommon for policies held in Connecticut, particularly for group and ASO plans, which represent the vast majority of covered lives. Medicare and Medicaid coverage is also unlimited, provided suppliers accept assignment and are available in the communities where persons with ostomies live and work. Patient cost sharing for the Medicare population could be an obstacle for those without supplementary Medicare policies (“Medigap” coverage). Levels of patient cost-sharing are unknown for the privately insured population, and could be at levels that are difficult for some people to afford. Cost sharing that inhibits proper use of ostomy supplies at the \$1000 per year benefit level is likely to inhibit proper use of ostomy supplies at the \$1000-\$5000 per year level as well, thus the increase in the mandated upper limit may not have its intended effect.

**5. If the coverage is not generally available, the extent to which such a lack of coverage results in unreasonable financial hardships on those persons needing treatment.**

As noted above, coverage of ostomy appliances and supplies is included in commercial insurance plans purchased in Connecticut and several plans include higher coverage limits than the currently mandated benefit level of \$1000. The range of available benefit levels suggests that coverage may or may not be sufficient for an ostomate to avoid unreasonable financial hardship depending on the plan in which he or she is enrolled and the dollar value of ostomy supplies they require, and personal financial resources available. The benefit level of the current mandate was established in October 2000 and medical inflation in the intervening years has reduced the spending power of \$1000.

The economic analysis conducted by the CCEA found that the proposed mandate would decrease financial burdens on all households; however, households that were high burden without the health

care mandate will still be high burden households with the mandate. Please see Appendix III: UConn Connecticut Center for Economic Analysis Report, page 5-7 for further discussion of the financial burden of ostomy appliances and supplies.

**6. The level of public demand and the level of demand from providers for the treatment, service or equipment, supplies or drugs, as applicable.**

No published literature was found regarding the level of public demand or level of demand from providers for ostomy appliances and supplies valued at \$1000-\$5000 annually.

**7. The level of public demand and the level of demand from providers for insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable.**

No published literature was found regarding the level of demand from the public or from providers for insurance coverage of ostomy appliances and supplies up to \$5000 annually. Those individuals (and their medical providers) who require more than \$1000 in ostomy supplies/appliances per year and are currently in an insurance plan that caps the benefit at \$1000 per year are likely to have a high demand for increased insurance coverage for ostomy supplies/appliances. Expert opinion suggests providers witness the difficulties some people experience with accessing adequate quantities of ostomy supplies and the accompanying impacts on quality of life for persons with ostomies, not only among the uninsured but also among the insured population and that providers would support increased insurance coverage of ostomy supplies.<sup>26</sup>

**8. The likelihood of achieving the objectives of meeting a consumer need as evidenced by the experience of other states.**

As of August 2008, Connecticut is the only state that requires coverage of ostomy supplies/appliances for group and individual insurance plans.<sup>27</sup> Montana Administrative Rule 37.86.5007 requires Medicaid HMO policies to provide coverage for “ostomy or incontinence supplies” as durable medical equipment, only if supplied by a participating provider. Currently there are no Medicaid HMO plans offered in Montana so the Rule is not applicable at this time.<sup>28</sup>

**9. The relevant findings of state agencies or other appropriate public organizations relating to the social impact of the mandated health benefit.**

No relevant findings from any state agency or appropriate public organizations were found related to the social impact of mandated insurance coverage of ostomy appliances and supplies. Internet searches of and/or phone inquiries with states that have or had an established process for studying mandated health insurance benefits, with a relatively large number of mandated health benefits, or located in the Northeast found no existing studies of mandated coverage of ostomy supplies. States searched included Arkansas, California, Colorado, Indiana, Louisiana, Maine, Maryland,

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<sup>26</sup> Personal communication, Judy Conway, APRN. November 6, 2009.

<sup>27</sup> NAIC Compendium of State Laws on Insurance Topics. National Association of Insurance Commissioners.

<sup>28</sup> Personal communication, Montana Medicaid Agency. December 2, 2009.

Massachusetts, Minnesota, New Jersey, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia, Washington, and Wisconsin.

**10. The alternatives to meeting the identified need, including but not limited to, other treatments, methods or procedures.**

Ostomy appliances and supplies are required for persons who have undergone colostomies, ileostomies, and urostomies. There are no other treatments, methods or procedures available that could be substituted for ostomy appliances and supplies.

**11. Whether the benefit is a medical or broader social need and whether it is consistent with the role of health insurance and the concept of managed care.**

Ostomy supplies/appliances are a medical benefit as evidenced by the fact that they are traditionally covered at some level as durable medical equipment by insurance plans, Medicare, Medicaid, and self-insured plans. Ostomy supplies might also be argued to meet broader social needs since they allow persons who have undergone colostomies, ileostomies, and urostomies to function at levels that permit them to maintain employment and fully participate in social activities.

**12. The potential social implications of the coverage with respect to the direct or specific creation of a comparable mandated benefit for similar diseases, illnesses, or conditions.**

Ostomy appliances and supplies are a specialized type of durable medical equipment used as the result of a surgical intervention. It is therefore difficult to anticipate any comparable mandated benefit for similar diseases, illnesses or conditions. It is possible that higher benefit levels could be proposed to cover other types of durable medical equipment where current mandated coverage is viewed by some as less than adequate for some beneficiaries.

**13. The impact of the benefit on the availability of other benefits currently offered.**

Insurers and MCOs may look to cut costs by eliminating or restricting access to, or placing limits on other benefits currently offered. However, the availability of any benefits to be restricted may be limited. Existing benefits may be administratively costly to restrict and insurers may be contractually obligated to provide them. Additionally, many of the benefits that could be targets for elimination are included in plans for competitive advantage.

**14. The impact of the benefit as it relates to employers shifting to self-insured plans and the extent to which the benefit is currently being offered by employers with self-insured plans.**

Due to the relatively low number of persons requiring ostomy supplies/appliances and the expected small financial impact of the proposed mandate, it is not anticipated that employers will shift to self-insured plans as a result of this single proposed mandate. However, employers cognizant of the cumulative financial effects of mandated benefits and large enough to assume the risk of employee health care costs may look to opt in to self-insured plans.

There are several reasons for health insurance premium increases, including medical cost inflation, an aging population and an aging workforce, and required benefits or “mandates”. Employers considering a shift to self-insured plans are likely to weigh these and other factors prior to reaching a decision. Employers also may shift to plans with higher coinsurance amounts to keep premiums at a more affordable level (“benefit buy down”). This can result in employees not taking up coverage and thus being uninsured or not accessing care when it is needed because of high deductibles.

In a survey of seven health insurers domiciled in Connecticut covering over 941,000 Connecticut residents in Administrative Services Only (ASO) plans (“self-insured”), three provided information about coverage of ostomy appliances and supplies. Two insurers provide unlimited coverage while the other insurer currently offered unlimited coverage for 46.5 percent of enrollees in ASO plans.

### **15. The impact of making the benefit applicable to the state employee health insurance or health benefits plan.**

State employees are included in the group health insurance numbers reported by insurers in the insurer survey. Coverage limits for ostomy appliances and supplies higher than the existing mandated benefit (\$1000/year) is common among group plans in Connecticut. Since some insurers offer unlimited benefits for ostomy appliances and supplies, it is likely that some percentage of state employees currently have unlimited benefits for ostomy appliances and supplies. If insurance coverage of ostomy appliances and supplies up to \$5000/year were a mandated benefit, state employees and their dependents covered by state employee health insurance or health benefits plans would be covered by the benefit.

Like any other self-insured entity, if the state becomes self-insured, state-mandated benefits would not be required to be included in insurance policies offered to state employees.

### **16. The extent to which credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community determines the treatment, service or equipment, supplies or drugs, as applicable, to be safe and effective.**

Prior to commercial marketing, ostomy supplies must be approved as safe and effective by the U.S. Food and Drug Administration. There would seem to be few inherent risks related to the use of ostomy supplies, although adverse skin reactions to some of the materials can occur. Technological advances have improved ease of use and effectiveness of ostomy supplies, and are frequently documented in nursing and ostomy care journals.<sup>29,30</sup> However, there is a general lack of research investigating the safety and effectiveness of ostomy appliances and supplies, perhaps because they are generally composed of inert and non-toxic materials such as vinyl (bags) and pectin (wafers). Additionally, while some improvement in materials has occurred, there seems to be little medical and scientific inquiry into the development of alternatives to ostomy supplies.

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<sup>29</sup> Turnbull GB. 2001. The evolution, current status, and regulation of ostomy products in the United States. *Journal of Wound Ostomy Continence Nursing* 28(1): 18-24.

<sup>30</sup> Urostomy products: an update of recent developments. *British Journal of Community Nursing* 9(11): 482-6.

## 1.4. Financial Impact

1. **The extent to which the mandated health benefit may increase or decrease the cost of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

Due to the small number of insured ostomates in Connecticut who require ostomy appliances and supplies at the \$1000-\$5000 level, the ostomy supply mandate is not expected to materially alter the availability of supplies or their cost over the next five years. For further information, please see Appendix II: Ingenix Consulting Actuarial Report, page 24.

2. **The extent to which the mandated health benefit may increase the appropriate or inappropriate use of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

For those for whom ostomy supplies/appliances are medically necessary at the \$1000-\$5000 range, the mandated health benefit may increase appropriate use of ostomy supplies if people previously extended use beyond functional capacity. For those who use out-of-pocket funds to cover ostomy supplies at the \$1000-\$5000 range or get them from other sources, a mandated benefit may not increase appropriate use. Inappropriate use (overutilization) is not expected to occur.

3. **The extent to which the mandated health benefit may serve as an alternative for more expensive or less expensive treatment, service or equipment, supplies or drugs, as applicable.**

Ostomy appliances and supplies are required for persons who have undergone colostomies, ileostomies, and urostomies. They do not serve as an alternative for any other treatment, service or equipment, supplies or drugs. Lack of adequate ostomy appliances and supplies might lead to complications with the patient's stoma and surrounding skin, resulting in treatment that would be more expensive than the ostomy supplies.

4. **The methods that will be implemented to manage the utilization and costs of the mandated health benefit.**

It is anticipated that insurers and MCOs will utilize the same utilization management methods and cost controls that are used for other covered benefits. The proposed legislation does not prohibit insurers and MCOs from employing utilization management, prior authorization, or other utilization tools at their discretion. Insurer costs may be limited to some degree by patient cost sharing, and overall cost impact is likely to be limited due to the relatively small percentage of the insured population that requires ostomy appliances and supplies.

- 5. The extent to which insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, may be reasonably expected to increase or decrease the insurance premiums and administrative expenses for policyholders.**

The incremental medical cost of increasing the existing mandate for ostomy appliances and supplies to \$5000 per year is expected to be near zero. When the cost is spread to all insureds, this cost is expected to be about one cent per person per month. As a percentage of total medical cost, this represents an incremental cost of less than 0.01 percent. The expected range is \$0.00 to \$0.03 PMPM. Please see Appendix II: Ingenix Consulting Actuarial Report, pages 13-14 & 29 for further discussion.

- 6. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is more or less expensive than an existing treatment, service or equipment, supplies or drugs, as applicable, that is determined to be equally safe and effective by credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community.**

Not applicable. Ostomy appliances and supplies are required for persons who have undergone colostomies, ileostomies, and urostomies and there is no alternative to their use.

- 7. The impact of insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, on the total cost of health care, including potential benefits or savings to insurers and employers resulting from prevention or early detection of disease or illness related to such coverage.**

For people with ostomies who require appliances and supplies above the \$1000 benefit level, the increase in coverage can prevent complications that can occur when supplies are used for longer time periods than recommended. Use of ostomy supplies beyond recommended time periods can lead to pouch leakage, which precipitates peristomal skin complications that require treatment. On rare occasions, the stoma can also become infected.

Benefits of the proposed mandate could also accrue to employers in terms of the available labor force. An economic analysis conducted by CCEA found that the cost level of ostomy supplies covered in proposed mandate could allow some workers to return to work who otherwise would not. The economic benefits to business of such ostomates returning to work are higher than the value of the ostomy supplies they require that are covered by the mandate.

- 8. The impact of the mandated health care benefit on the cost of health care for small employers, as defined in section 38a-564 of the general statutes, and for employers other than small employers.**

No published literature was found regarding the effect of mandated coverage of ostomy supplies at \$5000 per year on the cost of health care for small employers. Although small employers may be more sensitive to premium increases than other employers, the estimated cost of the mandate (\$.01 PMPM) suggests little difference in effects among different types of employers.

**9. The impact of the mandated health benefit on cost-shifting between private and public payers of health care coverage and on the overall cost of the health care delivery system in the state.**

Due to the low prevalence of ostomates in the insured population who require more than \$1000 of ostomy appliances and supplies per year, the mandated benefit is not expected to have an impact on cost-shifting between private and public payers. The actuarial analysis estimated an increase of \$.01 PMPM in medical cost. If all of the estimated 480 commercially insured individuals who require over \$1000 in ostomy appliances and supplies in Connecticut used the average of an additional \$850 benefit in 2010, the total cost added to the health delivery system would be \$408,000.

# Part 2. Prosthetic Devices

Review and Evaluation of Public Act 09-188

An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage

Sections 3 & 4

Health Insurance Coverage of Prosthetic Devices

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## Part 2. Contents

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## 2.1. Executive Summary

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the health benefits resulting from the proposed insurance mandates contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage (Sections 3 & 4, health insurance coverage for prosthetic devices that is at least equivalent to that provided under Medicare). The review was conducted following the requirements stipulated under Public Act 09-179. The Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy collaborated in this review.

The Committee requested the analysis be based on the following amendment to the bill:

Require that individual and group health insurance policies delivered, issued for delivery, renewed, amended or continued in Connecticut provide coverage for prosthetic devices that is at least equivalent to that provided under Medicare.

Such policy shall also provide coverage for the medically necessary repair or replacement of a prosthetic device.

The actuarial analysis, provided by Ingenix Consulting, estimates that about 600 commercially insured amputees in Connecticut will acquire prosthetic devices in 2010.

The expected medical cost of the prosthetics mandate will be about 0.1% of the total cost of health care in year one. This amounts to about \$0.25 to \$0.45 per insured person per month.

Most insurance plans currently include some type of coverage for prosthetic devices. Cost sharing or other features (e.g., one-per-lifetime benefit for prosthetic device/artificial limb; under DME coverage) of some policies may limit access to appropriate devices. A survey of seven insurers and managed-care organizations domiciled in Connecticut, covering 95 percent of the insured population in Connecticut (2.5 million residents), found all seven had existing coverage for prosthetic devices in group and administrative services only plans, some at the level of the proposed mandate. Not all individual plans provide coverage of prosthetic limbs.

## 2.1. Background

### *Legislation*

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department (CID) to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage (Sections 3 & 4, health insurance coverage for prosthetic devices that is at least equivalent to that provided under Medicare). The review was conducted following the requirements stipulated under Public Act 09-179. CID and the University of Connecticut Center for Public Health and Health Policy (CPHHP) collaborated in conducting this review.

The Committee requested the analysis be based on the following amendment to the bill:

Require that individual and group health insurance policies delivered, issued for delivery, renewed, amended or continued in Connecticut provide coverage for prosthetic devices that is at least equivalent to that provided under Medicare.

Such policy shall also provide coverage for the medically necessary repair or replacement of a prosthetic device.

### *Prosthetic Devices*

Prosthetic devices, or artificial limbs, are used for rehabilitation and restoration of functionality for persons who have undergone amputation or who were born with a congenital anomaly that resulted in a missing or malformed limb. Amputations of an arm or leg result from the effects of dysvascular disease, diabetes, trauma, or malignancy. In some cases of birth defect, a malformed limb may be amputated to accommodate fitting of a prosthetic device. The majority of amputations are the result of dysvascular disease.<sup>31</sup> Over 90 percent of all surgical amputations involve lower extremities and are classified as below the knee or above the knee.<sup>32</sup> Upper extremity amputation is usually due to trauma or birth defect; disease is a significant contributing factor.

For patients who want to be fitted with and use a prosthetic device, ability to pay and general well-being may be obstacles. The high cost of prosthetic devices and services required to use them, including fitting, training, physical therapy, repair, and maintenance can make them unaffordable, even for people with insurance coverage, especially when such coverage requires high levels of cost sharing. Some lower leg amputees may not have the strength or desire to adapt to use of a prosthetic device, and consequently choose to use a wheelchair. Lower leg prostheses require considerable exertion by the user; a below-the-knee prosthetic can require a 45 percent increase in base metabolic rate; an above-the-knee prosthetic can require a 65 percent increase in base metabolic rate.<sup>33</sup> Prosthetic devices equipped with microprocessors require less physical and mental energy to operate. Those amputees who enjoyed a more active lifestyle or employment are better equipped to resume it with such a device.

Upper limb prosthetic devices are often more expensive than lower limb prosthetics due to the increased complexity of the design and functionality of upper limb prosthetics. Most upper limb prosthetic devices have built-in mechanisms or microprocessors to allow grasping of objects and replicate other hand and arm movements that improve functional capacity of amputees.

Prosthetic devices range widely in cost, depending on intended use, degree and type of amputation, and technological sophistication of the device. For example, a low-end prosthetic hand can cost under \$1000, while a full arm prosthetic (attached at the shoulder) with microprocessor-equipped joints and surface sensors on the hand can cost over \$50,000. An above-the-knee prosthetic device ranges in cost from \$7,000-\$60,000; typical costs are approximately \$40,000. A below-knee prosthetic, the most common needed and prescribed, typically costs \$5000-\$8000. The surgeon performing the amputation and the prosthetist work with the patient to determine the most appropriate device for the patient, based

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<sup>31</sup> Ziegler-Graham K, MacKenzie EJ, Ephraim PL, et al. 2008. Estimating the prevalence of limb loss in the United States: 2005 to 2050. *Archives of Physical Medicine and Rehabilitation* 89: 422-9.

<sup>32</sup> Id.

<sup>33</sup> Personal communication, James Menzoian, MD. University of Connecticut Health Center, Surgery Department. November 3, 2009.

on age, weight, activity level, and lifestyle. Depending on the type and intended use of the prosthetic device and patient characteristics, prosthetic devices usually need to be replaced every 3-5 years.

## 2.3. Methodology

CPHHP staff consulted with medical librarians at the Lyman Maynard Stowe Library at the UConn Health Center (UCHC). Medical librarians conducted literature searches under search terms including “Prostheses and Implants”, “Artificial Limbs/statistics and numerical data”, “Artificial Limbs/supply and distribution”, “Artificial Limbs/trends”, “Artificial Limbs/utilization”. Limits: published in the last ten years, English language.

Resources searched include:

- PubMed
- CINAHL
- SCOPUS
- Cochrane
- MarketResearch
- ICD-9 (84.40-84.48 Implantation or fitting of prosthetic limb device)
- Health Care Common Procedure Coding System (HCPCS) <http://hcupnet.ahrq.gov/>
- Council for Affordable Health Insurance [http://www.cahi.org/cahi\\_contents/resources/](http://www.cahi.org/cahi_contents/resources/)
- CT Government document search <http://search.cga.state.ct.us/>
- U.S. Government Accounting Office <http://www.gao.gov/>
- Web Search Engines (Bing; Google)
- National Rehabilitation Hospital
- Amputee Coalition of America <http://www.amputee-coalition.org>
- National Amputee Center <http://www.waramps.ca/nac/limbs.html>
- [http://www.amputee-coalition.org/Fact\\_Sheets/Assist\\_Orgs.Html](http://www.amputee-coalition.org/Fact_Sheets/Assist_Orgs.Html)
- General Resources  
<http://www.nrhrefab.org/Information+and+Resources/General+Resources/default.aspx>
  - American Congress of Rehabilitation Medicine
  - American Medical Rehabilitation Providers Association
  - American Physical Therapy Association
  - American Occupational Therapy Association
  - American Paraplegia Society
  - Centers for Disease Control and Prevention
  - The Commission on Accreditation of Rehabilitation Facilities
  - International Paralympic Committee
  - The Joint Commission
  - National Center for the Dissemination of Disability Research
  - National Committee on Quality Assurance
  - National Council on Independent Living
  - National Rehabilitation Information Center

- National Institutes of Disability and Rehabilitation Research
- Think First Prevention Programs

CPHHP staff conducted independent literature searches using the Cochrane Review, Pubmed, Scopus, Google, and Google Scholar, using similar search terms the UCHC medical librarians used. Where available, this review cites articles published in peer-reviewed journals to support the analysis; it cites other sources of information in the absence of peer-reviewed journal articles. Content from such sources may or may not be based on scientific evidence.

CPHHP staff consulted with clinical faculty and staff from the University of Connecticut School of Medicine on matters pertaining to medical standards of care, current and traditional practices, and evidence-based medicine related to the proposed benefit. Additionally, staff consulted practitioners in the community for additional and/or specialized information.

Staff gathered additional information through telephone and e-mail inquiries to appropriate state, federal, municipal, and non-profit entities and from internet sources such as the State of Connecticut website, Medicare website, other states' websites, and non-profit and community-based organizations.

CPHHP staff, with the assistance of the CID and input from Ingenix Consulting and the UConn Connecticut Center for Economic Analysis (CCEA), developed and administered a survey of insurance companies and managed-care organizations (MCOs) domiciled in Connecticut; seven companies and MCOs completed the survey.

CPHHP and the CID contracted with Ingenix Consulting to provide actuarial analysis of the proposed mandate; CPHHP engaged CCEA to provide economic analysis of the proposed mandate.

## 2.4. Social Impact

### 1. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is utilized by a significant portion of the population.

Estimates are that 185,000 individuals undergo amputation of an upper or lower limb in the United States annually.<sup>34</sup> An estimated 1.6 million persons were living with the loss of a limb in 2005.<sup>35</sup> Most people who experience loss of a limb do not use a prosthetic device. In 1994 (the most recent year for which an estimate is available), the National Center for Health Statistics reported that approximately 199,000 persons in the U.S. were using an artificial limb, of which 173,000 (87 percent) used an artificial leg or foot.<sup>36</sup>

The Ingenix Consulting actuarial analysis estimates that about 600 commercially insured amputees in Connecticut will acquire prosthetic devices in 2010. (See Appendix II: Ingenix Consulting Actuarial Report, pages 23 & 28)

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<sup>34</sup> Owings M, Kozak L. 1998. Ambulatory and inpatient procedures in the United States, 1996. *Vital Health Statistics* 13(139): 1-119.

<sup>35</sup> Ziegler-Graham K, MacKenzie EJ, Ephraim PL, et al. 2008.

<sup>36</sup> National Center for Health Statistics. *Disability Report*, Table 1, 1994.

2. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is available to the population, including, but not limited to, coverage under Medicare, or through public programs administered by charities, public schools, the Department of Public Health, municipal health departments or health districts or the Department of Social Services.

### *Medicare*

Medicare covers prosthetic devices, including artificial limbs as Durable Medical Equipment under Medicare Part B. In 2009, Medicare required an annual deductible of \$135 for an enrollee and a 20 percent co-pay of Medicare approved amounts.<sup>37</sup> A doctor's order, itemizing each separately billed component of the prosthesis, must be on file with the supplier and available to the Durable Medical Equipment Regional Carrier for Connection upon request.<sup>38</sup>

Adjustments and repairs of prostheses and their components are covered under the original order. Medicare covers replacement prostheses if the patient has experienced a change in condition that has rendered the prosthesis no longer useful/appropriate, if there is irreparable wear or damage, or if the repair costs would be more than 60 percent of the cost of a new prosthesis.<sup>39</sup>

Medicare covers costs for adjustments and repairs of the prostheses under the original order. If the estimated repair cost exceeds the charge for a new prosthesis, Medicare limits to the amount to the cost of a new prosthesis.<sup>40</sup>

Medicare covers lower limb prostheses (i.e.: foot, knee and ankle prosthesis) for patients who are both motivated to ambulate and who will reach or maintain a defined functional state within a reasonable period of time.<sup>41</sup> Patients seeking Medicare coverage for prosthetic limbs are evaluated on a 0-4 scale that assesses the patient's functional level (his/her potential and desire to successfully ambulate). The evaluation assigns a level "0" to patients who lack either the ability or desire to become ambulatory; Medicare does not cover prosthetic devices for patients in the "Level 0" category. Patients with a functional level between 1 (low expectation for ambulatory success) and 4 (high expectation for ambulatory success) may be eligible for Medicare coverage for their prosthesis.<sup>42</sup>

### *Public Programs Administered by Charities*

The study found eleven charitable organizations that may provide prosthetic devices to those in need in Connecticut. The actual number of Connecticut residents served by these organizations is currently unavailable. Some provide services to children only. Resources available through any charitable organization may be limited and eligibility requirements (e.g., income or geographical location) can limit access.

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<sup>37</sup> Medicare Coverage Guidelines for Artificial Limbs and Eyes (Connecticut)

<sup>38</sup> Medicare Coverage Guidelines for Prosthetic Devices (Connecticut)

<sup>39</sup> Id.

<sup>40</sup> Id.

<sup>41</sup> Medicare Coverage Guidelines for Lower Limb Prostheses (Connecticut)

<sup>42</sup> 2009 Region A (which includes Connecticut) Durable Medical Equipment Regional Carrier Supplier Manual, Chapter 10

### *Public Programs Administered by Public Schools*

The study found no information on the availability of prosthetic devices through public programs administered by public schools.

### *The Department of Public Health (DPH)*

The study found no information on the availability of prosthetic devices through the Connecticut Department of Public Health. Searches for “prosthetic device” and “artificial limbs” on the DPH website returned no results related to the availability of prosthetic devices through DPH.

### *Municipal Health Departments*

The study found no information on the availability of prosthetic devices through local and municipal health departments.

### *The Department of Social Services (DSS)*

**Medicaid:** DSS pays for the “purchase or repair of a medically necessary and medically appropriate orthotic or prosthetic device,”<sup>43</sup> which includes a device meant to “artificially replace a missing portion of the body.”<sup>44</sup> Coverage is subject to the conditions and limitations of DSS’ fee schedule. DSS does not cover items not listed on the fee schedule. A provider or client may request that an item be added to the fee schedule, but such requests are subject to the sole discretion of DSS.<sup>45</sup>

To qualify for coverage, a licensed practitioner must first prescribe the orthotic or prosthetic device. Upon receipt of a valid prescription for an item on DSS’ published Prosthetic/Orthotic Fee Schedule, the enrolled vendor or supplier (“provider”) must obtain prior authorization from DSS to fill the prescription. Upon approval of the prior authorization request, the provider may then furnish the orthotic or prosthetic device to the Medicaid beneficiary. The provider may subsequently seek reimbursement from DSS.

Medicaid pays the lowest of the following for any given orthotic or prosthetic item: (1) the usual and customary charge; (2) the lowest Medicare rate; (3) the amount in the applicable fee schedule as published by DSS; (4) the amount billed by the provider to the department; (5) the amount the department indicates in writing in a prior authorization.<sup>46</sup>

There are no annual coverage limits or co-pay and coinsurance costs for medically necessary orthotic or prosthetic devices.<sup>47</sup>

**Bureau of Rehabilitation Services (BRS):** The BRS provides assistive technology services, such as adaptive equipment for mobility, communication, and specific work activities; such service includes prosthetic devices. To be eligible, a person must have a physical or mental condition posing a

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<sup>43</sup> DSS Connecticut interchange MMIS: Provider Manual, Chapter 7 (MEDS), Sec. 17b-262-740(a)

<sup>44</sup> DSS Connecticut interchange MMIS: Provider Manual, Chapter 7 (MEDS), Sec. 17b-262-737(14)(A)

<sup>45</sup> DSS Connecticut interchange MMIS: Provider Manual, Chapter 7 (MEDS), Sec. 17b-262-740(a)

<sup>46</sup> DSS Connecticut interchange MMIS: Provider Manual, Chapter 7 (MEDS), Sec. 17b-262-743(c)

<sup>47</sup> Correspondence from Ginny Mahoney, DSS Medical Policy Consultant, 10/26/2009

substantial barrier to employment, and must require vocational rehabilitation services to prepare for, find, and succeed in employment, with a priority on a paid job in the competitive labor force.

**3. The extent to which insurance coverage is already available for the treatment, service or equipment, supplies or drugs, as applicable.**

Most insurance plans include some type of coverage for prosthetic devices. Cost sharing or other features (e.g., one-per-lifetime benefit for prosthetic device/artificial limb; under DME coverage) of some policies can limit access to appropriate devices. A survey of seven insurers and MCOs domiciled in Connecticut that cover 95 percent of the insured population in Connecticut (2.5 million residents) found all currently provide coverage for prosthetic devices in group and administrative services only (ASO) plans, some at the level of the proposed mandate. Not all individual plans include coverage of prosthetic limbs.

**Table 2.1: Prosthetic device (artificial limb) coverage in Connecticut under private insurance plans equal to or exceeding limits of the proposed mandate.**

	Percent of enrollees in group plans with benefits equal to or exceeding limits of proposed mandate	Percent of enrollees in individual plans with benefits equal to or exceeding limits of proposed mandate	Percent of enrollees in ASO plans with benefits equal to or exceeding limits of proposed mandate	Percent of plans that consider prosthetic devices under DME
Insurer 1	<10	0	<10	100
Insurer 2	Some, unable to determine	N/A	Unavailable	0
Insurer 3	Some, unable to determine	N/A	Unavailable	0
Insurer 4	41	7	31	100
Insurer 5	28	0	0	0
Insurer 6	Unknown	N/A	Unknown	*
Insurer 7	0	0	Unavailable	Unknown

\*Included in plans with DME benefits under separate maximum.

**4. If the coverage is not generally available, the extent to which such lack of coverage results in persons being unable to obtain necessary health care treatment.**

Coverage of prosthetic devices is generally included in insurance plans purchased in Connecticut. Plans have a range of benefit levels, including various copayments, coinsurance, deductibles, and annual benefit maximums. The proposed benefit would require uniformity in coverage across insurers and policies, which might allow improved access to prosthetic devices to insured persons who could benefit from them. The proposed benefit would do little to improve access for people who could benefit from prosthetic devices but who are uninsured. Nationally, 13 percent of the population with the “most severe movement difficulty” is uninsured.<sup>48</sup>

**5. If the coverage is not generally available, the extent to which such a lack of coverage results in unreasonable financial hardships on those persons needing treatment.**

<sup>48</sup> Altman B, Bernstein A. 2008. Disability and health in the United States, 2001–2005. Hyattsville, MD: National Center for Health Statistics.

As noted above, commercial insurance plans purchased in Connecticut generally include coverage of prosthetic devices. Plans have a range of benefit levels, including various copayments, coinsurance, deductibles, and annual benefit maximums that may or may not be sufficient for the amputee to avoid unreasonable financial hardship. The cost of a prosthetic device is a major barrier to access for an amputee who desires one but does not have insurance coverage for it. For an uninsured non-wealthy individual who could benefit from a prosthetic device that includes technologically advanced materials, components and design, price would be a major obstacle because these types of prostheses can cost over \$50,000.

Please see Appendix III: UConn Center for Economic Analysis Report, page 7-9 for further discussion of the financial burden of prosthetic devices.

## **6. The level of public demand and the level of demand from providers for the treatment, service or equipment, supplies or drugs, as applicable.**

Public demand for prosthetic devices is expected to increase in coming years due to several well-recognized factors: overall population growth in the United States, the aging of the population, and increasing rates of conditions such as diabetes and dysvascular disease.<sup>49, 50</sup> These factors increase amputation rates, which drives public demand for prosthetic devices.

Advances in materials and design are also expected to increase demand for prosthetic devices. Adaptation to and use of a prosthetic device requires considerably more physical strength and exertion than using one's own limb. Lighter weight materials, improved design, and computer-assisted or microprocessor-equipped prostheses may lead to increasing utilization among amputees who lack the physical strength to use the artificial limbs currently available.

## **7. The level of public demand and the level of demand from providers for insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable.**

Those individuals who have experienced limb loss whose current insurance plans do not include coverage for prosthetic devices or have coverage that requires high levels of cost sharing are likely to have a high demand for insurance coverage for prosthetic devices that is equivalent to Medicare coverage. Without adequate insurance coverage, they may be forced to forego use of a prosthetic device, pay the difference between existing coverage and cost, or use a prosthetic device that is ill-fitting or in need of repair or maintenance (which can lead to other health problems).

For most people, coverage for prosthetic limbs at Medicare coverage levels is not likely to be a high demand item when enrolling in a health plan.

This study found no published literature about the level of demand from providers for insurance coverage for prosthetic devices at Medicare levels. It is likely that prosthetists (professionally trained providers of artificial limb products and services) would have a high demand for insurance coverage

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<sup>49</sup> See US Census Bureau for information about the increasing US population and estimated growth of proportion of older Americans.

<sup>50</sup> The US Centers for Disease Control and Prevention (CDC) estimates that diagnosed diabetes is projected to increase from 11 million in 2000 to 29 million in 2050. (National Diabetes Fact Sheet).

of prosthetic devices, because they are likely to witness the effects that lack of insurance or inadequate insurance coverage has on their patients. An interview with a local prosthetist supported this assumption.<sup>51</sup>

**8. The likelihood of achieving the objectives of meeting a consumer need as evidenced by the experience of other states.**

According to the National Association of Insurance Commissioners, as of August 2008, five states require coverage for prosthetic devices. Arkansas enacted a mandate for “Orthotic and Prosthetic Devices or Services” in 2009. Colorado and Maine require coverage at the same level as Medicare, which is similar to coverage levels of the proposed benefit in Connecticut. The Amputee Coalition of America reports that seven states have enacted “prosthetic parity laws” as of 2007: California, Colorado, Massachusetts, Maine, New Hampshire, Oregon, and Rhode Island.<sup>52</sup>

**Table 2.2: States with Mandated Coverage of Prosthetic Devices<sup>53</sup>**

State	Coverage
Colorado	Must provide coverage for prosthetic device equal to federal law requirements specified in statute. “Prosthetic device” means an artificial device to replace an arm or leg.
Maine	Insurers must provide coverage for a prosthetic arm or leg that meets the medical needs of the enrollee as determined by the enrollee’s provider. Coverage must be at minimum, equivalent to Medicare.
Maryland	Nonprofit health service plans that provide hospital benefits shall provide hospital benefits for prosthetic devices and orthopedic braces.
Michigan	Health care corporations shall offer or include coverage for prosthetic devices to maintain or replace the body part of an individual whose covered illness or injury has required the removal of that body part.
New Hampshire	Plans with hospital expenses must provide coverage for prosthesis to replace arm or leg. May not impose separate lifetime maximum on coverage for prosthetic devices.

**9. The relevant findings of state agencies or other appropriate public organizations relating to the social impact of the mandated health benefit.**

This review found completed studies that include the social impact of health insurance mandates for prosthetic devices for California, Maine, Maryland, Massachusetts, New Jersey, Pennsylvania, and Virginia. The studies for California, Maine, and Massachusetts found that prosthetic devices can help improve physical and psychological functioning of persons with amputations and injuries by enabling them to exercise, work, and perform other activities of daily living and, thus, reduce their dependence on caretakers.<sup>54,55,56</sup> Maryland stated that “prosthetic devices enable amputees to perform

<sup>51</sup> Personal communication. Todd Sleeman, CP. November 4, 2009.

<sup>52</sup> Calhoun K. 2007. 2007 Annual Report of the Amputee Coalition of America. Available at: [http://www.amputee-coalition.org/annual\\_report/2007\\_annual\\_report.pdf](http://www.amputee-coalition.org/annual_report/2007_annual_report.pdf). Accessed December 1, 2009.

<sup>53</sup> NAIC Compendium of State Laws on Insurance Topics. National Association of Insurance Commissioners.

<sup>54</sup> California Health Benefits Review Program. 2006. Analysis of Assembly Bill 2012: Orthotic and Prosthetic Devices. Report to the Calif. State Legislature. Oakland, CA: CHBRP. 06-06. Maine Bureau of Insurance. 2003. 2003. A report to the joint standing committee on insurance and financial services of the 121st Maine Legislature: Review and Evaluation of LD125, an Act to Promote Fairness and Opportunity for Working Amputees.

<sup>55</sup> Maine Bureau of Insurance. 2003. 2003. A report to the joint standing committee on insurance and financial services of the 121st Maine Legislature: Review and Evaluation of LD125, an Act to Promote Fairness and Opportunity for Working Amputees.

everyday activities, return to work, and contribute to society.”<sup>57</sup> New Jersey concluded it “is possible to make a qualitative statement that that mandate would be beneficial” in “reduc(ing) the financial burden on those who obtain such services, or lead to improved results in other areas such as mental health and employability.”<sup>58</sup> Pennsylvania referenced information from the Amputee Coalition of America that states, “the proposed benefit can improve the physical and psychological health of persons with limb loss. Prosthetic devices enable amputees to work, perform daily activities, exercise, and live independently.”<sup>59</sup> Virginia stated that “ideally, the role of prosthesis is to replace lost physical functions, add mobility, and provide cosmetic, sensory, and expressive functions.”<sup>60</sup>

## **10. The alternatives to meeting the identified need, including, but not limited to, other treatments, methods or procedures.**

This study found no published literature that describes alternatives to prosthetic devices that would provide equivalent levels of functionality and quality of life for the population of amputees who meet current criteria for appropriate use of prosthetic devices.

## **11. Whether the benefit is a medical or broader social need and whether it is consistent with the role of health insurance and the concept of managed care.**

Prosthetic devices are a medical benefit as they are included in medical treatment plans for amputees and evidenced by the fact that they are traditionally covered at some level by private and public insurers. One of the primary roles of health insurance is to cover unexpected medical costs, such as amputation and its associated costs. Coverage of prosthetic devices at Medicare equivalency levels still requires cost-sharing by the insured, which can be substantial due to the costs of the prosthesis; thus the proposed benefit preserves an important facet of managed care.

Prosthetic devices also respond to a broader social need by helping persons who need artificial limbs to live independently, maintain employability, and work to support themselves and their families. In 2005, the U.S. Department of Education established the use of and need for assistive and information technologies in the United States, based on 2001 data. It pointed out that of those using assistive technologies, only 21 percent were gainfully employed or running a business, five percent were homemakers, 47 percent were unemployed due to their disability, 17 percent were retired, and 10 percent were looking for work.<sup>61</sup> These results imply that about 31 percent of users of prosthetics are actively in the labor force.

## **12. The potential social implications of the coverage with respect to the direct or specific creation of a comparable mandated benefit for similar diseases, illnesses, or conditions.**

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<sup>56</sup> Division of Health Care Finance and Policy, Commonwealth of Massachusetts. 2005. Commonwealth of Massachusetts Mandated Benefit Review: Review and Evaluation of Proposed Legislation to Mandate Coverage for Certain Prosthetic Devices: H.376. Provided for the Joint Committee on Financial Services.

<sup>57</sup> Department of Legislative Services, Maryland General Assembly. 2009. Fiscal and Policy Note, House Bill 579, Prosthetic Parity Act.

<sup>58</sup> Mandated Health Benefits Advisory Commission. 2006. A study of Assembly Bill A-1011. Available at:

<sup>59</sup> Pennsylvania Health Care Cost Containment Council. 2007. Mandated Benefits Review by the Pennsylvania Health Care Cost Containment Council: House Bill 317, Prosthetic Devices.

<sup>60</sup> Special Advisory Commission on Mandated Health Insurance Benefits. 2003. Mandated Coverage for Artificial Limbs, House Bill 2552. Commonwealth of Virginia: Richmond.

<sup>61</sup> U.S. Department of Education. 2005. Assistive Technology and Information Technology Use and Need by Persons with Disabilities in the United States, 2001. pp. 50-51.

The loss of a limb is a unique medical condition and prosthetic devices are a highly specialized form of treatment. It is therefore difficult to anticipate any comparable mandated benefit for similar diseases, illnesses, or conditions. Some states that have proposed or enacted mandated coverage for prosthetic devices have also proposed or enacted mandated coverage for orthotic devices. Because the proposed mandate only includes coverage for, “an artificial limb device to replace, whole or in part, an arm or a leg,”<sup>62</sup> it is possible that a coverage mandate could be proposed to cover other types of prosthetic devices used for replacing other body parts, such as toes, fingers, and eyes.

The benefit structure of the proposed mandate (based on Medicare benefit levels) could potentially be replicated for other diseases, illnesses, or conditions dissimilar to prosthetic devices if benefit levels in group and individual insurance plans were viewed as inadequate and typically offered at levels lower than the Medicare benefit.

### **13. The impact of the benefit on the availability of other benefits currently offered.**

Insurers and MCOs may look to cut costs by eliminating or restricting access to, or placing limits on other benefits currently offered. However, the availability of any benefits to be restricted may be limited. Existing benefits may be administratively costly to restrict and insurers may be contractually obligated to provide them. Additionally, many of the benefits that could be targets for elimination are included in plans for competitive advantage.

### **14. The impact of the benefit as it relates to employers shifting to self-insured plans and the extent to which the benefit is currently being offered by employers with self-insured plans.**

This review does not anticipate that employers will shift to self-insured plans as a result of this single proposed mandate. However, employers cognizant of the cumulative financial effects of mandated benefits and large enough to assume the risk of employee health care costs may look to switch to self-insured plans. Of the proposed benefits reviewed in 2009, the actuarial analysis projected prosthetic device coverage would have the greatest effect on insurance costs, due to the potential high costs of production, fitting, maintenance, and repair of prosthetic devices.

There are several reasons for health insurance premium increases, including medical cost inflation, an aging population and an aging workforce, and required benefits or “mandates”. Employers considering a shift to self-insured plans are likely to weigh these and other factors prior to reaching a decision. Employers also may shift to plans with higher coinsurance amounts to keep premiums at a more affordable level (“benefit buy down”). This can result in employees not taking up coverage and thus being uninsured or not accessing care when it is needed because of high deductibles.

In a survey of seven health insurers domiciled in Connecticut covering over 941,000 Connecticut residents in Administrative Services Only (ASO) plans (“self-insured”), three reported data for prosthetic device coverage in ASO plans. Two of the three indicated they have some ASO plans

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<sup>62</sup> State of Connecticut Public Act No. 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage.

with coverage for prosthetic devices at the level of the proposed benefit (equivalent to Medicare coverage).

## **15. The impact of making the benefit applicable to the state employee health insurance or health benefits plan.**

State employees are included in the group health insurance numbers insurers reported in the insurer survey. Some level of coverage for prosthetic devices is common among group plans in Connecticut. If minimum coverage for prosthetic devices was at Medicare levels and was a mandated benefit, state employees and their dependents covered by state employee health insurance or health benefits plans would be covered by the benefit.

Like any other self-insured entity, if the state becomes self-insured, the law would not cover insurance policies the state offers to state employees; these policies may then not include coverage for prostheses.

## **16. The extent to which credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community determines the treatment, service or equipment, supplies or drugs, as applicable, to be safe and effective.**

A review of the literature on the effectiveness of lower extremity prostheses found difficulties in obtaining a comfortable socket fit, prostheses weight and alignment, and ability to manufacture rapidly a prosthetic socket that can accommodate the changing sizes in the residual limb.<sup>63</sup> Despite these issues, the majority of persons (85 percent) fitted with a lower extremity prosthetic device use them.<sup>64</sup> Abandonment seems to occur slightly more frequently for upper limb prosthetics—a self-administered survey found 20 percent of upper limb amputees had abandoned prosthesis use.<sup>65</sup> Some research suggests that children with unilateral congenital below-the-elbow deficiency frequently abandon their prosthesis and score as well or higher than wearers on a functionality test and there were no differences in a quality-of-life inventory.<sup>66</sup>

Studies often cite poor fit, improper alignment, and the extent to which the prosthetic device meets the needs of the patient as primary causes of reduced functioning and psychosocial problems for amputees and abandonment of prosthetic devices.<sup>67,68</sup> While prostheses are being developed using lightweight, strong materials and sophisticated components that address some of difficulties that lead to poor results and abandonment/rejection of prosthetic devices, attention to the unique needs and clinical outcomes of the individual remains critical.

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<sup>63</sup> Collins DM, Karmarkar A, Relich R, et al. 2006. Review of research on prosthetic devices for lower extremity amputation. *Critical Review of Biomedical Engineering* 34(5): 379-438.

<sup>64</sup> Gauthier-Gagnon C, Grise MC, Potvin D. 1999. Enabling factors related to prosthetic use by people with transtibial and transfemoral amputation. *Archives of Physical Medicine and Rehabilitation* 80(6): 706-713.

<sup>65</sup> Biddiss E, Chau T. 2007. Upper-limb prosthetics: critical factors in device abandonment. *American Journal of Physical Medicine and Rehabilitation* 86: 977-987.

<sup>66</sup> James MA, Bagley AM, Brasington K, et al. 2006. Impact of prostheses on function and quality of life for children with unilateral congenital below-the-elbow deficiency. *Journal of Bone and Joint Surgery* 88(11): 2356-2365.

<sup>67</sup> Trower TA. 2006. Changes in lower extremity prosthetic practice. *Physical Medicine and Rehabilitation Clinics of North America* 17: 23-30.

<sup>68</sup> MacKenzie EJ, Bosse MJ, Castillo RC, et al. 2004. Functional outcomes following trauma-related lower-extremity amputation. *Journal of Bone and Joint Surgery* 86A (8): 1636-1643.

Common safety concerns related to use of prosthetic devices include skin complications and falls, particularly during rehabilitation.<sup>69</sup>

## 2.5. Financial Impact

- 1. The extent to which the mandated health benefit may increase or decrease the cost of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

The prosthetics mandate is not expected to change the need for them. It may increase the rate of replacement. Without a cost cap or limit on the number used in specified time period, there may be somewhat higher utilization than there would be otherwise. The increase in demand as a result of the mandate for prosthetic devices is insufficient to stimulate new research and development of more technologically sophisticated devices. In our research, we learned the American military is promoting research on better prosthetics to help those veterans who have lost limbs in service of our nation. This will do far more to stimulate the technological advancement of prosthetic devices than an insurance mandate.

- 2. The extent to which the mandated health benefit may increase the appropriate or inappropriate use of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

The proposed benefit may increase appropriate use of prosthetic limbs for those covered by insurance plans with low dollar value limits or “once per lifetime” limits for prosthetic limbs. In particular, children covered by these plans may benefit from more appropriate treatment because, as a child grows, he or she requires more frequent changes in prostheses than adults to keep up with physical growth and allow proper fit and functioning. For the insured population of children and adults using a worn, ill-fitting, or damaged prosthetic device, appropriate use is expected to increase as a result of the mandated health benefit.

The Virginia analysis reports that opponents to the mandate there expressed concern that the mandate would increase the inappropriate use of expensive, technologically advanced prostheses (i.e., use of expensive technologically advanced prostheses by persons whose needs only require a less expensive, less technologically advanced prosthetic device.) This could be a valid concern as overutilization of other medical services is commonplace. An opposing argument might point out that the small percentage of the insured population who require and use a prosthetic device would limit opportunities for overutilization. The CCEA economic analysis illustrates higher income earners tend to demand the more high-end prosthesis, so there are also offsetting financial considerations.

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<sup>69</sup> Ustul H. 2009. Prosthetic rehabilitation issues in the diabetic and dysvascular amputee. *Physical Medicine and Rehabilitation Clinics of North America* 20(4): 689-703.

- 3. The extent to which the mandated health benefit may serve as an alternative for more expensive or less expensive treatment, service or equipment, supplies or drugs, as applicable.**

Persons who have undergone amputations require prosthetic devices when such persons have the desire and physical capability required to use them. They do not serve as an alternative for any other treatment, service or equipment, supplies or drugs. A properly fitted and maintained prosthetic device avoids the complications and associated treatment costs that commonly occur with an ill-fitting, worn, or damaged prosthesis, which include osteoporosis and chronic back pain.

- 4. The methods that will be implemented to manage the utilization and costs of the mandated health benefit.**

This study anticipates insurers and MCOs will utilize the same utilization management methods and cost controls used for other covered benefits. The proposed legislation does not prohibit insurers and MCOs from employing utilization management, prior authorization, preferred providers, or other utilization tools at their discretion.

- 5. The extent to which insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, may be reasonably expected to increase or decrease the insurance premiums and administrative expenses for policyholders.**

The actuarial study projects medical cost of the prosthetics mandate will be about 0.1 percent of the total cost of health care in year one. This amounts to about \$0.25 to \$0.45 per insured person per month. As an upper bound example, even if everyone with an amputation obtains a prosthetic device at an average cost of \$10,000, the cost would be 0.35 percent or less. In subsequent years, if everyone who undergoes an amputation during the year receives a device, then the cost will be about 0.03 percent per year—around \$0.10 PMPM. The expectation is that everyone who needs a prosthetic device will not obtain it in year one; thus it is likely that costs in year one will be less than 0.35 percent; later years could be more than 0.03 percent. Prosthetic devices last several years or longer, so repair and replacement will also add to the small cost of this mandate in future years.

The mandate does not limit the number of devices an individual may acquire in a specified time period, but the expectation is that this will not alter utilization. Insurers may seek to control cost by contracting with preferred suppliers.

Please see Appendix II: Ingenix Consulting Actuarial Report, pages 14-15 & 30 for further discussion.

- 6. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is more or less expensive than an existing treatment, service or equipment, supplies or drugs, as applicable, that is determined to be equally safe and effective by credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community.**

Not applicable. Prosthetic devices are required for persons who have undergone amputations when such persons have the desire and physical capability required to use them, and there are no alternatives to their use.

**7. The impact of insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, on the total cost of health care, including potential benefits or savings to insurers and employers resulting from prevention or early detection of disease or illness related to such coverage.**

Proper selection and timely maintenance and repair of prosthetic devices can help avoid skin and stump complications that require medical treatment. We are unable to estimate the potential savings the proposed mandate would provide or if increased initial costs for more technologically advanced prostheses would be offset by avoided downstream medical costs, i.e. the impact of the mandate on the total cost of health care.

The economic analysis CCEA conducted found the net societal value of the benefit in 2010 would be \$20,905,605 in net present value. Clearly some of this net societal value would accrue to employers, because an estimated 31 percent of users of prosthetic devices are actively in the labor force.<sup>70</sup>

**8. The impact of the mandated health care benefit on the cost of health care for small employers, as defined in section 38a-564 of the general statutes, and for employers other than small employers.**

The review found no published literature on the effect of mandated coverage of prosthetic devices at Medicare benefit levels on the cost of health care for small employers. Small employers may be more sensitive to premium increases than other employers, and the estimated cost of the mandate (\$.35 PMPM in 2010) suggests little difference in effects.

**9. The impact of the mandated health benefit on cost-shifting between private and public payers of health care coverage and on the overall cost of the health care delivery system in the state.**

This study does not anticipate mandated benefit for coverage of prosthetic devices to result in cost-shifting between private and public payers. The actuarial analysis estimated the mandate for prosthetic device coverage at Medicare levels would result in an increase of \$.35 PMPM in medical costs. If the estimated 600 commercially-insured amputees in Connecticut acquired a prosthetic device in 2010 at an average cost of \$8500, the total cost added to the health delivery system would be \$5.1 million.

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<sup>70</sup> U.S. Department of Education. 2005. Assistive Technology and Information Technology Use and Need by Persons with Disabilities in the United States, 2001. pp. 50-51.

# Part 3. Hearing Aids for Children Ages 13-18

Review and Evaluation of Public Act 09-188,

An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage, Sections 5 and 6,

Requirement that Issuers of Individual and Group Health Insurance Policies provide coverage for hearing aids for children 18 years of age or younger.

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### 3.1. Executive Summary

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage, sections 5 and 6, requiring that individual and group health insurers provide coverage for hearing aids for children 18 years of age or younger. The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy, with the assistance of the CT Center for Economic Analysis at the University of Connecticut.

The Committee requested the analysis be based on the following amendment to the bill:

Require that individual and group health insurance policies delivered, issued for delivery, renewed, amended or continued in Connecticut shall provide coverage for hearing aids for children eighteen years of age or younger.

Such hearing aids shall be considered durable medical equipment under the policy, and the policy may limit the hearing aid benefit to one thousand dollars within a twenty-four period.

Current coverage status for hearing aids for children ages 13-18: A survey of the major health insurers in Connecticut indicates that no companies currently cover hearing aids for children between the ages of 13 and 18. All provide coverage for hearing aids for children up to age 13 up to a maximum of \$1,000 in 24 months, which is the existing mandate. Two companies said they will begin offering coverage for hearing aids for all ages as of October 2010, up to \$5,000 per year. These two companies provide group insurance policies only. One other company indicated that it has filed with the Insurance Department and been approved to offer up to unlimited maximums and no age maximums for hearing aid coverage, but did not indicate that any of its policies currently in force include such benefits.

Level of burden caused by lack of mandate: The average cost of hearing aids is \$2,250 per hearing aid. For those who need hearing aids for both ears, the total average cost is \$4,500.

Premium impact of proposed mandate: This mandate would add approximately \$0.06 PMPM to premiums.

Impact on use of procedure: An estimated 1,650 insured CT children between the ages of 13 through 18 will acquire hearing aids in 2010.

Employer benefit: Hearing aids will enable children who need them to improve their educational levels, resulting in lower educational costs and an expanded and more productive work force in the future.

## 3.2. Background

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage (Sections 5 and 6, requiring issuers of group health insurance policies to provide coverage for hearing aids for children 18 years of age or younger). The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy.

The Committee requested the analysis be based on the following amendment to the bill:

Extend the existing mandated coverage for hearing aids for children to children eighteen years of age or younger (the existing mandate requires coverage of hearing aids for children 12 years of age or younger).

The existing hearing aid benefit limit of \$1,000 per twenty-four month period would be unchanged.

### *Hearing Loss in Children*

An estimated 6.4 percent of children in the U.S. have some level of hearing loss.<sup>71</sup> Hearing loss in children has several different causes: e.g., congenital abnormalities, exposure to various viruses, bacteria or toxins either intrauterine or at birth, premature birth, ear infections, trauma, noise-induced loss, perforation of the tympanic membrane, tumors and hereditary hearing impairment.<sup>72</sup> Hearing loss can be temporary or permanent. The severity of hearing loss ranges from mild to moderate to severe to profound. Early hearing loss can cause delays in the development of speech, language and cognitive development. Hearing loss at any age can result in diminished social and emotional well-being and diminished academic performance and potential earnings capacity.<sup>73,74</sup>

There are a variety of treatment options for hearing impairment in children, depending on the cause of the impairment.<sup>75</sup> Antibiotics or surgery are effective for some causes, such as otitis (ear infections) or tumors. Where an impairment is not amenable to surgery or pharmaceuticals, a variety of hearing aids and assistive listening devices are available. Hearing aid circuitry can be analog, digital or digitally programmable. Hearing aid styles include behind-the-ear, in-the-ear, completely-in-the-canal and bone-anchored implantable hearing aid systems (these attach to an anchor implanted in the bone of the skull and are used with patients who cannot benefit from conventional hearing aids). FM amplification devices, used often in educational settings, amplify the sound for the listener by effectively decreasing the distance between the listener and the speaker. They can be used alone or in addition to hearing aids. Cochlear implants are increasingly being used for people with profound hearing loss. *For the purposes of*

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<sup>71</sup> Mitchell, RE. 2006. How many deaf people are there in the United States? *Journal of Deaf Studies and Deaf Education* 11(1): 112-119.

<sup>72</sup> Sanford B, Weber P. *Etiology of hearing impairment in children*. UpToDate, [www.uptodate.com](http://www.uptodate.com). 2008. Accessed October 23, 2009.

<sup>73</sup> Sanford B, Weber P. *Treatment of hearing impairment in children*. UpToDate, [www.uptodate.com](http://www.uptodate.com). 2008. Accessed October 23, 2009.

<sup>74</sup> O'Neill G. 1999. *Profile: Hearing loss, a growing problem that affects quality of life*. National Academy on an Aging Society.

<sup>75</sup> Sanford B, 2008.

*this report, it is assumed that neither FM amplification devices nor cochlear implants are included within the definition of “hearing aid” as used in the proposed mandate.*

Hearing aids are fitted by an audiologist, upon a prescription by a physician.<sup>76</sup> The audiologist evaluates each patient to determine the best type of hearing aid, based on the age of the child and the level and type of hearing loss. Hearing aids must be fitted to the child’s ear, and need to be replaced as the child grows.

A significant number of children (as well as adults) who are recommended for hearing aids by their physicians never fill the prescription, or do not wear them after they are fitted. A variety of reasons have been stated, including financial concerns, the stigma of being different, and physician, parent or child perception that the hearing loss is “not that bad”.<sup>77</sup>

#### *Current Connecticut Law*

In 2002, the Connecticut General Assembly mandated health insurance coverage in both group and individual health insurance policies for hearing aids for children under age 13, with a minimum benefit of \$1,000 per enrollee every two years. It directed that hearing aids be treated as ‘durable medical equipment’ under the policies. (CGSA sec.38a-490b and 38a-516b).

#### *Proposed Mandate*

The proposed amendment to these sections would raise the maximum age in these sections to include children under 19 years of age. Benefit minimums would remain the same, as would the status of hearing aids as durable medical equipment. (P.A. 09-188 sec. 5 and 6, vetoed 7/2/09)

### **3.3. Methodology**

In addition to the methodologies described in the General Overview section, CPHHP staff and the medical librarians conducted literature searches using the following resources:

- PubMed
- Scopus
- Web
- Library Catalog

The search terms included: hearing aids, hearing loss, noise induced hearing loss, conductive hearing loss, syndrome hearing loss, deafness, epidemiology, rehabilitation, health service needs, insurance coverage trends/statistics, hearing disorders therapy, limited to adolescent (13-18), English.

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<sup>76</sup> Sanford B, 2008.

<sup>77</sup> Kochkin S, Luxford W, Northern J, et al. 2007. Are 1 million dependents with hearing loss in America being left behind? *Hearing Review* 14(10): 10.

## 3.4. Social Impact

1. **The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is utilized by a significant portion of the population.**

As many as 6.4 percent of children under the age of 19 have some level of hearing loss. Not all children with hearing loss need or use hearing aids. For some, the hearing loss is mild or temporary, due to conditions that can be reversed by surgery or antibiotics. For others, the hearing loss is profound and they are unable to hear even with hearing aids. According to the Survey of Income and Program Participation (SIPP), nationally approximately 300,000 children age 6-17 have difficulty hearing and use hearing aids.<sup>78</sup> This is roughly 0.6 percent of children age 6-17. For purposes of this analysis, we estimate that 1.75 percent of children age 13-18 need hearing aids.<sup>79</sup>

2. **The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is available to the population, including, but not limited to, coverage under Medicare, or through public programs administered by charities, public schools, the Department of Public Health, municipal health departments or health districts or the Department of Social Services.**

Medicare does not cover hearing aids.

Medicaid covers hearing aids for both ears for all ages.<sup>80</sup> For children under 18 the child must have an examination by an otolaryngologist and an examination by an audiologist, one of which has to take place within the 90 days prior to the receipt of the hearing aid.<sup>81</sup> For adults, including 18 year olds, a medical evaluation by a doctor is required within the prior 6 months, to ensure that all medically treatable conditions that may affect hearing have been identified and treated first. The initial hearing aid does not require prior authorization, but prior authorization is required for replacement hearing aids. Hearing aids may be replaced every three years, unless they have been lost, stolen or damaged beyond repair. There is no co-pay or coinsurance for Medicaid clients as long as the hearing aid is obtained from an enrolled provider.<sup>82</sup>

A number of service organizations, such as Lions Club and Sertoma, provide assistance to families with low income who need hearing aids. Easter Seals and the Alexander Graham Bell Association also provide assistance in obtaining hearing aids.

In addition, an employee's flexible spending account can be used for the purchase of hearing aids, using pre-tax dollars, if the employer offers such accounts.

3. **The extent to which insurance coverage is already available for the treatment, service or equipment, supplies or drugs, as applicable.**

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<sup>78</sup> Survey of Income and Program Participation (SIPP), Panel 2001, Wave 5 public-use file.

<sup>79</sup> See Ingenix report, Appendix II, p. 15

<sup>80</sup> Correspondence from Ginny Mahoney, DSS Medical Policy Consultant, 10/26/2009

<sup>81</sup> DSS Connecticut interchange MMIS: Provider Manual, Chapter 7 (MEDS), Sec. 17-134d-45(c)(2)

<sup>82</sup> DSS Connecticut interchange MMIS: Provider Manual, Chapter 7 (MEDS), Sec. 17-134d-45(f)(2)

In our survey responses from the 7 insurance companies/MCOs domiciled in Connecticut, no companies reported that they currently provide coverage of hearing aids to children age 13-19. All provide hearing aids to children under age 13, in accordance with the existing mandate. However, 2 companies reported that effective 10/3/09 all their policies will provide hearing aid coverage as a standard benefit for all ages, with 24-month maximums that exceed the proposed mandate. These two companies will not include hearing aids in durable medical equipment (DME) but will apply the same level of cost sharing as DME and will have separate but consistent limits, not to exceed \$5,000 per year.

**4. If the coverage is not generally available, the extent to which such lack of coverage results in persons being unable to obtain necessary health care treatment.**

In one study, approximately 30 percent of families reported financial need as a barrier to obtaining hearing aids for their children.<sup>83</sup>

**5. If the coverage is not generally available, the extent to which such a lack of coverage results in unreasonable financial hardships on those persons needing treatment.**

The price of hearing aids varies considerably depending on the style and technology employed. Behind-the-ear (BTE) hearing aids are most frequently recommended for growing youth because the ear molds can be recast to accommodate a growth without having to replace the entire hearing aid. This report assumes an average price of \$2250 per hearing aid. For individuals requiring 2 hearing aids, their costs would be \$4500 on average. Hearing aids typically last between 3 and 5 years.<sup>84</sup>

This report defines a high health financial burden family as having 10 percent or more of their annual income devoted to health care expenses of all types, including coinsurance, co-pays and other out-of-pocket medical expenses. Low to middle income individual policyholders, and low income group insureds, bear high health financial burdens without regard to the availability of coverage for hearing aids. For these groups, bearing the full cost of hearing aids for their children ages 12-18 can pose a significant financial hardship and be a barrier to obtaining them. The availability of the coverage provided by the proposed mandate could lower their financial burden by as much as one and four percent.<sup>85</sup>

**6. The level of public demand and the level of demand from providers for the treatment, service or equipment, supplies or drugs, as applicable.**

Children with unaddressed hearing loss have more problems with social skills, language development, emotional health, peer and family relationships and self-esteem.<sup>86</sup> The availability of hearing aids can improve their educational outcomes and future earnings capacity.

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<sup>83</sup> Kochkin S, 2007.

<sup>84</sup> Kirkwood D. 2009. Despite challenging conditions, practitioners in survey remain up beat. *The Hearing Journal* 62(4): 28-29.

<sup>85</sup> See CCEA report, Appendix III, p. 11.

<sup>86</sup> Kochkin S, et al. 2007.

**7. The level of public demand and the level of demand from providers for insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable.**

The demand for this proposed mandate comes primarily from the families of children between the ages of 13 and 18 who need hearing aids. We estimate that this is approximately 1.75 percent of children in this age group.

**8. The likelihood of achieving the objectives of meeting a consumer need as evidenced by the experience of other states.**

15 states, including Connecticut, mandate some level of insurance coverage for hearing aids for children.

**Table 3.1: States with Mandated Coverage of Hearing Aids for Children**

State	Effective Year	Coverage
Colorado Co.R.S. sec 10-16-104	2009	Hearing aids for children under 18; replace at least every 5 years or when necessary
Connecticut CGSA 38a-490b and CGSA 38a-516b	2002	\$1000 maximum every 2 years for children under 13
Delaware House Bill 355 of 2008*	2008	\$1000 maximum every 3 years for children under 24
Kentucky KRS 304.17A-132	2002	\$1400 per ear every 3 years for children under 18
Louisiana La.R.A. 22:1038	2003	\$1400 per ear every 3 years for children under 18
Maine 24-A MRSA sec 33-2762	2008 for birth-5 2009 for 6-13 2010 for 14-18	\$1400 per ear every 3 years
Maryland Maryland Code sec. 15-838		\$1400 per ear every 3 years
Minnesota Minn.Stat. 62Q.675	2007	One hearing aid per ear every 3 years for children under 18 with hearing loss due to congenital malformation of the ear
Missouri Se, 376,1220 R.S.Mo.	1999	Infant hearing screening and initial amplification including hearing aids
New Jersey P.L. 2008, Ch. 126	2009	\$1000 per ear every 24 months for children under 16
New Mexico S.B. 529 of 2007	2007	\$2200 per ear every 3 years for children under 18, or under 21 if still in high school
Oklahoma 36 Okl.St. sec 6060.7	1999	Hearing aids for children up to 18 every 4 years, no dollar limit
Oregon House Bill 2589 of 2009*	2009	\$4000 every 48 months for children under 18, or over 18 if still a dependent and enrolled at an institution of higher education
Rhode Island R.I. Gen. Laws sec 27-18-60		\$1500 per ear every 3 years for children under 19, \$700 per ear for those 19 and over
Wisconsin SB 27 of 2009*	2009	One hearing aid per ear every 3 years, no dollar limit

Source: American Speech-Language-Hearing Association, [http://www.asha.org/advocacy/state/issues/ha\\_reimbursement.htm](http://www.asha.org/advocacy/state/issues/ha_reimbursement.htm)

*\* Unable to determine from state legislative websites whether these bills have in fact passed and been signed by the Governors of the respective states.*

**9. The relevant findings of state agencies or other appropriate public organizations relating to the social impact of the mandated health benefit.**

For the estimated 30 percent who report that financial need prevents them from obtaining hearing aids for their children who need them, this mandate will make a difference. However, financial need is not the only reason that parents and children give for not using hearing aids. The study noted in footnote 1 found that 70 percent of those who might have profited from hearing aids did not use them because of the perceived stigma of wearing them, minimization by parents or children of the level of hearing loss, or professional recommendations that hearing aids were not needed or would not help. It is difficult to determine what role lack of insurance coverage may have played in these perceptions or recommendations.

**10. The alternatives to meeting the identified need, including, but not limited to, other treatments, methods or procedures.**

Children with mild hearing loss can benefit from FM amplification devices, which effectively decrease the distance between the speaker and the child by sending the sound to an FM receptor worn around the child's neck. This is used in many educational settings to help a child hear classroom instruction. It can also be used in addition to hearing aids, which improve hearing by only about one-half of the loss.<sup>87</sup>

**11. Whether the benefit is a medical or broader social need and whether it is consistent with the role of health insurance and the concept of managed care.**

Hearing aids compensate for an impaired organ (the ear), and therefore meet a medical need of the wearer.

**12. The potential social implications of the coverage with respect to the direct or specific creation of a comparable mandated benefit for similar diseases, illnesses, or conditions.**

The potential social implications of this mandate lie primarily in the potential demand to extend the benefit to additional groups of beneficiaries, e.g., adults from 19-21 or 19-26, all adults, etc.

**13. The impact of the benefit on the availability of other benefits currently offered.**

In an effort to control costs, it is possible that insurers or employers may increase co-pays or coinsurance or place limits on other services to compensate for the cost of this mandate.<sup>88</sup>

**14. The impact of the benefit as it relates to employers shifting to self-insured plans and the extent to which the benefit is currently being offered by employers with self-insured plans.**

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<sup>87</sup> Sanford B, 2008.

<sup>88</sup> See Ingenix report, Appendix II, p. 20.

It is not anticipated that employers will shift to self-insured plans as the result of this single proposed mandate. However, employers that look at the cumulative financial effects of mandated benefits in total may look to opt in to self-insured plans.

**15. The impact of making the benefit applicable to the state employee health insurance or health benefits plan.**

The impact of this mandate will be the same for the state employee health plans as for other insured health plans, provided the state plans elect to comply with the mandate even though they are moving to self-funded status.

**16. The extent to which credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community determines the treatment, service or equipment, supplies or drugs, as applicable, to be safe and effective.**

Hearing aids are generally considered safe and efficacious for those who can benefit from them.

### **3.5. Financial Impact**

**1. The extent to which the mandated health benefit may increase or decrease the cost of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

The extension of the hearing aid mandate to children 13 through 18 is not expected to materially increase the demand and price for assisted hearing devices.<sup>89</sup>

**2. The extent to which the mandated health benefit may increase the appropriate or inappropriate use of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

Hearing loss is not elective; induced utilization should not be significant as a result of this mandate, since it pays a fixed amount regardless of the total cost. Since most childhood hearing loss is diagnosed before age 13, we anticipate few additional children needing a first-time hearing aid between 13 and 18, beyond those that already had them prior to 13. Plans with low cost-sharing may see a more frequent rate of replacement of existing hearing aids. The mandate may encourage more upgrades from analog to digital aids for those in the 13 through 18 year old age group. An estimated 1,650 insured CT children between the ages of 13 through 18 will acquire hearing aids in 2010.<sup>90</sup>

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<sup>89</sup> See Appendix II, Ingenix report, p. 23

<sup>90</sup> See Appendix II, Ingenix report, p. 25.

Since hearing aids cost from \$1000 to \$4000 per ear, the proposed mandate will act as a subsidy, rather than a comprehensive benefit. The remaining cost acts to restrain any inappropriate use of the equipment.

**3. The extent to which the mandated health benefit may serve as an alternative for more expensive or less expensive treatment, service or equipment, supplies or drugs, as applicable.**

FM amplification is a less expensive method for improving a child's hearing that is often used in classroom settings. However, some children still need hearing aids in addition to the FM amplification in order to hear classroom instruction adequately. FM amplification is not a practical alternative outside the classroom in the larger community, since it requires the speaker to use a microphone tuned to the recipient's amplifier. FM amplification alone is not an alternative for children who need hearing aids.

Cochlear implants are a more expensive treatment for profound hearing loss or deafness. They are not appropriate for children with moderate-to-severe hearing loss.

**4. The methods that will be implemented to manage the utilization and costs of the mandated health benefit.**

The mandate for hearing aids for children ages 13 through 18 may cause payers (insurers and HMOs) to negotiate with hearing aid providers for lower prices.

**5. The extent to which insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, may be reasonably expected to increase or decrease the insurance premiums and administrative expenses for policyholders.**

It is estimated that expansion of the hearing aid mandated benefit to children between the ages of 13 through 18 will add approximately \$0.06 PMPM to insurance premiums.<sup>91</sup> This assumes that less than 100 percent of eligible children will use the benefit, some because the mandated benefit does not cover the entire cost, others because of the stigma of wearing a hearing aid and others because their hearing loss is viewed as mild.<sup>92</sup>

**6. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is more or less expensive than an existing treatment, service or equipment, supplies or drugs, as applicable, that is determined to be equally safe and effective by credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community.**

FM amplification is a less expensive method for improving a child's hearing that is often used in classroom settings. However, some children still need hearing aids in addition to the FM amplification in order to hear classroom instruction adequately. FM amplification is not a practical

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<sup>91</sup> See Appendix II, Ingenix report, p. 16.

<sup>92</sup> Kochkin S, et al. 2007.

alternative outside the classroom in the larger community, since it requires the speaker to use a microphone tuned to the recipient's amplifier. FM amplification alone is not an alternative for children who need hearing aids.

Cochlear implants are a more expensive treatment for profound hearing loss or deafness. They are not appropriate for children with moderate-to-severe hearing loss.

**7. The impact of insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, on the total cost of health care, including potential benefits or savings to insurers and employers resulting from prevention or early detection of disease or illness related to such coverage.**

After the first year, the proposed mandate would add approximately \$850,000 to individual and group health insurance expenditures annually. For those children in the targeted age group who need them, hearing aids will help them reach optimum performance in school and will increase the likelihood that they will pursue higher education. Hearing aids may lower educational costs for special accommodations for these children. Higher educational attainment also translates into higher earning capacity and an expanded, more productive work force for employers. According to a CCEA analysis, even if only 5 percent of the hearing impaired assisted by this program complete university educations as a result of this mandate, the net present value of their lifetime earnings could generate annual productivity gains for employers of \$3.8 million.

**8. The impact of the mandated health care benefit on the cost of health care for small employers, as defined in section 38a-564 of the general statutes, and for employers other than small employers.**

This mandate is expected to have roughly the same effect on small groups as large. That is, the difference in the effect on small vs. large groups is not expected to be large enough to calculate<sup>93</sup>

**9. The impact of the mandated health benefit on cost-shifting between private and public payers of health care coverage and on the overall cost of the health care delivery system in the state.**

This mandate is not expected to materially increase the demand or price for assisted hearing devices. Even with the expanded mandate, families will still bear 66.7 to 75 percent of the cost of purchasing hearing aids for their teenage children. We estimate that 1,650 insured children in CT between the ages of 13 and 18 will purchase hearing aids in 2010,<sup>94</sup> adding approximately \$850,000 to the total medical cost. This equates to \$0.06 PMPM.<sup>95</sup>

For those able to take advantage of it, this mandate may result in better educational outcomes, social development and quality of life, and increased productivity.<sup>96</sup> The additional earnings from just 5

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<sup>93</sup> See Appendix II, Ingenix report, p. 19.

<sup>94</sup> See Appendix II, Ingenix report, p. 25.

<sup>95</sup> See Appendix II, Ingenix report, p. 16.

<sup>96</sup> See Appendix II, Ingenix report, p. 22

percent of the recipients could increase the NPV of their earned income by \$9.3 million over their lifetime, some of which would accrue to the State through normal tax channels.

# Part 4. Wigs for Alopecia Areata

Review and Evaluation of Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage, Sections 7 & 8,

Extension of Health Insurance Coverage for Wigs Prescribed by a Licensed Physician or a Licensed Advance Practice Registered Nurse For a Patient Who Suffers Hair Loss Due to a Diagnosed Medical Condition of Alopecia Areata Other Than as a Result of Androgenetic Alopecia

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## 4.1. Executive Summary

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage (Sections 7 & 8, health insurance coverage for wigs if prescribed by a licensed physician or licensed advance practice registered nurse for a patient who suffers hair loss due to a diagnosed medical condition of alopecia areata other than as a result of androgenetic alopecia). The review was conducted following the requirements stipulated under Public Act 09-179. The Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy collaborated on this review.

The Committee requested the analysis be based on the following amendment to the bill:

Require that individual and group health insurance policies delivered, issued for delivery, renewed, amended or continued in Connecticut provide coverage under such policies for a wig if prescribed by a licensed physician or licensed advance practice registered nurse for a patient who suffers hair loss due to a diagnosed medical condition of alopecia areata other than as a result of androgenetic alopecia.

Ingenix Consulting undertook an actuarial analysis using insurance claims data; it found prevalence of alopecia areata among the insured population was 0.072 percent. Using this prevalence rate, an estimated 850 commercially-insured individuals with alopecia areata in Connecticut would be eligible to acquire a wig that costs \$350 or more in 2010.

Because alopecia areata is rare and the resulting hair loss is often temporary, the actuarial analysis anticipates this mandate would add only a penny or two to the per person per month cost of medical care. This represents an incremental addition of approximately 0.01 percent to overall medical cost, with a cost range of \$0.00 to \$0.04 per insured person per month. This mandate also applies to limited benefit plans, which are lower in cost and cover fewer medical benefits than the other plans. This does not change the one or two cent per member per month cost for limited benefit plans. It will increase the overall percentage of cost, however, for limited benefit plans only.

In a survey of seven insurers and managed care organizations domiciled in Connecticut and covering 95 percent of the insured population in Connecticut (2.5 million residents), none reported coverage of wigs for persons diagnosed with alopecia areata in their group, individual, or administrative services only plans. Some insurers and managed care organizations cover some pharmacological treatments for alopecia areata.

## 4.2. Background

### *Legislation*

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department (CID) to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of

Health Insurance Coverage (Sections 7 & 8, health insurance coverage for wigs if prescribed by a licensed physician or licensed advance practice registered nurse for a patient who suffers hair loss due to a diagnosed medical condition of alopecia areata other than as a result of androgenetic alopecia). The review was conducted following the requirements stipulated under Public Act 09-179. The University of Connecticut Center for Public Health and Health Policy (CPHHP) and the Connecticut Insurance Department collaborated on this review.

The Committee requested the analysis be based on the following amendment to the bill:

Require that individual and group health insurance policies delivered, issued for delivery, renewed, amended or continued in Connecticut provide coverage under such policies for a wig if prescribed by a licensed physician or licensed advance practice registered nurse for a patient who suffers hair loss due to a diagnosed medical condition of alopecia areata other than as a result of androgenetic alopecia.

### *Alopecia Areata*

Alopecia areata is a disorder in which there is loss of hair, resulting in patches of baldness but with no scarring of the affected area. It can affect the entire scalp (alopecia totalis) or cause loss of all body hair (alopecia universalis). It affects 0.15 percent of the population.<sup>97</sup> Men and women are equally affected and it occurs in children as well as adults, but at higher rates in children and teens.<sup>98</sup> Spontaneous recovery usually occurs within six to twelve months; however, prognosis is not as good if the condition persists longer than one year, worsens, or begins before puberty.<sup>99</sup> The recurrence rate is 30 percent, and usually affects the initial area of involvement.<sup>100</sup> Beyond hair loss, there are no other known biological symptoms or effects linked to alopecia areata (e.g. headaches, musculoskeletal problems, endocrine disorders, etc.); however, hair loss can often have a severe social and emotional impact, particularly among women and children. The presence of alopecia areata specifically has been associated with psychological problems including stress. The co-morbidity of psychiatric disorders, mainly generalized anxiety disorder, depression, and phobic states, is high.<sup>101</sup>

Alopecia areata is probably secondary to an autoimmune reaction involving antibody, T-cell, and cytokine-mediated losses.<sup>102</sup> There is no cure and no universally proven therapy to induce hair re-growth and sustain remission.<sup>103</sup> Treatments for alopecia areata include immunomodulators such as topical and oral corticosteroids and corticosteroid injections, and biologic agents such as minoxidyl. Wigs and hair prostheses are the only available response for persons with severe disease that is unresponsive to available medical treatments.<sup>104</sup> Hair transplants are not used as donor sites may be involved and in most cases

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<sup>97</sup> Delamere FM, Sladen MJ, Dobbins HM, et al. 2008. Interventions for alopecia areata. The Cochrane Database of Systematic Reviews 2008, Issue 2. Art. No.: CD004413. DOI: 10.1002/14651858.CD004413.pub.2.

<sup>98</sup> Shapiro J. 1996. Alopecia areata: clinical features and treatment options in 1996. Presented at the 1996 International NAAF Conference. Seattle, WA.

<sup>99</sup> Springer K, Brown M, Stuhlberg DL. 2003. Common hair loss disorders. American Family Physician 68(1): 93-102.

<sup>100</sup> Goodheart HP. 1999. Hair and scalp disorders. Part 2: Alopecia areata. Womens Health and Primary Care 2: 283-7.

<sup>101</sup> Garcia-Hernandez MA, Ruiz-Doblado S, Rodriguez-Pichardo A, et al. 1999. Alopecia areata stress and psychiatric disorders: a review. Journal of Dermatology 6 (10): 624-632.

<sup>102</sup> Madani S, Shapiro J. 2000. Alopecia areata update. Journal of the American Academy of Dermatologists 42: 549-66.

<sup>103</sup> Sinclair RD. 1999. Alopecia areata. In: Sinclair R, Banfield C, Dawber R, eds., Handbook of Diseases of the Hair and Scalp. London: Blackwell Science. 75-84.

<sup>104</sup> Springer et al. 2003.

hair returns making a surgical procedure inappropriate.<sup>105</sup> Some of the skin treatments can have unpleasant side effects, such as itching and hair growth on unintended areas of skin away from where the treatment was applied. Oral steroids may cause adverse side effects such as elevated pressure in the eyes, increased blood pressure, weight gain, osteoporosis, skin problems, suppressed adrenal gland hormone production, and psychological effects.<sup>106</sup> There is a lack of good randomized-controlled trial evidence that any treatments provide long-term benefit to patients with alopecia areata.<sup>107</sup> Wigs and hair prostheses lack the biological side effects of pharmacological treatments and work well for persons with alopecia totalis or for persons with significant hair loss.

In a survey of seven insurers and managed care organizations (MCOs) domiciled in Connecticut that cover 95 percent of the insured population in Connecticut (2.5 million residents), none included coverage of wigs for persons diagnosed with alopecia areata in their group, individual, or administrative services only plans. Some insurers/MCOs cover some pharmacological treatments for alopecia areata.

### 4.3. Methodology

CPHHP staff consulted with medical librarians at the Lyman Maynard Stowe Library at the UConn Health Center (UCHC). Medical librarians conducted literature searches under search terms including alopecia areata, hair loss, wigs, hair prosthesis, and cranial hair prosthesis.

#### Resources Searched

1. PubMed
2. Scopus
3. Lexis Nexis Academic
4. UptoDate
5. E-Medicine
6. PsycInfo
7. MarketResearch.com
8. Web – Google, Scirus
9. Book Collection from the UCHC Library

CPHHP staff conducted independent literature searches using the Cochrane Review, Pubmed, Google, and Google Scholar, using the following terms: alopecia areata, alopecia totalis, alopecia universalis, alopecia areata + wigs, alopecia areata + treatment, alopecia areata + statistics, alopecia areata + insurance. Where available, this study cites articles published in peer-reviewed journals to support the analysis. The study also cites other sources of information in the absence of peer-reviewed journal articles. Content from such sources may or may not be based on scientific evidence.

CPHHP staff consulted with clinical faculty and staff from the University of Connecticut School of Medicine on medical standards of care, current and traditional practices, and evidence-based medicine related to the proposed benefit. Staff gathered additional information through telephone and e-mail

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<sup>105</sup> Personal Communication. Jane M. Grant-Kels, MD. November 20, 2009.

<sup>106</sup> Mayo Clinic Staff. 2008. Prednisone and other corticosteroids: Balance the risks and benefits. Available at:

<http://www.mayoclinic.com/health/steroids/HQ01431>. Accessed November 10, 2009.

<sup>107</sup> Delamere et al. 2008.

inquiries to appropriate state, federal, municipal, and non-profit entities, and from internet sources such as the State of Connecticut website, Medicare website, and other states' websites, and non-profit and community-based organizations.

CPHHP, with the assistance of the CID and input from Ingenix Consulting and the UConn Connecticut Center for Economic Analysis (CCEA) developed and administered a survey of insurance companies and MCOs domiciled in Connecticut. Seven insurers and MCOs completed the survey.

CPHHP and the CID contracted with Ingenix Consulting to provide actuarial analysis of the proposed mandate; CPHHP engaged CCEA to provide economic analysis of the proposed mandate.

## 4.4. Social Impact

### 1. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is utilized by a significant portion of the population.

According to the National Alopecia Areata Foundation, alopecia areata affects two percent of the population, or over five million people in the United States.<sup>108</sup> One retrospective population-based descriptive study in Minnesota estimated lifetime risk of alopecia areata at 1.7 percent.<sup>109</sup> A study in the Cochrane Review estimated that it affects 0.15 percent of the population at any one time.<sup>110</sup> Using the Cochrane Review prevalence estimate and the current estimate of the Connecticut population, (3,501,252 as of July 1, 2008)<sup>111</sup>, there would be 5252 Connecticut residents currently with alopecia areata. Using the Cochrane Review estimate and the estimated percentage of Connecticut residents covered by group and individual insurance policies, the mandate would potentially affect 1863 persons.

Ingenix Consulting provided an actuarial analysis based on insurance claims data; it found prevalence of alopecia areata among the insured population roughly half the prevalence found in the Cochrane Review (0.072 percent vs. 0.15 percent). Using the prevalence rate from the actuarial study produces an estimate of 850 commercially-insured individuals with alopecia areata in Connecticut who will acquire a wig costing \$350 or more in 2010. (See Appendix B: Ingenix Consulting Actuarial Report, pages 24 & 28)

The economic analysis CCEA conducted estimated the number of persons with alopecia areata by age cohort, which Table 4.1 presents. Because 40 percent of patients recover within the first six months, the expectation is that new demand for wigs would be somewhat less than those newly diagnosed; the result is that new demand for wigs to redress adverse impacts of alopecia areata would range from 416 to 693.

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<sup>108</sup> National Alopecia Areata Foundation Website. Available at: <http://www.naaf.org>. Accessed November 16, 2009.

<sup>109</sup> Safavi KH, Muller SA, Suman VJ, et al. 1995. Incidence of alopecia areata in Olmsted County, Minnesota, 1975 through 1989. *Mayo Clinic Proceedings* 70(7): 628-33.

<sup>110</sup> Delamere et al. 2008.

<sup>111</sup> US Census Bureau. National Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2008. Available at: <http://www.census.gov/popest/states/NST-ann-est.html>. Accessed November 10, 2009.

**Table 4.1: Patients Presenting with Alopecia Areata By Age Cohort Annually in Connecticut**

Age Cohort	Percent of Presenting Patients	CT Population Estimate	Net Number Newly Impacted in Age Cohort for Six-Months or Longer Annually	Net Numbers Newly Impacted for a day or more
0<10	30	435,444	155.7	259.5
10<20	30	490,304	138.3	230.5
20<30	10	528,490	40.3	67.1
30<40	10	439,012	34.5	57.4
40<50	12	416,145	34.4	57.3
50+	8	1,185,456	12.4	20.6
Total	100	3,494,851	416	693

The variation in the above estimates show the wide variability in severity of hair loss, length of time before spontaneous recovery, length of time before a recurrence, and effectiveness of medical treatments for hair loss, revealing the complexity of estimating precisely the number of people in Connecticut who might utilize health insurance coverage of \$350 for a wig for alopecia areata.

For those individuals with long-term and significant hair loss that does not respond to pharmacological treatments, a wig or hair prosthesis may be the preferred treatment method. A wig may also be worn during pharmacological treatment that is effective, because re-growth of hair can take several months.

2. **The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is available to the population, including, but not limited to, coverage under Medicare, or through public programs administered by charities, public schools, the Department of Public Health, municipal health departments or health districts or the Department of Social Services.**

### *Medicare*

Wigs are not covered under Medicare for persons suffering from alopecia areata.<sup>112,113</sup>

### Public Programs Administered By Charities

A small number of organizations offer financial assistance for hairpieces for people with alopecia areata who have limited financial resources. However, the reach and impact of these organizations is limited. For example, the National Alopecia Areata Foundation's Ascot Fund helps adults and children with alopecia areata purchase a hairpiece. Over one hundred individuals have benefited from the fund since the start of the program in January 2004. The maximum amount awarded is \$500.<sup>114</sup>

<sup>112</sup> National Alopecia Areata Foundation Website. Available at: <http://www.naaf.org>. Accessed November 16, 2009.

<sup>113</sup> Oxford Health Plans' Medical & Administrative Policies for Wigs.

<sup>114</sup> The National Alopecia Areata Foundation. 2009. Ascot Fund. Available at: [http://www.naaf.org/site/PageServer?pagename=support\\_resources\\_ascot](http://www.naaf.org/site/PageServer?pagename=support_resources_ascot). Accessed November 10, 2009.

### *Public Programs Administered By Public Schools*

The study found no information on availability of wigs for persons with alopecia areata through public schools.

### *The Department of Public Health (DPH)*

The study found no information on availability of wigs for persons with alopecia areata through the Connecticut Department of Public Health. There is no information about alopecia areata, alopecia totalis, or alopecia universalis on the Department of Public Health website.

### *Municipal Health Departments*

The study found no information on availability of wigs for persons with alopecia areata through local and municipal health departments.

### *The Department of Social Services (DSS)*

Medicaid: Connecticut Medicaid criteria require that a wig be medically necessary and be prescribed by a physician. The Medicaid client must be eligible and provide the prescription for the item to an enrolled Medicaid supplier. The Medicaid fee schedule lists wigs (procedure code A9282) at \$250.00.<sup>115</sup>

A search of the DSS website found no information related to wigs for persons with alopecia areata. [N.B. federal legislation: On February 24, 2009, Rep. Anna Eshoo (D-CA) introduced the Alopecia Areata Medicaid Improvement and Parity Act<sup>116</sup>, intended to require states to provide hair prostheses under their respective Medicaid programs for Medicaid patients who have been diagnosed with alopecia areata universalis or alopecia areata totalis. This expansion would have covered the approximately 5,000 Medicaid patients nationwide who have been diagnosed with alopecia areata universalis or alopecia areata totalis.<sup>117</sup>

The bill also provided coverage for individuals whose “attending physician certifies in writing the medical necessity of that proposed course of rehabilitative treatment.” According to the bill, twelve states already provide Medicaid coverage for hair prostheses for alopecia areata sufferers, because the prostheses are considered medically necessary when prescribed by a doctor. Connecticut appears to be one of these states.

The bill stalled in the House Committee on Energy and Commerce.

### **3. The extent to which insurance coverage is already available for the treatment, service or equipment, supplies or drugs, as applicable.**

A survey of seven insurance companies/MCOs domiciled in Connecticut that cover 95 percent of the insured population in Connecticut (2.5 million residents) found that none provided a policy that covered wigs for persons with alopecia areata.

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<sup>115</sup> Personal communication with G. Mahoney, DSS Policy Consultant. November 11, 2009.

<sup>116</sup> H.R. 1142 IH (2009)

<sup>117</sup> Id.

**4. If the coverage is not generally available, the extent to which such lack of coverage results in persons being unable to obtain necessary health care treatment.**

Whether a wig per se is a “necessary health care treatment” may be open to debate. For many people with alopecia areata, wigs may fall into an area of services that help offset or avoid other types of health issues and corresponding health care costs. Lack of coverage for wigs may lead to increased utilization of health resources in other areas and decreased quality of life and productivity. For example, in many people, alopecia areata influences self-image and self-esteem and negatively affects quality of life.<sup>118</sup> Hair loss can contribute to feelings of anxiety and depression.<sup>119</sup> A study of fourteen patients with alopecia areata interviewed using Diagnostic and Statistical Manual of Mental Disorders-Fourth edition (DSM-IV) criteria and mental health diagnostic tests found the rate of at least one psychiatric disorder was 78 percent. The rate of major depressive disorder was 50 percent; the most common anxiety disorder was obsessive-compulsive disorder (OCD) (35.7 percent).<sup>120</sup> Mental health disorders and psychological diseases can result in significant health care costs when treated. If undiagnosed and/or untreated, such disorders can negatively impact individuals and their families in many ways, including socially and economically.

**5. If the coverage is not generally available, the extent to which such a lack of coverage results in unreasonable financial hardships on those persons needing treatment.**

As noted above, coverage of wigs for treatment of alopecia areata is not included in commercial insurance plans offered in Connecticut. The cost of a wig may present unreasonable financial hardship for patients and their families, depending on the financial resources available to the individual. A wig may be available through a non-profit organization for people with documented financial need. A person covered by Medicaid may be eligible for a \$250 wig benefit if it is medically necessary and prescribed by a physician. Many higher quality wigs, full head wigs, and custom hairpieces designed to fit the contours of an individual’s scalp cost more than \$350, some in excess of \$5000,<sup>121</sup> so the proposed mandate of \$350 would serve as a subsidy.

Low and middle income insureds with individual policies face a high burden of health care expenses (>10 percent of family income) currently and would continue to face a high burden of health care expenses after the mandate. Please see Appendix C: UConn Center for Economic Analysis Report, page 12-13 for further discussion of the financial burden of wigs for alopecia areata.

**6. The level of public demand and the level of demand from providers for the treatment, service or equipment, supplies or drugs, as applicable.**

The study found no published literature on the level of public demand for wigs for persons with alopecia areata. There would seem to be a high level of public demand and widespread acceptance of providing wigs for persons who experience hair loss for other medical reasons, e.g., as a result of

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<sup>118</sup> Elkin TD, Hilker KA, Drabman RS. 2006. Anxiety and psychosocial concerns in alopecia areata: a case study. *Clinical Case Studies* 5: 103-111.

<sup>119</sup> Hunt N, McHale S. 2005. The psychological impact of alopecia. *British Medical Journal* 331(7522): 951-953.

<sup>120</sup> Ghanizadeh A. 2008. Co morbidity of psychological disorders in children and adolescents with alopecia and areata in a child and adolescent psychiatry clinical sample. *International Journal of Dermatology* 47(11): 1118-20.

<sup>121</sup> Personal Communication. National Alopecia Areata Foundation.

chemotherapy, and numerous states require insurance coverage for this service, including Connecticut. Additionally, the psychological and social impact of alopecia areata, particularly for young people and women, likely influences public demand for wigs for persons with alopecia areata.

The study found no published literature on the level of demand from providers for wigs for persons with alopecia areata.

**7. The level of public demand and the level of demand from providers for insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable.**

People who experience hair loss due to alopecia areata are likely to have a high demand for insurance coverage for wigs; otherwise they may have to pay the full cost of a wig or hair prosthesis. The study found no literature on the level of public demand for insurance coverage for wigs for persons with alopecia areata. The psychological and social impact of alopecia areata, particularly for young people and women, may influence public demand for insurance coverage of wigs.

The study found no published literature on the level of demand from health care providers for insurance coverage for wigs for persons with alopecia areata. Health care professionals who provide services for persons with alopecia areata may witness the psychological and social effects of alopecia areata first-hand, which may influence their demand for insurance coverage of wigs for people with alopecia areata.

**8. The likelihood of achieving the objectives of meeting a consumer need as evidenced by the experience of other states.**

As of August 2008, four states require insurance coverage for wigs or scalp hair prostheses for hair loss suffered as a result of alopecia areata. Only one state (New Hampshire) includes a maximum dollar amount and one state (Missouri) limits coverage to children up to age 18. New Hampshire and New York mandate coverage only for group health plans.

**Table 4.2: States with Mandated Coverage of Wigs for Alopecia Areata<sup>122</sup>**

<b>State</b>	<b>Coverage</b>
Minnesota	Scalp hair prosthesis for hair loss suffered because of alopecia areata.
Missouri	Cover scalp hair prosthesis for child up to age 18 for hair loss due to alopecia areata or alopecia totalis.
New Hampshire	For group policies, scalp hair prosthesis for hair loss suffered because of alopecia areata, alopecia totalis, alopecia medicomentosa from cancer treatment, or permanent loss due to injury. Coverage for alopecia medicomentosa may not exceed \$350 per year. Need statement from doctor that medical necessity.
New York	Requires group health plans and health insurance issuers to cover costs for scalp hair prostheses worn for hair loss suffered as a result of alopecia areata, alopecia totalis or alopecia universalis.

**9. The relevant findings of state agencies or other appropriate public organizations relating to the social impact of the mandated health benefit.**

<sup>122</sup> NAIC Compendium of State Laws on Insurance Topics. National Association of Insurance Commissioners.

Internet searches of and/or phone inquiries with states that have or had an established process for studying mandated health insurance benefits, with a relatively large number of mandated health benefits, or located in the Northeast, found no existing studies of the social impact of mandated coverage of wigs for persons with alopecia areata. States searched included Arkansas, California, Colorado, Indiana, Louisiana, Maine, Maryland, Massachusetts, Minnesota, New Jersey, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia, Washington, and Wisconsin.

An assessment of Massachusetts's mandated health insurance benefits which the Massachusetts Division of Health Care Finance and Policy conducted in May 2008 referred to proposed (but not passed) legislation mandating coverage of scalp prostheses for persons with alopecia areata. Massachusetts completed an actuarial analysis, but analysis of the social impact of the proposed legislation was not found.

New York State bill S2907, introduced in March 2009, would require major medical or similar comprehensive-type coverage insurance policies to cover the purchase of cranial prostheses worn for permanent or temporary hair loss resulting from accident, injury or disease, or the treatment of such conditions and prescribed by the treating physician or other licensed health care provider legally authorized to prescribe under title eight of the education law. The bill was referred to the Insurance Committee; no further information is available. This review found no study of the social impact of S2907. Because New York has an existing mandate that covers scalp hair prostheses for persons with alopecia areata, alopecia totalis and alopecia universalis, this proposed bill appears to expand coverage of hair prostheses to additional reasons for hair loss.

#### **10. The alternatives to meeting the identified need, including, but not limited to, other treatments, methods or procedures.**

Treatments for alopecia areata include immunomodulators such as topical and oral corticosteroids and corticosteroid injections, and biologic agents such as minoxidyl. Hairpieces are used for persons with severe disease that is unresponsive to available medical treatments.<sup>123</sup> For those individuals with long-term and significant hair loss that does not respond to pharmacological treatments, there may not be an alternative to a wig or hair prosthesis. A wig may also be worn during pharmacological treatment that is effective, because the re-growth of hair can take several months. Three of seven insurers responded to inquiries about insurance coverage of pharmacological treatments for alopecia areata. All indicated that pharmacy benefits cover pharmacological treatments for alopecia areata; an exception being minoxydil (Rogaine). One insurer indicated it is excluded because it used for cosmetic purposes while the other indicated it is excluded because it is an over-the-counter drug.

#### **11. Whether the benefit is a medical or broader social need and whether it is consistent with the role of health insurance and the concept of managed care.**

It could be argued that the benefit is a medical need due to the recognized medical nature of the condition and the fact that wigs are covered by insurance policies for persons who experience hair loss for other reasons (cancer treatments, including chemotherapy and radiation). It also seems

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<sup>123</sup> Springer et al. 2003.

reasonable that a wig may help a patient cope with the effects of alopecia areata by fostering a better self-image, allowing the patient to interact socially without fear or apprehension about their hair loss. In this case, the wig may be more important in meeting social needs than any real or perceived medical need, but may avert development of other medical (psychological) conditions.

If insurance coverage of a wig for one type of hair loss is consistent with the role of health insurance, it follows that insurance coverage of a wig for other types of hair loss is also consistent with the role of health insurance.

## **12. The potential social implications of the coverage with respect to the direct or specific creation of a comparable mandated benefit for similar diseases, illnesses, or conditions.**

Insurance coverage of wigs for alopecia areata might lead to insurance coverage of wigs for other causes of hair loss. The proposed mandated benefit clearly excludes insurance coverage for wigs for androgenetic alopecia. However, there are several other hair loss disorders that result in temporary or permanent hair loss that the proposed mandated benefit does not mention and which may be considered for insurance coverage at some point in the future. These include female androgenetic alopecia (female pattern baldness), telogen effluvium (shedding of hair due to a wide variety of exposures, e.g., severe metabolic derangements, toxic exposures, injury or stress, chronic illness, chemotherapy), trichotillomania (a psychiatric impulse control disorder that results in plucking one's own hair), traction alopecia (unintentional hair loss due secondary to grooming styles), and tinea capitis (fungal infection of the scalp).<sup>124</sup>

## **13. The impact of the benefit on the availability of other benefits currently offered.**

Insurers and MCOs may look to cut costs by eliminating or restricting access to, or placing limits on other benefits currently offered. However, the availability of any benefits to be restricted may be limited. Existing benefits may be administratively costly to restrict and insurers may be contractually obligated to provide them. Additionally, many of the benefits that could be targets for elimination are included in plans for competitive advantage.

## **14. The impact of the benefit as it relates to employers shifting to self-insured plans and the extent to which the benefit is currently being offered by employers with self-insured plans.**

This study does not anticipate that employers will shift to self-insured plans as a result of this single proposed benefit. However, employers cognizant of the cumulative financial effects of mandated benefits and large enough to assume the risk of employee health care costs may look to opt in to self-insured plans.

There are several reasons for health insurance premium increases, including medical cost inflation, an aging population, an aging workforce, and required benefits or “mandates”. Employers considering a shift to self-insured plans are likely to weigh these and other factors prior to reaching a decision. Employers also may shift to plans with higher coinsurance amounts to keep premiums at a

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<sup>124</sup> Id.

more affordable level (“benefit buy down”). This can result in employees not taking up coverage and thus being uninsured or not accessing care when needed because of high deductibles.

A survey of seven health insurers and MCOs domiciled in Connecticut covering over 941,000 Connecticut residents in Administrative Services Only (ASO) plans (“self-insured”) found that none provided coverage for wigs for persons with alopecia areata.

#### **15. The impact of making the benefit applicable to the state employee health insurance or health benefits plan.**

State employees are included in the group health insurance numbers insurers reported in the insurer survey. None currently provide wigs for alopecia areata. If coverage of wigs for alopecia areata were a mandated benefit, state employees and their dependents covered by state employee health insurance or health benefits plans would be eligible for the benefit.

Like any other self-insured entity, if the state becomes self-insured, state-mandated benefits would not be required to be included in insurance policies offered to employees.

#### **16. The extent to which credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community determines the treatment, service or equipment, supplies or drugs, as applicable, to be safe and effective.**

No published literature was found regarding the safety and effectiveness of wigs for persons with alopecia areata. There would seem to be few inherent risks related to wearing a wig or a hair prosthesis.

### **4.5. Financial Impact**

#### **1. The extent to which the mandated health benefit may increase or decrease the cost of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

The expectation is that the price of hair prostheses will not change as a result of the alopecia areata mandate because the demand will be so small and the service so specialized. Many high-quality wigs cost well above \$350, so the \$350 will serve as a subsidy but will not cover the full cost of better wig.

#### **2. The extent to which the mandated health benefit may increase the appropriate or inappropriate use of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

For those people with alopecia areata for whom wigs are medically necessary, insurance coverage may increase the appropriate use of the treatment for those who cannot afford the cost of a wig. However, the mandated coverage maximum may not cover the full cost of a wig; thus the entire population this benefit is intended to serve may not utilize the coverage. Additionally, an unknown

percentage of the population with alopecia areata is likely to prefer not to wear a wig. These people are likely to have a relatively small amount of hair loss, spontaneous recovery after only a short period of time with hair loss, or an adverse reaction to wearing a wig, such as a skin rash. Inappropriate use of a wig is difficult to envision; however, in some cases, inappropriate access to insurance coverage for a wig may occur, if a wig is prescribed for someone who has hair loss for reasons other than alopecia areata and the claim is paid.

**3. The extent to which the mandated health benefit may serve as an alternative for more expensive or less expensive treatment, service or equipment, supplies or drugs, as applicable.**

Pharmaceutical treatments for alopecia areata include immunomodulators such as topical and oral corticosteroids and corticosteroid injections, and biologic agents such as minoxidyl. Some of these treatments may be less expensive than a wig while some may be more expensive. Due to the lack of clear evidence of the effectiveness of one drug over the others, it is not uncommon for several different drug regimens to be initiated or used simultaneously for a single patient. A wig may also be worn during pharmacological treatment, even when the treatment is effective, because the re-growth of hair can take several months.

Due to the extreme variability associated with alopecia areata in terms of symptomatology, time to remission, patient preferences, and degree of hair loss, it is difficult to determine whether or not pharmacological treatments are more or less expensive alternatives to wigs. Wigs and hair prostheses are used for persons with severe disease that is unresponsive to available medical treatments.<sup>125</sup> For those individuals with long-term and significant hair loss that does not respond to pharmacological treatments, there may not be an affordable alternative to a wig or hair prosthesis.

**4. The methods that will be implemented to manage the utilization and costs of the mandated health benefit.**

The expectation is that insurers and MCOs will rely on the same utilization management methods and cost controls used for other covered benefits. The proposed legislation does not prohibit insurers and MCOs from employing utilization management, prior authorization, or other utilization tools at their discretion. The \$350 annual limit and the relatively small percentage of the insured population eligible for the benefit will likely control costs.

**5. The extent to which insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, may be reasonably expected to increase or decrease the insurance premiums and administrative expenses for policyholders.**

Relatively few cases of alopecia areata are known to exist in the under-65 insured population, and even fewer occur anew each year. Because alopecia areata is rare and the hair loss due to it is often only temporary, the expectation is that wig coverage would add only a penny or two to the per person per month cost of medical care. This represents an incremental addition of approximately 0.01 percent to overall medical cost or a range of \$0.00 to \$0.04 PMPM. This mandate also applies

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<sup>125</sup> Springer et al. 2003.

to limited benefit plans, which are lower in cost and cover fewer medical benefits than more comprehensive plans. This does not change the one or two cent PMPM cost for limited benefit plans, but it will increase the overall percentage of cost, however, for limited benefit plans only.

Please see Appendix B: Ingenix Consulting Actuarial Report, pages 14 & 30 for further discussion.

- 6. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is more or less expensive than an existing treatment, service or equipment, supplies or drugs, as applicable, that is determined to be equally safe and effective by credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community.**

Not applicable. Pharmacological treatments may be used for persons with alopecia areata, but even when they are effective they require time because hair must regrow. Wigs provide immediate relief from the physical symptoms of alopecia areata, relief that is not possible with any pharmacological treatment. Wigs and hair prostheses are also used for persons with severe disease that is unresponsive to available medical treatments.<sup>126</sup>

- 7. The impact of insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, on the total cost of health care, including potential benefits or savings to insurers and employers resulting from prevention or early detection of disease or illness related to such coverage.**

Insurance coverage of \$350 for wigs for alopecia areata results in an incremental addition of approximately 0.01 percent to overall medical cost, with a range of \$0.00 to \$0.04 PMPM. There is some evidence that hair loss effects mental health and wigs can help improve self-image.

Employment impacts are limited due to the likely age of the patient. Only an estimated 45-50 percent of patients are actively in the labor force, including newly diagnosed and those whose disease carries over from their teens into their twenties.

- 8. The impact of the mandated health care benefit on the cost of health care for small employers, as defined in section 38a-564 of the general statutes, and for employers other than small employers.**

The study found no published literature on the effect of mandated coverage of wigs for persons with alopecia areata on the cost of health care for small employers. Although small employers may be more sensitive to premium increases than other employers, the estimated cost of the mandate (\$.02 PMPM) suggests little difference in effects.

- 9. The impact of the mandated health benefit on cost-shifting between private and public payers of health care coverage and on the overall cost of the health care delivery system in the state.**

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<sup>126</sup> Springer et al. 2003.

Due to the low incidence of alopecia areata in the insured population and the small dollar value of the proposed benefit, the mandated benefit for wigs is not expected to have an impact on cost-shifting between private and public payers. The actuarial analysis estimated an increase of \$.02 PMPM in medical cost. If all of the estimated 850 commercially-insured individuals with alopecia areata in Connecticut received the \$350 benefit in 2010, the total cost added to the health delivery system would be \$297,500.

# Part 5. Human Leukocyte Antigen Testing

Review and Evaluation of Public Act 09-188

An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage

Sections 9 & 10

Health Insurance Coverage of Human Leukocyte Antigen Testing for purposes of enrolling in the National Marrow Donor Registry

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## 5.1. Executive Summary

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage, Sections 9 and 10 requiring insurers to cover certain human leukocyte antigen tests. The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy.

The Committee requested the analysis be based on the following elements:

Provide coverage for expenses arising from human leukocyte antigen testing, also referred to as histocompatibility locus antigen testing, for A, B and DR antigens for utilization in bone marrow transplantations.

Prohibit imposition of a coinsurance, copayment, deductible or other out-of-pocket expense for such testing in excess of twenty percent of the cost for such testing per year.

Require that the testing be performed in certain facilities.

Limit coverage to individuals who, at the time of testing, complete and sign an informed consent form that also authorizes the results of the test to be used for participation in the National Marrow Donor Program.

Such coverage may be limited to a lifetime maximum of one testing.

Current coverage status for HLA testing: A survey of the major health insurers in Connecticut indicates that four of the seven currently provide coverage for HLA testing; however one of these four covers HLA testing only if it is medically necessary, which it would not be for the potential donor. It is possible that these four cover HLA testing for transplant recipients only. Three of the companies do not cover HLA testing in any of their insurance contracts.

Premium impact of proposed mandate: the added premium is estimated at \$0.06 per member per month.

Impact on use of procedure: an estimated 1,200 additional persons in Connecticut will join the NMDP Registry and will have initial HLA testing as part of that registration.

Level of burden caused by lack of mandate: the burden is less than \$100 for donor. However, it can be significantly more substantial for prospective recipients, who often pay the costs of donor HLA typing during donor drives to assist in their search for a matched donor.

Employer benefit: this is difficult to evaluate, because the real value is to the employer of the prospective recipient, who may or may not be employed by the same employer as the donor.

## 5.2. Background

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage Sections 9 and 10, requiring individual and group health insurance policies to provide coverage for expenses arising from human leukocyte antigen testing for A, B and DR antigens, and limiting coinsurance and co-pays to a maximum of 20 percent of the cost for such testing, provided that the individual tested has completed and signed an informed consent form that authorizes the results to be used for participation in the National Marrow Donor Program.

The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy.

### Proposed mandate

The Committee requested the analysis be based on the following elements from P.A. 09-188, which would require that individual and group health insurance policies delivered, issued for delivery, renewed, amended or continued in Connecticut:

Provide coverage for expenses arising from human leukocyte antigen testing, also referred to as histocompatibility locus antigen testing, for A, B and DR antigens for utilization in bone marrow transplantations.

Prohibit imposition of a coinsurance, copayment, deductible or other out-of-pocket expense for such testing in excess of twenty percent of the cost for such testing per year.

Require that the testing be performed in certain facilities.

Limit coverage to individuals who, at the time of testing, complete and sign an informed consent form that also authorizes the results of the test to be used for participation in the National Marrow Donor Program (NMDP).

Such coverage may be limited to a lifetime maximum of one testing.

### HLA testing

Human leukocyte antigen (HLA) testing is used to match potential bone marrow or peripheral blood stem cell donors to patients who need marrow or peripheral blood stem cell transplants. The human leukocyte antigen (HLA) system refers to a group of genes that are important to the immune function of the body (this system is also called the major histocompatibility complex or MHC).<sup>127</sup> Three of the antigens, HLA-A, HLA-B and HLA-DR, are found on almost every cell of the body and contribute the most to the immunogenicity of a transplant.<sup>128</sup> The other antigens that are important to successful transplantation are HLA-C, HLA-DQ and HLA-DP. A study of NMDP data from 3875

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<sup>127</sup> Schur P, Thomson W. 2008. HLA: A roadmap. UpToDate. [www.uptodate.com](http://www.uptodate.com) accessed 10/9/2009.

<sup>128</sup> Milford EL. 1993. HLA molecular typing. *Current Opinions in Nephrology and Hypertension* 2: 892-7.

transplantations showed that high-resolution DNA matching for HLA-A, -B, -C, and -DRB1 alleles is associated with higher rates of survival<sup>129</sup>.

There are three phases of HLA testing for marrow transplant. Initial screening, generally comprising analysis for A, B and DR antigens, is done when a new volunteer is recruited for the National Marrow Donor Registry. It generally involves a cheek swab which is then sent for laboratory DNA testing, although it can also be performed via a blood test. The second and third phases of testing are performed once a potential donor has been identified for a specific recipient on the basis of the initial testing, to determine whether or not there is in fact an acceptable match between the potential donor and the intended recipient.

### **National Marrow Donor Registry**

The National Marrow Donor Registry was established in 1986 to recruit potential bone marrow donors and to facilitate bone marrow transplants for patients who do not have a matched relative. It receives funding from the Health Resources and Services Administration and the U.S. Office of Naval Research.<sup>130 131</sup> It is headquartered in Minneapolis, MN and works with a network of donor centers, bone marrow and peripheral blood stem cell collection centers, umbilical cord blood banks and transplant centers. The 73 donor centers are responsible for the recruitment and management of adult marrow donors. One of these centers is located in West Hartford.

The National Marrow Donor Program (NMDP) requires preliminary HLA typing to register on the NMDP as a potential donor. New volunteer donors are typed for HLA-A, HLA-B and HLA-DR antigens by means of DNA analysis of a buccal, or mouth, swab. The NMDP participates with other bone marrow registries internationally to provide a list of potential bone marrow matches. Physicians with patients in need of a bone marrow transplant can search the international database to find prospective donors. Generally, this search occurs when a related or local bone marrow donor cannot be found. Potential matches then undergo patient specific donor matching tests and a physical exam to determine if they are healthy enough to be a donor at the expense of the patient. Under this mandate, insurers would provide coverage only for the initial, preliminary HLA testing.

The cost of the preliminary testing currently is paid by the potential donor, by the potential donor's insurance with a co-payment by the insured, by the National Marrow Donor Program or by a recipient who is looking for a match (this is often supported by fund-raising activities sponsored by the recipient or the family of the recipient, since many potential donors must often be recruited in order to find one possible match).<sup>132</sup> The second and third phases of testing are generally paid by the recipient or his/her health insurer as part of the costs of the transplant.

For the person wishing to register as a potential donor, the least-cost option is currently free. Patients who do not have insurance coverage or who wish to avoid the co-payment can get tested for free at a

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<sup>129</sup> Lee SJ, Klein J, Haagenson M, et al. 2007. High-resolution donor-recipient HLA matching contributes to the success of unrelated donor marrow transplantation. *Blood* 110(13): 4576-83.

<sup>130</sup> Kollman C, Abella E, Baitty R, et al. 2004. Assessment of optimal size and composition of the U.S. national registry of hematopoietic stem cell donors. *Transplantation* 78 (1): 89-95.

<sup>131</sup> Confer D, Robinett P. 2008. The U.S. National Marrow Donor Program role in unrelated donor hematopoietic cell transplantation. *Bone Marrow Transplant* 42: S3-S5

<sup>132</sup> Testimony at CT General Assembly, Committee on Insurance and Real Estate public hearing on SB-290, Feb. 3, 2009.

NMDP bone marrow drive or through a free mail-in kit on the internet. These free tests are supported by donations with a base cost of \$52 per test. This option may involve queuing costs associated with attending a drive or registering via the phone or over the internet. Individuals who go through their insurance will generally have a co-pay; most often this co-pay is 20 percent.<sup>133</sup>

**It is assumed for purposes of this report that only the preliminary phase of HLA testing is intended to be included in the proposed mandated benefit.**

## 5.3. Methodology

In addition to the methodologies described in the General Overview section, CPHHP staff and the medical librarians conducted literature searches using the following resources:

- Pub Med
- Scopus
- Web
- UCHC library catalog

The search terms included: HLA antigens; genetics; Human Leukocyte Antigen Testing; molecular diagnostic techniques; trends; economics; histocompatibility; histocompatibility testing; insurance, health; kidney transplantation; statistics & numerical data; tissue donors; tissue antigens; transplantation; blood group incompatibility; and tissue and organ procurement.

## 5.4. Social Impact

### **1. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is utilized by a significant portion of the population.**

The proposed benefit mandate is limited to preliminary HLA testing for those who wish to join the National Marrow Donor Program (NMDP), and is further limited to testing for those antigens which are included in the initial screening test. HLA testing for other purposes is not included in the proposed mandate. This testing only need to be done once per individual and the proposed mandate allows the benefit to be limited to one test per lifetime. It is assumed that the mandate does not include the second or third levels of testing needed to confirm the compatibility of the potential donor with a specific recipient. Nationally, approximately 400-450,000 new entrants to the NMDP Registry have this testing performed in a given year.<sup>134</sup>

### **2. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is available to the population, including, but not limited to, coverage under Medicare, or through public programs administered by charities, public schools, the**

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<sup>133</sup> See CCEA report, Appendix III, p. 14.

<sup>134</sup> NMDP 2008 Report to the Community. Available at:

[http://www.marow.org/ABOUT/Who\\_We\\_Are/Publications/Report\\_to\\_the\\_Community\\_PDF/00594%202008%20Report%20to%20Community.pdf](http://www.marow.org/ABOUT/Who_We_Are/Publications/Report_to_the_Community_PDF/00594%202008%20Report%20to%20Community.pdf)  
Accessed 12/14/2009.

## **Department of Public Health, municipal health departments or health districts or the Department of Social Services.**

Medicare Part B covers bone marrow transplantation and includes coverage for necessary lab testing such as HLA typing for compatibility.<sup>135</sup> However, this is coverage for the Medicare patient, and presumably would not cover the expenses of someone joining the NMDP registry without a Medicare-covered recipient in mind.

Medicaid does not mention HLA typing specifically, but would cover such testing if it was medically necessary and appropriate.<sup>136</sup> This indicates that it would be covered for an identified transplant recipient, as it would be medically necessary for the transplant to be successful. However, it is not medically necessary for a potential donor and presumably it would not be covered if the donor is not being tested for a specific recipient.

In some instances, a patient in need of a bone marrow transplant will sponsor a donor-recruitment drive and will provide payment for the cost of the initial testing through personal funds or fund-raising efforts.

The National Marrow Donor Program announced in July 2009 that it would no longer charge for such testing if done through its centers.

### **3. The extent to which insurance coverage is already available for the treatment, service or equipment, supplies or drugs, as applicable.**

This service is currently not covered by three of the insurers domiciled in Connecticut, per their responses to our survey questionnaire. One of these three indicated that its standard policies specifically exclude the costs of tissue matching for both donors and recipients. It indicated that its large group policy holders can elect to cover such costs as part of their benefit design.

Four of the insurers indicated that they cover HLA testing. One specifically noted that it covers HLA testing if it is medically necessary. Since it is not medically necessary for a potential donor who is joining the registry, it is unclear whether this insurer would cover the costs of donor initial testing. It is also unclear from the responses of the other three insurers whether their coverage is limited to what is medically necessary for the bone marrow recipient, or whether it would cover HLA testing for one of their insureds who volunteers to be included in the NMDP registry.

### **4. If the coverage is not generally available, the extent to which such lack of coverage results in persons being unable to obtain necessary health care treatment.**

The lack of coverage for the initial HLA screening does not result in the potential donor being unable to obtain necessary health care treatment. It can be a barrier to the recruitment of potential

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<sup>135</sup> Medicare Coverage Guidelines for Transplants- Cornea and Bone Marrow (Connecticut). Connecticut limits independently verified on CMS 2009 Lab Fee Schedule Database. Available at: <http://www.cms.hhs.gov/apps/ama/license.asp?file=/ClinicalLabFeeSched/downloads/09CLAB.ZIP>. Accessed 12/16/2009.

<sup>136</sup> Correspondence with Nina Holmes, CT DSS Medical Policy Unit, November 2, 2009.

donors and therefore can result in the lack of availability of compatible bone marrow for recipients.<sup>137</sup>

**5. If the coverage is not generally available, the extent to which such a lack of coverage results in unreasonable financial hardships on those persons needing treatment.**

From the perspective of the donor's household health care burden, it makes sense to impute the least cost alternative, \$0 per family, in this case if testing is done at an NMDP donor center. If insurers do charge a co-pay on HLA testing, potential donors may still opt for free testing with NMDP donor centers to avoid an out-of-pocket cost. The net change for this mandate would be just the change in the insureds' share of the premium. This change is small enough that it does not change the percent of family income spent on health care.<sup>138</sup>

From the perspective of the recipient, finding an acceptable match frequently requires the recruitment of many potential donors. To the extent that the costs of recruitment drives and initial donor testing are borne by the recipient, this can impose substantial financial hardship on the recipient.<sup>139</sup> However, if the NMDP is now providing free initial testing to new registry entrants, this financial hardship may be significantly alleviated.

**6. The level of public demand and the level of demand from providers for the treatment, service or equipment, supplies or drugs, as applicable.**

The demand for this benefit comes primarily from prospective recipients and their families, and from the National Marrow Donor Program. The NMDP has indicated that it receives approximately 1200 new requests for registry searches per month nationally. One study performed in 2001 indicated that approximately 15 percent of patient searches do not find a match.<sup>140</sup>

**7. The level of public demand and the level of demand from providers for insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable.**

The demand for this benefit comes primarily from patients who need marrow or peripheral blood stem cell transplants and their families, and from the National Marrow Donor Program. Approximately 4,000 unrelated donor transplants are performed annually in the United States.

**8. The likelihood of achieving the objectives of meeting a consumer need as evidenced by the experience of other states.**

Massachusetts, Missouri, New Hampshire and Rhode Island currently mandate coverage of HLA testing for potential bone marrow donors.

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<sup>137</sup> Testimony before the CT General Assembly Committee on Insurance and Real Estate, February 3, 2009, as reported in Joint Favorable Report for S.B. 290.

<sup>138</sup> See CCEA report, Appendix III, p. 14.

<sup>139</sup> See Ingenix report, Appendix II, p. 11.

<sup>140</sup> Lee SJ, et al. 2007.

**Table 5.1: States with Mandated Coverage of Human Leukocyte Antigen Testing**

<b>State</b>	<b>Effective Year</b>	<b>Coverage</b>
Massachusetts MGL Ch.175, sec. 47V and Ch. 176G, sec. 4Q	2001	Same as proposed mandate
Missouri RSMo 376.1275	2002	Same as proposed mandate
New Hampshire NH 415:6m	2006	Same as proposed mandate
Rhode Island RGL 27-20-36	1998	Same as proposed mandate

**9. The relevant findings of state agencies or other appropriate public organizations relating to the social impact of the mandated health benefit.**

No relevant findings from any state agency or appropriate public organizations were found related to the social impact of mandated insurance coverage of HLA testing for prospective registrants with the National Marrow Donor Registry.

**10. The alternatives to meeting the identified need, including, but not limited to, other treatments, methods or procedures.**

HLA typing is the only method available for matching recipient and donor tissue types. Other methods of covering the expense of the preliminary HLA testing in order to expand the pool of potential donors include philanthropic fund-raising and government funding from general tax funds.

**11. Whether the benefit is a medical or broader social need and whether it is consistent with the role of health insurance and the concept of managed care.**

HLA testing does not meet any medical need of the person being tested, the potential donor, who is the insured in this case. It may meet a social or psychological need of the person being tested, in that it allows that person to potentially benefit someone else.

However, there is a perceived social need to encourage bone marrow donation, since there are lives that could be saved by increasing the availability of matched marrow for patients who need a BMT but cannot find a matched donor.

Initial HLA testing that results in the expansion of the Bone Marrow Donor Registry will presumably benefit patients in need of a bone marrow transplant, by making a larger pool of potential donors available to search and presumably resulting in more matches. This would meet the medical needs of the recipient, who is often unidentified at the time of the initial HLA typing and who may or may not be insured under the same policy. Insurance coverage of the cost of the initial HLA testing may also meet the economical, social and psychological needs of the recipient and/or family members, who will be spared the need to do significant fund-raising to meet the costs of donor recruitment drives, and who may find acceptable matches more quickly from an expanded NMDP Registry.

To the extent that this benefit addresses a medical need, not of the insured person, but of an often unidentified recipient, it is outside the usual insurance policy or managed care contract, which generally covers the medically necessary expenses of the person insured by the policy.

**12. The potential social implications of the coverage with respect to the direct or specific creation of a comparable mandated benefit for similar diseases, illnesses, or conditions.**

Preliminary HLA typing is done not for the benefit of nor is it medically necessary for the potential donor, who is the insured person. It is for the benefit of other, often unidentified persons (the potential recipients) who are not necessarily insured under the same policy. In this respect, this proposed mandate is fairly unique. Although the impact on premiums of this benefit may be relatively small, if it eventually led to the mandating of coverage for other procedures or services which are not for the benefit of the insured person, it could have more far-reaching implications.

**13. The impact of the benefit on the availability of other benefits currently offered.**

To the extent that this benefit encourages more people to enroll in the NMDP Registry, it will likely result in some increase in bone marrow, peripheral blood stem cell or umbilical cord blood transplants. The actuarial report estimates that bone marrow or other hematopoietic stem cell transplants may be increased by 5 percent in Connecticut as a result of this mandate, and estimates the premium impact of such increase at \$0.01 PMPM.<sup>141</sup>

Insurers and MCOs may look to compensate for these additional costs by raising deductibles, coinsurance or co-pay amounts or by eliminating or restricting access to, or placing limits on other benefits currently offered. However, the ability to take any of these steps may be limited. Existing benefits may be administratively costly to restrict and/or insurers may be contractually obligated to provide them. Additionally, many of the benefits that could be targets for elimination are included in plans for competitive advantage.

**14. The impact of the benefit as it relates to employers shifting to self-insured plans and the extent to which the benefit is currently being offered by employers with self-insured plans.**

To the extent that the insurers who responded to our survey provided data on their “administrative services only” contracts, some self-insured plans offer HLA testing when medically necessary. Presumably, this would not apply to registration-testing for potential donors, since they have no medical necessity for this testing. The NMDP report indicates that a number of large companies provide support within their workplaces for marrow donor drives. It is unknown whether these companies cover the cost of the preliminary HLA testing through their health plans.

**15. The impact of making the benefit applicable to the state employee health insurance or health benefits plan.**

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<sup>141</sup> See Ingenix report, Appendix II, p. 16.

The impact of this mandate will be the same for the state employee health plans as for other insured health plans, provided the state plans elect to comply with the mandate even though they are moving to self-funded status.

- 16. The extent to which credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community determines the treatment, service or equipment, supplies or drugs, as applicable, to be safe and effective.**

The procedure for this test is either a cheek swab or a blood test, which is then submitted to an approved lab for DNA analysis. Both procedures are generally safe for the individual being tested and effective for the purpose of the test.

## 5.5. Financial Impact

- 1. The extent to which the mandated health benefit may increase or decrease the cost of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

It is possible that by increasing the volume of HLA tests performed, the unit cost of such tests could be lowered. It is also possible that this mandate will encourage the development of new testing technologies, which may be more expensive and may increase the overall cost of the service.

- 2. The extent to which the mandated health benefit may increase the appropriate or inappropriate use of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

Over time, with sufficient encouragement from public health agencies, the HLA testing mandate could substantially increase the rate at which potential bone marrow donors are recruited and registration-tested for potential compatibility. It is estimated that an additional 1,200 commercially insured people in CT will undergo registration testing in 2010.<sup>142</sup>

- 3. The extent to which the mandated health benefit may serve as an alternative for more expensive or less expensive treatment, service or equipment, supplies or drugs, as applicable.**

The study found no other widely used methods for matching potential donors with patients who need hematopoietic stem cell transplants.

- 4. The methods that will be implemented to manage the utilization and costs of the mandated health benefit.**

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<sup>142</sup> See Ingenix report, Appendix II, p. 25.

The mandate for HLA testing may cause payers (insurers and HMOs) to negotiate with preferred labs for the reimbursement for HLA tests.<sup>143</sup>

- 5. The extent to which insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, may be reasonably expected to increase or decrease the insurance premiums and administrative expenses for policyholders.**

The total projected incremental 2010 cost is \$0.06 per member per month (PMPM). \$0.05 of this amount is due to the cost of registration-testing for an increased number of donors and \$0.01 is due to the expected increase of blood marrow and other hematopoietic cell transplants.<sup>144</sup> (N.B., This assumes that the NMDP will bill insurance carriers for the cost of the tests which it provides free to the potential donor.) The actual 2010 cost could be greater or less than \$0.06. Massachusetts estimated that its HLA mandate costs \$0.09 PMPM.<sup>145</sup>

- 6. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is more or less expensive than an existing treatment, service or equipment, supplies or drugs, as applicable, that is determined to be equally safe and effective by credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community.**

DNA analysis has generally replaced other types of analysis as the preferred method for HLA typing.<sup>146</sup> The use of this method is not expected to be affected by the availability of insurance. Blood serum analysis is less expensive but is also regarded as less accurate.

- 7. The impact of insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, on the total cost of health care, including potential benefits or savings to insurers and employers resulting from prevention or early detection of disease or illness related to such coverage.**

As more donors are located, more bone marrow transplants can be expected to be performed, and potentially more lives saved. The additional transplants will add an estimated \$0.01 PMPM to the health insurance premiums of Connecticut employers.

The recipient's employer may benefit from this mandate due to the possibility of identifying acceptable matches for the recipient at an earlier point in the disease progression, thereby reducing other costs of treatment. Additional savings may be achieved if better matches result in fewer and less exacerbated complications from marrow and stem cell transplants, thereby reducing the costs of follow-up care. Better and timelier matches may also result in quicker recoveries and quicker returns to work for employees, as well as improved productivity after the return to work.

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<sup>143</sup> See Ingenix report, Appendix II, p. 23.

<sup>144</sup> See Ingenix report, Appendix II, p. 15 for a discussion of the method of calculating this estimate.

<sup>145</sup> Bachman S, Highland J, Nordahl K, et al. 2008. Comprehensive review of mandated benefits in Massachusetts, report to the legislature. Publication No. 1557.

<sup>146</sup> Lee SJ, et al. 2007.

It must be pointed out that such savings would accrue to the employer and the insurer of the transplant recipient. These would not necessarily be the employer or the insurer of the donor, which would pay for the mandate. This makes it very difficult to quantify any benefit or potential savings for CT insurers and employers. Potential savings for Connecticut employers rely to a large extent on the prospect of similar legislation being passed in other states and among foreign jurisdictions so that there is a broad national and even international participation. A widespread effort will be necessary to increase the likelihood of Connecticut residents needing a BMT finding an acceptable match.

**8. The impact of the mandated health care benefit on the cost of health care for small employers, as defined in section 38a-564 of the general statutes, and for employers other than small employers.**

This mandate is expected to have roughly the same effect on small groups as large. That is, the difference in the effect on small vs. large groups is not expected to be large enough to calculate.

**9. The impact of the mandated health benefit on cost-shifting between private and public payers of health care coverage and on the overall cost of the health care delivery system in the state.**

NMDP has announced that it will provide donor registration testing free of charge at its donor recruitment centers as of July 1, 2009. To the extent NMDP then bills the donor's insurance company or health plan, it will shift such costs to the private insurance market. This mandate is estimated to add \$0.06 PMPM to the cost of health insurance.

# Part 6. Second Colonoscopy Cost-Sharing

Review and Evaluation of Public Act 09-188,

An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage, Sections 11 and 12,

Prohibiting individual and group health insurance policies from imposing coinsurance, copayment, deductible or other out-of-pocket expenses for additional colonoscopies in a policy year, if ordered by a physician for an insured.

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## 6.1. Executive Summary

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage, Sections 11 and 12, requiring issuers of individual and group health insurance policies to eliminate cost-sharing for second or subsequent colonoscopies in one policy year. The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy.

The Committee requested the analysis be based on the following amendment to the bill:

No policy of individual or group health insurance delivered, issued for delivery, amended, renewed or continued in Connecticut after the effective date shall impose a coinsurance, copayment, deductible or other out-of-pocket expense for any additional colonoscopy ordered in a policy year by a physician for an insured. High deductible health plans are excluded from this mandate.

It is assumed for purposes of this analysis that the requirement that initial colonoscopies be done in accordance with the recommendations established by the American College of Gastroenterology, after consultation with the American Cancer Society will also apply to the second and subsequent colonoscopies covered by this proposed mandate.

Current coverage status for second colonoscopies: A survey of the major health insurers in Connecticut indicates that only one of the seven companies surveyed currently eliminates the co-pays, co-insurance and/or deductibles for a second or subsequent colonoscopy in one policy year. That company indicated that 28 percent of its group insureds and two percent of its individual insureds currently have coverage that complies with this proposed mandate. Two companies responded that they did not have this data. Based on this data, it is estimated that 11.4 percent of fully insured people in Connecticut currently have benefits that comply with the proposed mandate.

Level of burden caused by lack of mandate: Nationally, the average out-of-pocket payment for individuals that have one colonoscopy is \$175.50, including co-insurance, co-payments and deductible payments. Without the mandate, the average additional burden for those who need a second or subsequent colonoscopies in one policy year is estimated to be \$47.50. This is so because these individuals are more likely to have greater overall health expenses and are more likely to have already paid down a larger portion of their total out-of-pocket maximums than those who need only one colonoscopy in a year.

Premium impact of proposed mandate: The impact on premiums of this proposed mandate is estimated to be \$0.01 per member per month (PMPM).

Impact on use of procedure: No impact on use of colonoscopies is expected from this proposed mandate

Employer benefit: To the extent that second and subsequent colonoscopies help to prevent or treat colorectal cancer, or to prevent its recurrence, overall health insurance costs may be reduced.

## 6.2. Background

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage, Sections 11 and 12, requiring issuers of individual and group health insurance policies to eliminate cost-sharing for second or subsequent colonoscopies in one policy year. The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy.

### *Proposed Mandate*

The Committee requested the analysis be based on the following elements from P.A. 09-188:

The proposed amendment to CGSA sec, 38a-492k and sec 38a-518k would prohibit health insurance policies, other than high deductible health plans, from imposing a coinsurance, copayment, deductible or other out-of-pocket expense for any additional colonoscopy ordered by a physician within a policy year.

### *Colorectal Cancer*

Colorectal cancer is the 4th most common cancer diagnosed in Connecticut men and the 3rd most common cancer diagnosed in Connecticut women, accounting for 632 deaths in Connecticut in 2005. It is also one of the most preventable forms of cancer. Current research has established that most colorectal cancers develop from polyps in the colon or rectum, which are generally accepted as precursors to full-blown colorectal cancer.<sup>147 148</sup> Colorectal cancer is estimated to take about 10 years to develop and most colorectal cancer occurs in people over 50 years old, although it can occur at any age. In families with certain genetic mutations, it can occur as early as 35.

### *Colonoscopy*

Colonoscopy is a form of endoscopy performed on the colon for the purpose of screening for and preventing colorectal cancer. It differs from other methods of colorectal cancer screening in that it can not only identify already existing colon cancer, but it can also identify polyps and allow for their removal in one procedure. It is thus not only a screening tool for the detection of cancer, but also a cancer-prevention tool. It permits examination of the entire colon, as compared to flexible sigmoidoscopy which only permits examination of the lower portion of the colon. Colonoscopy requires complete cleansing of the bowels in preparation for the procedure, conscious sedation during the procedure, and transportation assistance for patients after the procedure since they should not drive themselves home afterward. It also carries with it some risk of complications, which can be serious (e.g., bowel perforation or bleeding resulting from polyp removal).

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<sup>147</sup> Levin, B, Lieberman, CS, McFarland, B et al. Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline From the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. *Gastroenterology* 2008;134(5): 1582.

<sup>148</sup> Winawer S, Zaube A, Ho M, O'Brien M. et al. *Prevention of Colorectal Cancer by Colonoscopic Polypectomy*. *NEJM* . 1993;329:1977-1981.

## Current Connecticut Law

Current Connecticut law mandates that individual and group health insurance contracts provide coverage for colorectal cancer screening, including but not limited to (1) an annual fecal occult blood test and (2) colonoscopy, flexible sigmoidoscopy or radiologic imaging in accordance with the recommendations established by the American College of Gastroenterology, after consultation with the American Cancer Society, based on the ages family histories and frequencies provided in the recommendations.<sup>149</sup>

## ACS/Multi-Society Task Force Guidelines

The American Cancer Society, a task force of gastroenterology organizations and the American College of Radiology have issued joint guidelines for the administration of colonoscopies and other colorectal cancer screening methods (ACS/Multi-Society Task Force guidelines)<sup>150</sup>, shown below. In general, these guidelines call for screening for the early detection of colorectal cancer, beginning at age 50 in men and women who are at average risk for the development of such cancer. Four types of screening methods that detect both polyps and cancers are included in the guidelines and the methodology, prevention potential, accuracy and risks of each are described. Three of them: flexible sigmoidoscopy, barium enema and computed tomography colonography, are recommended every 5 years. Colonoscopies are recommended every 10 years, unless a particular patient is deemed to be at high risk of developing colorectal cancer on the basis of family history or life-style factors spelled out in the guidelines.

TABLE 2 Guidelines for Screening for the Early Detection of Colorectal Cancer and Adenomas for Average-risk Women and Men Aged 50 Years and Older

The following options are acceptable choices for colorectal cancer screening in average-risk adults beginning at age 50 years. Since each of the following tests has inherent characteristics related to prevention potential, accuracy, costs, and potential harms, individuals should have an opportunity to make an informed decision when choosing one of the following options. In the opinion of the guidelines development committee, *colon cancer prevention* should be the primary goal of colorectal cancer screening. Tests that are designed to detect both early cancer and adenomatous polyps should be encouraged if resources are available and patients are willing to undergo an invasive test.

### Tests that Detect Adenomatous Polyps and Cancer

#### Test Interval Key Issues for Informed Decisions

FSIG with insertion to 40 cm or to splenic flexure

Every 5 years

- Complete or partial bowel prep is required
- Sedation usually is not used, so there may be some discomfort during the procedure
- The protective effect of sigmoidoscopy is primarily limited to the portion of the colon examined
- Patients should understand that positive findings on sigmoidoscopy usually result in a referral for colonoscopy
- Colonoscopy Every 10 years • Complete bowel prep is required
- Conscious sedation is used in most centers; patients will miss a day of work and will need a chaperone for transportation from the facility
- Risks include perforation and bleeding, which are rare but potentially serious; most of the risk is associated with polypectomy

DCBE Every 5 years

- Complete bowel prep is required

<sup>149</sup> CGSA section 38a-492k I(individual policies) and CGSA section 38a-518k (group policies)..

<sup>150</sup> Levin, B, Lieberman, CS, McFarland,,B et al. Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline From the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. *CA Cancer J Clin* 2008 58: 130-160.

- If patients have one or more polyps  $\geq 6$  mm, colonoscopy will be recommended; follow-up colonoscopy will require complete bowel prep
- Risks of DCBE are low; rare cases of perforation have been reported

CTC Every 5 years

- Complete bowel prep is required
- If patients have one or more polyps  $\geq 6$  mm, colonoscopy will be recommended; if same day colonoscopy is not available, a second complete bowel prep will be required before colonoscopy
- Risks of CTC are low; rare cases of perforation have been reported
- Extracolonic abnormalities may be identified on CTC that could require further evaluation

### Tests that Primarily Detect Cancer

#### Test Interval Key Issues for Informed Decisions

gFOBT with high sensitivity for cancer

Annual

- Depending on manufacturer's recommendations, 2 to 3 stool samples collected at home are needed to complete testing; a single sample of stool gathered during a digital exam in the clinical setting is not an acceptable stool test and should not be done
- Positive tests are associated with an increased risk of colon cancer and advanced neoplasia; colonoscopy should be recommended if the test results are positive
- If the test is negative, it should be repeated annually
- Patients should understand that one-time testing is likely to be ineffective FIT with high sensitivity for cancer

Annual

sDNA with high sensitivity for cancer

Interval uncertain

- An adequate stool sample must be obtained and packaged with appropriate preservative agents for shipping to the laboratory
- The unit cost of the currently available test is significantly higher than other forms of stool testing
- If the test is positive, colonoscopy will be recommended
- If the test is negative, the appropriate interval for a repeat test is uncertain

Abbreviations: FSIG, flexible sigmoidoscopy; DCBE, double-contrast barium enema; CTC, computed tomography colonography; gFOBT, guaiac-based fecal occult blood test; FIT, fecal immunochemical test; sDNA, stool DNA test.

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Where cancer or certain types of polyps have been found, or where inadequate bowel preparation has inhibited a clear view of the entire colon, the guidelines call for more frequent surveillance colonoscopies.<sup>151</sup> In such cases, the guidelines may call for follow-up colonoscopies within a few weeks or months to ensure that a colon is “clean”, or clear of polyps and/or cancer. Additionally, symptoms may develop after a screening colonoscopy which dictate a second colonoscopy to diagnose the cause, especially in those at high risk for development of colorectal cancer. These include rectal bleeding or an unexplained change in bowel habits.

TABLE 2 Surveillance Recommendations

1. Patients with small rectal hyperplastic polyps should be considered to have normal colonoscopies, and therefore the interval before the subsequent colonoscopy should be 10 years. An exception is patients with a hyperplastic polyposis

<sup>151</sup> Winawer S, Zauber A, Fletcher R, Stillman J et al. Guidelines for Colonoscopy Surveillance after Polypectomy: A Consensus Update by the US Multi-Society Task Force on Colorectal Cancer and the American Cancer Society *Cancer J Clin* 2006; 56:143-159. Accessed on-line at <http://caonline.amcancersoc.org/cgi/content/full/56/3/143#TBLU3>

syndrome. They are at increased risk for adenomas and colorectal cancer and need to be identified for more intensive follow up.

2. Patients with only one or two small (<1 cm) tubular adenomas with only low-grade dysplasia should have their next follow-up colonoscopy in 5 to 10 years. The precise timing within this interval should be based on other clinical factors (such as prior colonoscopy findings, family history, and the preferences of the patient and judgment of the physician).
3. Patients with 3 to 10 adenomas, or any adenoma > 1 cm, or any adenoma with villous features, or high-grade dysplasia should have their next follow-up colonoscopy in 3 years providing that piecemeal removal has not been done and the adenoma(s) are completely removed. If the follow-up colonoscopy is normal or shows only one or two small tubular adenomas with low-grade dysplasia, then the interval for the subsequent examination should be 5 years.
4. Patients who have more than 10 adenomas at one examination should be examined at a shorter (3 years) interval established by clinical judgment, and the clinician should consider the possibility of an underlying familial syndrome.
5. Patients with sessile adenomas that are removed piecemeal should be considered for follow up at short intervals (2 to 6 months) to verify complete removal. Once complete removal has been established, subsequent surveillance needs to be individualized based on the endoscopist's judgment. Completeness of removal should be based on both endoscopic and pathologic assessments.
6. More intensive surveillance is indicated when the family history may indicate hereditary nonpolyposis colorectal cancer.

#### TABLE 3 Additional Surveillance Considerations

1. The present recommendations assume that colonoscopy is complete to the cecum and that bowel preparation is adequate. A repeat examination should be done if the bowel preparation is not adequate before planning a long-term surveillance program.
2. There is clear evidence that the quality of examinations is highly variable. A continuous quality improvement process is critical to the effective application of colonoscopy in colorectal cancer prevention.
3. A repeat examination is warranted if there is a concern that the polyp is incompletely removed, particularly if it shows high-grade dysplasia.
4. Endoscopists should make clear recommendations to primary care physicians about when the next colonoscopy is indicated.
5. Given the evolving nature of guidelines, it is important that physicians and patients should remain in contact so that surveillance recommendations reflect changes in guidelines. Pending further investigation, performance of fecal occult blood test is discouraged in patients undergoing colonoscopic surveillance.
6. Discontinuation of surveillance colonoscopy should be considered in persons with serious comorbidities with less than 10 years of life expectancy, according to the clinician's judgment.
7. Surveillance guidelines are intended for asymptomatic people. New symptoms may need diagnostic workup.
8. The application of evolving technologies such as chromoendoscopy, magnification endoscopy, narrow-band imaging, and computed tomography colonography are not established for postpolypectomy surveillance at this time.

CA *Cancer J Clin* 2006; 56:143–159 Volume 56 Y Number 3 Y May/June 2006 **145**

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## 6.3. Methodology

In addition to the methodologies described in the General Overview section, CPHHP staff and the medical librarians conducted literature searches using the following resources:

- Pub Med
- Scopus
- Web
- UCHC library catalog

The search terms included: colonoscopy, trends/statistics/numerical data, repeat/multiple, surveillance, insurance claim review, insurance health reimbursement, mass screening economics, utilization, diagnostic tests, neoplasm, secondary screening, and follow up.

## 6.4. Social Impact

### 1. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is utilized by a significant portion of the population.

Nationally, 2.8 percent of the insured population has a colonoscopy in a given year. The percentage of people who need additional colonoscopies in a policy year is estimated to be 2.6 percent of those receiving a colonoscopy in that same year. Out of the 1.2 million insured people in CT, we expect that about 900 will have two or more colonoscopies in 2010.<sup>152</sup>

### 2. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is available to the population, including, but not limited to, coverage under Medicare, or through public programs administered by charities, public schools, the Department of Public Health, municipal health departments or health districts or the Department of Social Services.

Medicare: Part B co-payments apply to screening colonoscopies. The co-payment is 25 percent if the procedure is performed in a hospital outpatient clinic or ambulatory surgery facility. If the screening test results in a biopsy or removal of a lesion or growth, the procedure is considered diagnostic and the Part B deductible is also applied.<sup>153</sup>

Medicaid: Medicaid does not have specific requirements for colonoscopies. The procedure must be medically necessary and follow appropriate medical guidelines. The DSS fee schedule for colonoscopies varies depending on whether the procedure is simply diagnostic, or if biopsy, removal or other medical work is needed. CT Medicaid does not require copayments or coinsurance. The enrolled providers must accept reimbursement as established on the CT Medicaid fee schedules.<sup>154</sup>

The CT Department of Public Health had a Colorectal Cancer Screening Program, run in collaboration with the Community Health Center Association of CT, to provide free colonoscopies for people without health insurance or whose health insurance does not cover colonoscopies. This program ran until June 29, 2009.

### 3. The extent to which insurance coverage is already available for the treatment, service or equipment, supplies or drugs, as applicable.

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<sup>152</sup> See Ingenix report, Appendix II, p.

<sup>153</sup> Medicare Coverage Guidelines for Colorectal Cancer Screening- Colonoscopies (Connecticut

<sup>154</sup> Correspondence with Nina Holmes, CT DSS Medicaid Policy Unit, 11/2/09

In our survey responses from the 7 insurance companies/HMOs domiciled in Connecticut, only one reported that their policies provide the option for large employers to elect to waive co-pays for multiple colonoscopies in one year. That company reported that 28 percent of its group enrollees have this benefit currently. All other insurers/HMOs reported that zero percent of their enrollees currently have this benefit. Based on these responses, it is estimated that 11.4 percent of Connecticut's fully insured residents currently have benefits that meet this proposed mandate.

**4. If the coverage is not generally available, the extent to which such lack of coverage results in persons being unable to obtain necessary health care treatment.**

Based on the fully insured data, it does not appear that the cost-sharing for subsequent colonoscopies is a major barrier to access. It may be a greater impediment in HMO plans that charge a flat co-pay. The revision to the colonoscopy mandate affects so few individuals that it is not expected to change the supply of providers performing colonoscopies or the price of them.<sup>155</sup>

**5. If the coverage is not generally available, the extent to which such a lack of coverage results in unreasonable financial hardships on those persons needing treatment.**

Nationally, the average out-of-pocket payment for individuals that have one colonoscopy is \$175.50, including co-insurance, co-payments and deductible payments. The average additional burden for those who need a second or subsequent colonoscopies in one policy year is estimated to be \$47.50. This is so because these individuals are more likely to have greater overall health expenses and are more likely to have already paid down a larger portion of their total out-of-pocket maximums than those who need only one colonoscopy in a year.<sup>156</sup>

This amount of out-of-pocket expense does not change the average health expense burden for the affected population. However, it should be noted that families with low to middle income who purchase individual health insurance already have a high health expense burden, and any level of additional expense may cause them to avoid or delay needed health care.<sup>157</sup>

**6. The level of public demand and the level of demand from providers for the treatment, service or equipment, supplies or drugs, as applicable.**

Of patients who have a colonoscopy in a given year, approximately 2.6 percent receive more than one. This equates to .07 percent of the insured population. However, for those who meet the ACS/Multi-Society Task Force guidelines for such colonoscopies, the need is significant.<sup>158</sup>

**7. The level of public demand and the level of demand from providers for insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable.**

The study found no published information on the level of demand from providers for the elimination of cost-sharing for second or subsequent colonoscopies in the same policy year.

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<sup>155</sup> See Ingenix report, Appendix II, p. 24.

<sup>156</sup> See CCEA report, Appendix III, p.15.

<sup>157</sup> See CCEA report, Appendix III, p.15.

<sup>158</sup> See CCEA report, Appendix III, p.15.

**8. The likelihood of achieving the objectives of meeting a consumer need as evidenced by the experience of other states.**

33 states mandate coverage for colonoscopies. It is not known if any of these states address the issue of co-pays for second or subsequent colonoscopies in one policy year.<sup>159</sup>

**9. The relevant findings of state agencies or other appropriate public organizations relating to the social impact of the mandated health benefit.**

The CT Department of Public Health has several publications concerning colorectal cancer and the benefit of colonoscopy screening in the prevention and treatment of such cancers.<sup>160 161</sup>

**10. The alternatives to meeting the identified need, including, but not limited to, other treatments, methods or procedures.**

The ACS/Multi-Society Task Force guidelines identify multiple *screening* methods that can be used at intervals ranging from 5-10 years to detect polyps and/or cancer. These include flexible sigmoidoscopy, colonoscopy, double-contrast barium enema and computed tomography colonography. However, where the other three tests indicate positive findings, colonoscopy is the method recommended for follow-up. Additionally, where certain types of polyps have been removed or where colon or rectal cancer has been removed, the guidelines recommend a *surveillance* colonoscopy from 2-6 months after the procedure to remove the polyp or cancer. In the case of rectal cancer, the guidelines indicate that surveillance colonoscopies may be performed at 3-6 month intervals for 2-3 years, for the purpose of identifying local recurrence of the cancer.<sup>162</sup>

**11. Whether the benefit is a medical or broader social need and whether it is consistent with the role of health insurance and the concept of managed care.**

As indicated above, surveillance colonoscopies in accordance with the ACS/Multi-Society Task Force guidelines are medical procedures whose purpose is to verify the presence or absence of polyps or cancer, where these have been previously removed.

**12. The potential social implications of the coverage with respect to the direct or specific creation of a comparable mandated benefit for similar diseases, illnesses, or conditions.**

Co-pays, coinsurance and deductibles are generally considered to be important cost and utilization control tools in health insurance policies. The proposed mandate affects so few insureds that it is not expected to have an impact on the utilization of second or subsequent colonoscopies. If a comparable mandate were to be applied to other procedures or services which are more frequently

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<sup>159</sup> Bunce V, Wieske J. Health Insurance Mandates in the States 2009.

<sup>160</sup> CT DPH. Colorectal Cancer in Connecticut: Facts and Figures. <http://www.ct.gov/dph>. Accessed 12/13/2009.

<sup>161</sup> CT DPH. Connecticut Colorectal Cancer Screening Demonstration Program. [Http://www.ct.gov/dph](http://www.ct.gov/dph). Accessed 12/13/2009.

<sup>162</sup> Supra, fn 3

used, however, the impact on cost and therefore on availability of insurance could be more significant.

**13. The impact of the benefit on the availability of other benefits currently offered.**

It is possible that insurers or employers may look to cut costs or place limits on other services to compensate for the cost of this mandate. However, where subsequent colonoscopies within a policy year are performed in accordance with ACS/Multi-Society Task Force guidelines, they are limited to those considered to be at high risk of developing colorectal cancer or to those who have actually developed colorectal cancer. By ensuring that the colon and rectum are cancer free, it is possible that companies may lower the incidence of colorectal cancers and thus the cost of treating them.

**14. The impact of the benefit as it relates to employers shifting to self-insured plans and the extent to which the benefit is currently being offered by employers with self-insured plans.**

It is not anticipated that employers will shift to self-insured plans as the result of this single proposed mandate. However, employers that look at the cumulative financial effects of mandated benefits in total may look to opt in to self-insured plans.<sup>163</sup>

**15. The impact of making the benefit applicable to the state employee health insurance or health benefits plan.**

The impact of this mandate will be the same for the state employee health plans as for other insured health plans, provided the state plans elect to comply with the mandate even though they are moving to self-funded status.

**16. The extent to which credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community determines the treatment, service or equipment, supplies or drugs, as applicable, to be safe and effective.**

Fourteen million colonoscopies are performed in the United States annually, in a wide variety of settings. The ACS/Multi-Society Task Force guidelines found that colonoscopy with clearing of neoplasms by polypectomy has a significant impact on the incidence of colorectal cancer. However, it has definite limitations and risks. It requires one or more days of dietary preparation and bowel cleansing, a full day dedicated to the procedure and assistance with transportation because sedation is used. It is an invasive procedure that can result in significant harm, including post-polypectomy bleeding and bowel perforation, although this is rare (1/1000). Cardiopulmonary complications such as cardiac arrhythmias and hypotension can occur, usually related to sedation. However it is deemed to be generally safe and is one of the recommended methods for screening for colorectal cancer.<sup>164</sup>

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<sup>163</sup> See Ingenix report, Appendix II, pp.20-21.

<sup>164</sup> *Supra*, fn 3

## 6.5. Financial Impact

- 1. The extent to which the mandated health benefit may increase or decrease the cost of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

This revision to the colonoscopy mandate will affect so few individuals that it is not expected to change either supply of physicians performing colonoscopies or the price of colonoscopies<sup>165</sup>.

- 2. The extent to which the mandated health benefit may increase the appropriate or inappropriate use of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

The change in cost-sharing policy for second and subsequent colonoscopies is not expected to alter patient behavior and utilization.<sup>166</sup> Most people do not want to undergo a colonoscopy once, let alone more than once, and the elimination of co-pays or coinsurance is not expected to induce unnecessary return visits. The mandate may make it possible for those insured families with high health expense burden to obtain the recommended follow-up surveillance recommended by the ACS/Multi-Society Task Force guidelines.

- 3. The extent to which the mandated health benefit may serve as an alternative for more expensive or less expensive treatment, service or equipment, supplies or drugs, as applicable.**

The vast majority of second or subsequent colonoscopies within one year are for the purposes of confirming the success of prior procedures, either polypectomies or bowel resections. While other methods of colorectal viewing are acceptable for screening purposes, the ACS/Multi-Society Task Force guidelines are clear that colonoscopy is the preferred method for such confirmatory procedures.<sup>167</sup>

- 4. The methods that will be implemented to manage the utilization and costs of the mandated health benefit.**

The mandate requires that physicians follow medical guidelines in accordance with the recommendations of the American College of Gastroenterology, after consultation with the American Cancer Society, based on the ages, family histories, and frequencies provided in the recommendations.

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<sup>165</sup> See Ingenix report, Appendix II, p. 24.

<sup>166</sup> See Ingenix report, Appendix II, p. 26.

<sup>167</sup> Levin, B, Lieberman, CS, McFarland, B et al. Screening and Surveillance for the Early Detection of Colorectal Cancer and Adenomatous Polyps, 2008: A Joint Guideline From the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. *CA Cancer J Clin* 2008 58: 130-160.

- 5. The extent to which insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, may be reasonably expected to increase or decrease the insurance premiums and administrative expenses for policyholders.**

Those who undergo more than one colonoscopy in a year tend to have less cost-sharing for the second colonoscopy than the average insured person. They are more likely to have met their deductible and reached their out of pocket maximum. To calculate the lost cost-sharing, we added the total cost-sharing for second and subsequent colonoscopies in each year and divided by total member months. It was less than \$0.01 per insured person per month for each of 2007 and 2008.<sup>168</sup>

- 6. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is more or less expensive than an existing treatment, service or equipment, supplies or drugs, as applicable, that is determined to be equally safe and effective by credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community.**

Per the guidelines of the ACS/Multi-Society Task Force, no other method of colorectal examination is deemed as effective for surveillance purposes.

- 7. The impact of insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, on the total cost of health care, including potential benefits or savings to insurers and employers resulting from prevention or early detection of disease or illness related to such coverage.**

To the extent that second and subsequent colonoscopies help to prevent or treat colorectal cancer, or to prevent its recurrence, overall health insurance costs may be reduced. If elimination of co-pays, coinsurance and deductibles for such procedures results in more patients receiving recommended follow-up colonoscopies on a timely basis, then savings may occur.

- 8. The impact of the mandated health care benefit on the cost of health care for small employers, as defined in section 38a-564 of the general statutes, and for employers other than small employers.**

This mandate is expected to have roughly the same effect on small groups as large. That is, the difference in the effect on small vs. large groups is not expected to be large enough to calculate.<sup>169</sup>

- 9. The impact of the mandated health benefit on cost-shifting between private and public payers of health care coverage and on the overall cost of the health care delivery system in the state.**

Due to the low incidence of second or subsequent colonoscopies in the same policy year, this mandate is not expected to have an impact on cost-shifting between private and public payers. The

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<sup>168</sup> See Ingenix report, Appendix II, p.17.

<sup>169</sup> See Ingenix report, Appendix II, p.19.

actuarial analysis estimated the lost cost-sharing as a result of the elimination of cost-sharing on second and subsequent colonoscopies in the same year to be less than \$0.01 PMPM.

# Part 7. Wellness Incentives

Review and Evaluation of Public Act 09-188

An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage Section 13

Requirement that Issuers of Group Health Insurance Policies Offer Insureds a Health Behavior Wellness, Maintenance or Improvement Program That Offers a Reward or Incentive for Participation

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## Part 7. Contents

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## 7.1. Executive Summary

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage (Sections 13, requiring issuers of group health insurance policies to offer a wellness program that provides a reward or incentive for participation). The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of Connecticut Insurance Department and the University of Connecticut Center for Public Health and Health Policy.

The Committee requested the analysis be based on the following amendment to the bill:

Require that group health insurance policies delivered, issued for delivery, renewed, amended or continued in Connecticut shall offer a reasonably designed health behavior wellness, maintenance or improvement program that allows for a reward, a health spending account contribution, a reduction in premiums or reduced medical, prescription drug or equipment copayment, coinsurance or deductible, or a combination of these incentives, for participation in such program.

Any such incentive or reward shall not exceed twenty percent of the paid premiums and shall comply with all nondiscrimination requirements under the Health Insurance Portability and Accountability Act of 1996.

The wellness mandate requires health insurers to offer groups a health insurance plan that contains a wellness benefit that includes financial incentives. The group is not required to accept it. For those groups that do not choose the plan with wellness and incentives, there is no additional cost.

For those groups that do accept it, however, the cost will not necessarily be incidental, especially because the reductions to medical costs for wellness programs typically take multiple years to emerge and are least in year one. The mandate does not define wellness programs. Some relatively simple health intervention programs could be coupled with incentives for a low cost to the employer group that chooses such a wellness approach.

The cost of most wellness/incentives programs may be zero to three percent; some programs, however, can be more costly. It is expected that the payback in reduced medical cost will not occur in year one, but reductions to medical cost will grow over several years.

A survey of seven insurers and managed care organizations domiciled in Connecticut that provide group coverage for approximately 1.2 million Connecticut residents showed a wide range of offered wellness program benefits. Most insurers offer wellness programs, and most offer at least some wellness programs with financial incentives. The extent to which employers enroll in wellness programs, making them available to their employees, is unknown.

## 7.2. Background

### *Legislation*

The Chairs of the Insurance and Real Estate Committee of the Connecticut General Assembly (the Committee) directed the Connecticut Insurance Department (CID) to review the proposed health benefits contained in Public Act 09-188, An Act Concerning Wellness Programs and Expansion of Health Insurance Coverage (Sections 13, requiring issuers of group health insurance policies to offer a wellness program that provides a reward or incentive for participation). The review was conducted following the requirements stipulated under Public Act 09-179. This review was a collaborative effort of CID and the University of Connecticut Center for Public Health and Health Policy (CPHHP).

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Any such incentive or reward shall not exceed twenty percent of the paid premiums and shall comply with all nondiscrimination requirements under the Health Insurance Portability and Accountability Act of 1996 (HIPAA).

### *Health Behavior Wellness, Maintenance or Improvement Programs*

Health Behavior Wellness, Maintenance or Improvement Programs (wellness programs) are frequently offered as part of employee benefits packages and included in insurance plans. They may also be sponsored by employers as a means of encouraging healthy behaviors among employees and increasing productivity. Wellness programs may also be community-based, i.e., sponsored by municipalities or community agencies in efforts to reach the entire population in a community, including the uninsured, unemployed, and those without an employer-sponsored wellness program. Thus, wellness programs operate across a continuum of sectors throughout society.

There is a broad range of programs and services that may be referred to as “wellness programs” or part of a “wellness program”. In order to provide a meaningful analysis, some definition of wellness must be determined as well as the components that constitute a wellness program. To help us define wellness, we first consider the concept of prevention.

The concept that drives well-designed and articulated wellness programs is prevention. Prevention is commonly divided into three dimensions: primary, secondary, and tertiary. Primary prevention seeks to prevent injury and disease from occurring, secondary prevention seeks early detection of disease, and tertiary prevention seeks to limit progression of an acquired disease. Wellness programs address all of the prevention dimensions. For example, diet and exercise counseling can prevent overweight and obesity before it occurs (primary prevention), blood pressure screening can detect hypertension at an early stage when it can still be reversed through behavioral interventions such as lowering sodium intake (secondary prevention), and disease management programs can limit the symptoms of an established disease, allowing higher functioning and work productivity (tertiary prevention).

For the purposes of this analysis, we limit wellness by defining it as a program or service that provides primary prevention of a disease or condition or screening that provides early detection of a disease or condition at a point where the disease/condition can be ameliorated by behavioral intervention. We also include disease management programs because they have a history of being evaluated as wellness programs and are often implemented through care coordination activities. This definition excludes screening activities that primarily identify established disease requiring treatment by a medical professional such as cancer screenings. While extremely important for early detection of cancers and generally included in classical definitions of secondary prevention, there are evidence-based guidelines for their delivery, and such screenings take place in the normal course of appropriate and effective medical care, that is, outside the domain of a wellness program. This does not preclude cancer or depression screenings, for example, from being included as part of a comprehensive wellness program or assessment tool such as a health risk assessment, however, a program that only included a screening for a specific disease would not be considered a wellness program for the purposes of this analysis. Wellness programs may include single or multiple components regardless of whether they are offered as part of health insurance coverage, through an employer, or through a community agency, including:

*Behavior change support, including:*

- Tobacco cessation
- Weight management
- Substance abuse counseling
- Increasing physical activity
- Managing stress

*Encouraging physical fitness through:*

- Workplace or community-based fitness centers
- Walking and/or running clubs
- Workplace bike racks and bike safety instruction
- Mind/body classes (yoga, tai chi)
- Fitness classes (aerobics, dance, etc.)
- Team sports (volleyball, basketball, softball)

*Home and workplace safety, including:*

- Back-injury prevention and training
- Ergonomic education
- Hand-tool safety
- Fire safety

*Health education, awareness, and support, such as:*

- Nutrition information and dieting support
- Prenatal care
- Work/life balance
- Elder care
- Cancer survivor support groups

*Health screenings for early identification of conditions/disease, for example:*

- Blood pressure
- Diabetes
- Cholesterol
- Body-fat percentage
- Posture screening, spinal analysis

*Disease management programs, for example:*

- Asthma
- Diabetes
- Depression
- Cancer
- Obesity
- Hypertension

Wellness programs that include a tangible financial incentive for participation are less common than those that do not, but over the past decade there has been an increase in the use of financial incentives to encourage participation in wellness programs. Participation in wellness programs is often low, and financial incentives or other types of rewards can increase participation. Few programs for behavioral modification such as weight loss or increasing exercise have shown sustained behavior modification by enrollees over the long term, including those with financial incentives. Some employer-based programs have shown success, but most of these are designed for the specific industry or workplace and tailored to specific characteristics of the employee population.<sup>170</sup> There is little evidence-based research on programs that are successful across worksites.

The proposed health benefit for financial incentives for wellness programs in Public Act 09-188 applies only to group policies, is consistent with HIPAA regulations, and requires insurance plans to offer a wellness program with incentives as an option for purchasers/employers. The purchaser/employer is not required to purchase any wellness program from the insurer or managed care organization.

### 7.3. Methodology

CPHHP staff consulted with medical librarians at the Lyman Maynard Stowe Library at the UConn Health Center (UCHC). Medical librarians conducted literature searches related to wellness programs and wellness programs with financial incentives or rewards for participation. Search terms included “Wellness Programs”; “Health Promotion”; “Health Promotion/economics”; “Health Behavior”; “Financial Incentive”; “Employee Incentive Plans”; and “Motivation”.

Resources searched include:

- Pubmed
- Scopus
- MarketResearch.com
- UptoDate
- Web Search: Google, Bing
- Lexis Nexis Academic.

CPHHP staff conducted independent literature searches using the Cochrane Review, Pubmed, Google, and Google Scholar using similar search terms used by the UCHC medical librarians, including wellness programs, incentives, rewards, and various combinations of these and similar terms guided by the language in Public Act 09-179 and Public Act 09-188. Where available, articles published in peer-reviewed journals are cited to support the analysis. Other sources of information may also be cited in the absence of peer-reviewed journal articles. Content from such sources may or may not be based on scientific evidence.

CPHHP staff consulted with clinical faculty and staff from the University of Connecticut School of Medicine on matters pertaining to medical standards of care, current and traditional practices, and

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<sup>170</sup> Sutherland K, Christianson JB, Leatherman S. 2008. Impact of targeted financial incentives on personal health behavior: A review of the literature. *Medical Care Research and Review* 65(6) Supplement: 36S-78S.

evidence-based medicine related to the proposed benefit. Additionally, practitioners in the community were consulted for additional and/or specialized information.

Additional information was gathered through telephone and e-mail inquiries to appropriate state, federal, municipal, and non-profit entities and from internet sources such as the State of Connecticut website, Medicare website, and community-based organizations.

A survey of insurance companies and managed care organizations (MCOs) domiciled in Connecticut was developed and administered with the assistance of the CID and input from Ingenix Consulting and the UConn Connecticut Center for Economic Analysis (CCEA). Seven insurers and MCOs completed the survey.

CPHHP and the CID contracted with Ingenix Consulting to provide actuarial analysis of the proposed mandate; CPHHP consulted with CCEA to provide economic analysis of the proposed mandate.

## IV. Social Impact

### 1. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is utilized by a significant portion of the population.

Accurate and specific data about the number of persons participating in a wellness program with financial incentives in Connecticut is not currently available. Our survey of seven insurers/MCOs domiciled in Connecticut that provide group coverage for approximately 1.2 million Connecticut residents showed a wide range of offered wellness program benefits. Most insurers offer wellness programs, and most offer at least some wellness programs with financial incentives.

An estimate based on a national survey states that more than half of all companies offer some sort of wellness program or activity for their employees.<sup>171</sup> For more detailed discussion, please see Appendix C: UConn Center for Economic Analysis Economic Report, pages 16-18.

### 2. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is available to the population, including, but not limited to, coverage under Medicare, or through public programs administered by charities, public schools, the Department of Public Health, municipal health departments or health districts or the Department of Social Services.

#### *Medicare*

Medicare does not offer any wellness programs with financial incentives.<sup>172</sup> Medicare does offer some preventive care, including a “Welcome to Medicare” physical, diabetes screening, and cardiovascular screening. Medicare also covers smoking cessation counseling, but standard cost-

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<sup>171</sup> Holland K. 2007. Wellness programs try to be welcoming, too. The New York Times. July 22, 2007. Available at: [http://www.nytimes.com/2007/07/22/business/yourmoney/22mgmt.html?\\_r=1&scp=1&sq=wellness%20programs&st=cse](http://www.nytimes.com/2007/07/22/business/yourmoney/22mgmt.html?_r=1&scp=1&sq=wellness%20programs&st=cse). Accessed November 25, 2009.

<sup>172</sup> Available at: [www.medicare.gov/coverage](http://www.medicare.gov/coverage). Accessed October 6, 2009.

sharing applies. Medicare periodically conducts demonstration projects (pilot studies) of wellness programs, but such projects are by design limited in geographical reach and not available to all beneficiaries. Medicare Advantage plans provide access to care coordination, disease management programs, and chronic care and wellness programs that are not offered through traditional Medicare. Fifteen percent of Connecticut Medicare enrollees were enrolled in a Medicare Advantage Plan in 2009.<sup>173</sup>

### *Public Programs Administered by Charities*

No information was found regarding the availability of wellness programs with financial incentives through public programs administered by charities.

### *Public Programs Administered by Public Schools*

In 2008, 89 percent of Connecticut public schools offered wellness programs for their employees.<sup>174</sup> It is unknown the degree to which such wellness programs include financial incentives. Public schools may provide physical space and support services for community-based wellness programs, however it is unknown the degree to which this occurs and if any financial incentive is in place for any such community-based wellness programs. Public school curricula include health, nutrition, and physical education for students, which in a broad sense could be considered wellness programs and might include incentives/rewards but are outside the scope of this report.

### *The Department of Public Health*

Some information was found regarding the availability of wellness programs with financial incentives through the Connecticut Department of Public Health. Notably, the DPH Nutrition, Physical Activity & Obesity Prevention Program hosts a farmer's market for employees and visitors during the summer. Some financial incentives ("door prizes" or drawings for things such as cookbooks) are offered and the farmer's market is highly popular and well-utilized by employees.<sup>175</sup> The DPH website includes information about several school-based and community-based wellness programs [e.g., "Food and Fitness in Connecticut Primary Schools", which ended in May 2009; and, "Improving the Health and Educational Outcomes for Young People", which supports implementation of Coordinated School Health (CSH), Promotion of Physical Activity, Nutrition, and Tobacco-Use Prevention (PANT), HIV prevention education, and the Youth Risk Behavior Survey [also known as the Connecticut School Health Survey (CSHS).] It is unclear whether any of these programs include financial incentives for participation or documented success in improving health status or health habits.

### *Municipal Health Departments*

No information was found regarding the availability of wellness programs with financial incentives through local and municipal health departments in Connecticut. Some support for community-

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173 Mathematica Policy Research for the Kaiser Family Foundation. Available at:

[http://www.healthaffairs.org/healthpolicybriefs/brief\\_images/1-2-full.jpg](http://www.healthaffairs.org/healthpolicybriefs/brief_images/1-2-full.jpg). Accessed November 28, 2009.

174 Newsom-Stewart M. 2009. Health services program information survey; summary of results. Education Connection. Available at: [http://www.educationconnection.org/new/pdfs/sde\\_hssurvey4year.pdf](http://www.educationconnection.org/new/pdfs/sde_hssurvey4year.pdf). Accessed November 25, 2008.

175 Connecticut Department of Public Health. Nutrition, Physical Activity, and Obesity Prevention Program. Farmer's Market 2007: Capitol Avenue Complex Participant Survey. Available at:

[http://www.ct.gov/dph/lib/dph/2007\\_farmersmarketparticipantsurveyreport.pdf](http://www.ct.gov/dph/lib/dph/2007_farmersmarketparticipantsurveyreport.pdf). Accessed November 25, 2009.

based wellness programs is possible, however the degree to which any such wellness programs include financial incentives for participation or documented success in improving health status or health habits is not known.

*The Department of Social Services*

Connecticut’s Medicaid program provides coverage for preventive care, but does not offer any type of incentives, financial or otherwise, to persons with Medicaid coverage.<sup>176</sup> The Community Based Services to Families Program provides “prevention, intervention and treatment services to individuals and families” but does not provide financial incentives for participation in prevention.<sup>177</sup>

**3. The extent to which insurance coverage is already available for the treatment, service or equipment, supplies or drugs, as applicable.**

Our survey of seven insurers/MCOs domiciled in Connecticut that provide group coverage for approximately 1.2 million Connecticut residents showed a wide range of offered wellness program benefits. Most insurers offer wellness programs, and most offer at least some wellness programs with financial incentives. The extent to which employers enroll in wellness programs, making them available to their employees, is unknown.

**Table 7.1: Connecticut insurers offering wellness programs and wellness programs with financial ncentives**

	Percent of group & ASO plans offered with a wellness program	Percent of group and ASO plans offered with wellness program with financial incentive
Insurer 1	<10	0
Insurer 2	100	100
Insurer 3	100	100
Insurer 4	*	17
Insurer 5	100	21
Insurer 6	<1	<1
Insurer 7	77-96**	77-96**

\*Percentage of employers enrolling in wellness programs unknown but insurer offers various wellness programs.

\*\*Group plans only. ASO plan information not available

**4. If the coverage is not generally available, the extent to which such lack of coverage results in persons being unable to obtain necessary health care treatment.**

The lack of a wellness program should not result in persons being unable to obtain necessary medical treatment. Wellness programs often encourage persons to access screening tests for early diagnosis of disease or identify increased risk for disease, behavior modification and support programs for healthy living, and other preventive services. As such, lack of wellness programs might result in persons being unable to obtain or be unaware of activities that may help them in their efforts to maintain good health and lead a healthy lifestyle.

The lack of a wellness program that includes financial incentives, per se, does not result in persons being unable to obtain necessary treatment. Financial incentives can influence health behaviors.

<sup>176</sup> Correspondence from Ginny Mahoney, DSS Medical Policy Consultant, 10/6/2009.

<sup>177</sup> Available at: <http://www.ct.gov/dss/cwp/view.asp?a=2353&q=305156>. Accessed November 28, 2009.

Thus, lack of financial incentives may result in fewer people accessing wellness services and participating in wellness activities than if incentives were in place, although this area of research has not been well studied.

**5. If the coverage is not generally available, the extent to which such a lack of coverage results in unreasonable financial hardships on those persons needing treatment.**

The burden on families from this mandate is not immediately evident. The mandate requires insurers to offer a plan with financial incentives. It does not require any firms to purchase these plans. Based on regional figures, financial incentives for wellness lag behind wellness programs for popularity and their impact on long term health status has yet to be unequivocally established. Wellness incentives associated with lifestyle and prevention measures may take a long time to save enough in averted costs to pay for themselves. The ultimate benefit to these programs may accrue to public programs like Medicare as people age. The cost trade-off is people live longer, requiring more routine care, but avert costly episodes of acute care.

For the individual, the greatest benefit may be the increased productivity and quality of life. As health conditions improve, individuals may reduce out-of-pocket expenditures. It also is possible, however, that increased co-payments from more testing and health care visits associated with increased levels of ‘well care’ may offset these financial gains. If a wellness program has incentives that sufficiently encourage individuals to seek and receive effective preventive care, and such preventive care results in early detection of disease, the unreasonable financial hardships for the individual and their family that may result from later diagnosis of a serious illness or disease can be avoided.

The actuarial analysis suggests premiums may increase zero to three percent depending on whether enrollees elect for the wellness program with financial incentives. A three percent premium increase per policy is an annual increase of \$292 for group plans. Employees typical pay about 22 percent of their health care premium. This results in an annual out-of-pocket payment of \$66 per policy per year. This estimate does not include any offsetting financial incentives enrollees might receive as it is unclear what the nature of these incentives might be.

Please see Appendix C: UConn Center for Economic Analysis Report, page 16-18 for further discussion of the financial burden of wellness programs on families and individuals.

**6. The level of public demand and the level of demand from providers for the treatment, service or equipment, supplies or drugs, as applicable.**

There is a lack of published findings documenting the public demand for incentives for wellness programs, but there is assumed to be a range of public demand for such services. Some percentage of the population will already be very engaged in being active, eating well, and monitoring their health status, and a wellness program will only reinforce and enhance their health. This group is likely to favor financial incentives since they are already engaged in activities likely to be required to achieve the financial incentive. On the other end of the spectrum is a percentage of the population who may not participate in wellness programs regardless of the incentive structure implemented. The remaining percentage of the population may be largest group in most sectors of society: people who

are at various stages of readiness to improve their health given the right type of wellness program, support, and incentives.

There is also a lack of published findings documenting the demand from providers for incentives for wellness programs. It is assumed that most health care providers would support initiatives that help their patients and clients achieve improved health status, maintain healthy living habits, limit progression of established disease and manage disease effectively. Primary care providers, preventive medicine specialists, and occupational medicine specialists are perhaps most interested in prevention and keeping patients healthy. Primary care providers may be best positioned to provide wellness and preventive services due to the long-term nature of their relationships with patients and delivery of health care in ambulatory settings. Thus, medical providers, particularly primary care providers, are likely to support programs that encourage their clients and patients to live active healthy lives, including wellness programs that include incentives.

#### **7. The level of public demand and the level of demand from providers for insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable.**

There is a lack of published findings related to the public demand and demand from providers for required offering of wellness programs with incentives by insurers. Well-informed, health conscious segments of the public and providers are likely to demand access to wellness programs, including wellness programs with financial incentives, regardless of whether they are employer-based or provided through insurance coverage. The concept of prevention and wellness seems well-understood but programs are poorly designed or poorly executed in general. Additionally, prevention and wellness services lack the urgency of treatment of disease or injury, thus the vast majority of health spending is directed toward treatment which reflects public and provider demand.

#### **8. The likelihood of achieving the objectives of meeting a consumer need as evidenced by the experience of other states.**

As of August 2008, no states require insurance plans to offer incentives for participation in wellness programs.<sup>178</sup>

Section 3239 of the New York State Insurance Law, added through passage of S. 4675/A. 10884 (signed by the Governor on September 28, 2008), *permits* “insurers, Article 43 corporations, HMOs, and municipal cooperative health benefits plans to offer wellness programs designed to promote health and prevent disease,” including programs that “contain rewards and incentives for participation.” It is not known the degree to which wellness programs with rewards/incentives are offered in New York or level of consumer demand for or participation in such programs. It is also not known if New York State Insurance Law prohibited wellness programs with incentives prior to the effective date of this legislation or how this or previous legislation interacts with federal HIPAA and ERISA laws.

#### **9. The relevant findings of state agencies or other appropriate public organizations relating to the social impact of the mandated health benefit.**

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<sup>178</sup> NAIC Compendium of State Laws on Insurance Topics. National Association of Insurance Commissioners.

The State of Pennsylvania Department of Health published “Overview of Worksite Wellness & Its Value” in July 2009. This publication includes information about health promotion and wellness programs that offer financial incentives and describes the impact of such programs. For example, a Johnson and Johnson wellness program includes \$500 in benefits credit; a Caterpillar, Inc. health and wellness program with “strong incentives”; and a Motorola program that provides a \$240 “Wellness Reimbursement Benefit.”<sup>179</sup> All of these programs provided return on investment (ROI) or other positive financial outcome.<sup>180</sup>

The State of Oklahoma offers financial incentives to state employees for health promotion and wellness activities through its “OKHealth Program”.<sup>181</sup> Rhode Island, South Dakota, Tennessee, Texas, and Wyoming also have health promotion and wellness programs with financial incentives for state employees.<sup>182,183,184,185,186</sup> (Other states may have similar programs). No studies or analyses prior to these programs’ implementation or formal evaluations or assessments of social impact, costs and benefits, participation rates, or other data were found.

California studied a proposed mandate for tobacco cessation services that included waived deductibles and copayments. California found that:<sup>187</sup>

In terms of use of tobacco services

- Persons who have full coverage (100 percent of costs associated with tobacco cessation medications and counseling without a deductible, copayment, or coinsurance) for nicotine replacement therapy (NRT) and/or bupropion are more likely to use these tobacco cessation medications than are persons who do not have coverage for tobacco cessation services.
- The evidence of the effect of full coverage for tobacco cessation counseling relative to no coverage on obtaining counseling is ambiguous.
- Persons who have full coverage for NRT and/or counseling are more likely to use these tobacco cessation services than are persons who have partial coverage for them.

Abstinence from smoking

- Full coverage for tobacco cessation counseling and pharmacotherapy is associated with improved abstinence from smoking relative to no coverage for tobacco cessation services.

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<sup>179</sup> Pennsylvania Department of Health. 2009. Overview of Worksite Wellness & Its Value. Available at: [http://www.dsf.health.state.pa.us/health/lib/health/familyhealth/worksite\\_wellness\\_and\\_their\\_value.pdf](http://www.dsf.health.state.pa.us/health/lib/health/familyhealth/worksite_wellness_and_their_value.pdf). Accessed November 27, 2009.

<sup>180</sup> Id.

<sup>181</sup> State of Oklahoma, Employee Benefits Council. OKHealth Program. Available at: <http://www.ebc.state.ok.us/en/OKHealth/Pages/OKHealth.aspx>. Accessed November 27, 2009.

<sup>182</sup> State of Rhode Island. State Employee Wellness Initiative. Available at: <http://www.wellness.ri.gov/>. Accessed November 27, 2009.

<sup>183</sup> State of Wyoming. “Healthier WY” Program Overview. Available at: <http://www.healthierwy.org/overview.shtml>. Accessed November 27, 2009.

<sup>184</sup> State of South Dakota. “HealthySD Program Overview. Available at: <https://healthyemployees.sd.gov/overview.aspx>. Accessed November 27, 2009.

<sup>185</sup> State of Tennessee. Department of Finance and Administration. Benefits Administration. Available at: <http://www.tn.gov/finance/ins/sewp.html>. Accessed December 16, 2009.

<sup>186</sup> State of Texas. Employee Assistance and Wellness Plan Checklist. Available at: <http://www.dshs.state.tx.us/wellness/resource/sabody.pdf>. Accessed December 16, 2009.

<sup>187</sup> California Health Benefits Review Program (CHBRP). 2007. *Analysis of Senate Bill 24: Tobacco Cessation*. Report to California State Legislature. Oakland, CA: CHBRP. 07-04.

- The evidence of the effect of full coverage for tobacco cessation counseling and pharmacotherapy relative to partial coverage on abstinence from smoking is ambiguous.

Maine studied a proposed mandate for insurance coverage of nutritional wellness and prevention, which included nutritional supplements and over-the-counter drugs.<sup>188</sup> Other than insurance coverage for these types of products, no discussion of any financial incentives for purchasing them was found in the report.

Wisconsin's Insurance Commissioner reviewed the social and financial impact of AB 362 in 2003, which would prohibit health plans from applying cost sharing provisions, such as co-payments, deductibles, and co-insurance, of their plans to prescription medications used in the treatment of diabetes.<sup>189</sup> Many diabetes disease management programs include this type of benefit and excluding prescription medications from cost sharing could certainly be considered a financial incentive. However, the Wisconsin analysis does not seem to portray the contents of the bill as a wellness program. Neither "wellness program" nor "incentive" appears in the Insurance Commissioner's report.

Internet searches of and/or phone inquiries with states that that have or had an established process for studying mandated health insurance benefits, with a relatively large number of mandated health benefits, or located in the Northeast found no other existing state studies, evaluations, assessments, or reviews of mandated insurer offering of wellness programs with financial incentives for group plans. States searched included Arkansas, California, Colorado, Indiana, Louisiana, Maine, Maryland, Massachusetts, Minnesota, New Jersey, New York, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia, Washington, and Wisconsin.

## **10. The alternatives to meeting the identified need, including, but not limited to, other treatments, methods or procedures.**

One alternative to requiring group health insurance plans to offer wellness programs that include financial incentives participation is to require that group insurance plans offer wellness programs without requiring financial incentives for participation. Most insurers already include some sort of wellness program in at least some of the insurance plans offered. However, incentives have the potential to increase participation rates and success rates for improving health status of and adoption of healthy behaviors by participants.

Other alternatives to insurance-policy based wellness programs are support for employer-based and community-based health promotion and wellness programs. Many employers are using health promotion and wellness programs, some with incentives, to control health care costs and insurance premiums, as well as increase productivity. Research demonstrates some employer-based programs that have been successful in improving health status and quality of life for participants.<sup>190-191</sup>

<sup>188</sup> Novak D, Hooper M. 2007. A Report to the Joint Standing Committee on Banking and Insurance of the 123rd Maine Legislature: Review and Evaluation of LD 1667, An Act To Require Health Insurance to Provide Coverage for Nutritional Wellness and Prevention. Available at: [http://www.maine.gov/pfr/legislative/documents/LD1667\\_Report\\_Final.pdf](http://www.maine.gov/pfr/legislative/documents/LD1667_Report_Final.pdf). Accessed December 9, 2009.

<sup>189</sup> Gomez J. 2003. Letter to State Senator Panzer and State Representative Gard. Social and financial impact report – Assembly Bill 362. Available at: <http://oci.wi.gov/finimpct/sfiab362.pdf>. Accessed December 9, 2009.

<sup>190</sup> Butcher L. 2006. Financial incentives increasingly promote healthy lifestyles. *Managed Care* 15 (4): 51-52.

Community-based wellness and prevention programs have achieved excellent health outcomes in many areas of the country.<sup>192</sup> Support for employer-based and community-based wellness programs may reach a wider population than the population covered by group health insurance plans, such as the elderly with traditional Medicare coverage, the uninsured, those with individual health insurance policies, people covered by Medicaid, and people in self-insured plans.

**11. Whether the benefit is a medical or broader social need and whether it is consistent with the role of health insurance and the concept of managed care.**

Traditionally, wellness programs have been included in insurance products offered by insurers and managed care organizations either by the company itself or through subcontracts (e.g., chronic disease management programs managed by independent companies that serve insureds covered by the insurer). Employers also sponsor wellness programs (that are detached from health insurance plans) for their employees and employees' families, often in efforts to improve work productivity, and many employer-sponsored wellness programs have experienced some success in terms of employee participation, improved health status, worker productivity, and returns on investment. Additionally, some community-based programs sponsored by municipalities or private organizations can be considered wellness programs. As such, persuasive arguments can be made that wellness programs should be included as medical benefits as well as considered in the realm of broader social needs, particularly as they relate to employers. Despite the frequency of wellness programs sponsored by employers, municipalities, and community-based organizations, it would not seem inappropriate to consider health promotion and wellness programs that provide a financial incentive for participants as meeting a medical need and being consistent with the role of health insurance and the concept of managed care.

**12. The potential social implications of the coverage with respect to the direct or specific creation of a comparable mandated benefit for similar diseases, illnesses, or conditions.**

The current proposed mandate would apply only to group insurance plans, thus it is possible that a comparable mandated benefit might be created that is applicable to individual insurance plans if it complied with any applicable HIPAA or ERISA regulations.

It is conceivable that additional financial incentives payable to enrollees could be mandated for group or individual insurance plans as long as they complied with HIPAA regulations. For instance, financial incentives could be offered *independent of wellness programs* for reaching health goals (e.g., lowering blood pressure) or engaging in healthy behaviors (e.g., quitting smoking), or waived cost sharing of certain classes of drugs might be considered as evidenced by the example from Wisconsin.

**13. The impact of the benefit on the availability of other benefits currently offered.**

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<sup>191</sup> Stein AD, Khoury Shakour S, Zuidema RA. 2000. Financial incentives, participation in employer-sponsored health promotion, and changes in employee health and productivity: HealthPlus health quotient program. *Journal of Occupational and Environmental Medicine* 42 (12): 1148-1155.

<sup>192</sup> Zaza S, Briss PA, Harris KW, eds. 2005. *The Guide to Community Preventive Services: What Works to Promote Health*. Oxford University Press: New York, NY.

Insurers and MCOs may look to cut costs through elimination of certain products and services or by placing limits on other products and services. However, the availability of any benefits to be restricted may be limited. Existing benefits may be administratively costly to restrict and insurers may be contractually obligated to provide them. Additionally, many of the benefits that could be targets for elimination are included in plans for competitive advantage.

#### **14. The impact of the benefit as it relates to employers shifting to self-insured plans and the extent to which the benefit is currently being offered by employers with self-insured plans.**

It is not anticipated that employers will shift to self-insured plans as a result of this proposed mandate. Since the proposed benefit is a mandated offering, the onus is on health insurers to offer the benefit. Employers are not required to select plans that include health promotion and wellness programs, regardless of whether or not a financial incentive is included. Because the benefit is a financial incentive, overall costs of insured plans would likely increase as a result of the proposed benefit; such costs may be passed on to employers.

Employers cognizant of the cumulative financial effects of mandated benefits and large enough to assume the risk of employee health care costs may look to opt in to self-insured plans. Conversely, employers may view the proposed mandate in a positive light since the mandate provides an incentive for employees to improve health status and decrease unhealthy behaviors, which can increase worker productivity.

Health promotion and wellness programs with financial incentives are not uncommon among employers with self-insured plans.<sup>193,194</sup>

#### **15. The impact of making the benefit applicable to the state employee health insurance or health benefits plan.**

State employees are included in the group health insurance numbers reported by insurers in the insurer survey. Group insurance plans in Connecticut are frequently offered with wellness plans; some include wellness plans with financial incentives. The social impact of the proposed benefit on the state employee health insurance or health benefits plan would depend on the degree to which the state chose to offer wellness plans with financial incentives to state employees, the number of state employees participating in the wellness program(s), and the availability of wellness programs that are effective in achieving and sustaining improved health status, functioning and productivity. (The financial impact would depend on these factors as well as the source of funding for the financial incentive and the types of activities included in the wellness plans.)

#### **16. The extent to which credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community determines the**

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<sup>193</sup> Draper DA, Tynan A, Christianson JB. 2008. Health and wellness: the shift from managing illness to promoting health. Issue Brief. Center for Studying Health System Change Volume 121: 1-4. Available at: <http://www.hschange.com/CONTENT/989/>. Accessed November 27, 2009.

<sup>194</sup> Hall B. 2008. Health incentives: the science and art of motivating healthy behaviors. *Benefits Quarterly* 24(2): 12-22.

**treatment, service or equipment, supplies or drugs, as applicable, to be safe and effective.**

There appear to be few if any safety risks to wellness programs that include financial incentives and no research was found that studied the safety risks of wellness programs with incentives. It is conceivable that participants may avoid disclosing a health issue or avoid necessary treatment if such treatment would result in ineligibility for the incentive. Program design should provide measures that limit this safety risk. Wellness programs that include exercise or increasing physical activity could result in increased musculoskeletal or sports-related injuries. No published literature was found related to injuries associated with wellness programs.

There is a relative wealth of published information about the effectiveness of wellness program incentives. The authors of a recent review article concluded that “financial incentives, even relatively small incentives, can influence individuals’ health-related behaviors.”<sup>195</sup> The article reviewed studies related to reducing risky personal health behavior and increasing patient use of preventive services. Another review article of the effect of economic incentives on preventive behavior found that economic incentives are effective in the short run for simple preventive care (e.g., immunizations or distinct well-defined behavioral goals), but it is not clear what size of incentive is needed to yield a major sustained effect for a complex behavioral change such as weight control or quitting smoking.<sup>196</sup> A study of promotion of healthy weight at small and medium-sized worksites found that incentives (such as days of paid leave for participation) were associated with higher participation rates.<sup>197</sup>

Despite the review articles mentioned, much work remains to be done in assessing the effectiveness of wellness programs that include financial incentives. There is evidence that incentives can change behaviors, but the sustainability of behavior change is a concern. Practicing healthy living habits during participation in a wellness program can improve short-term health status that is reversed if habits are not sustained when wellness program participation wanes. A randomized trial of financial incentives for weight loss confirmed this finding.<sup>198</sup> As described previously, effective wellness programs with incentives that motivate healthy living and improved health status that is sustained beyond enrollment in the program that are successful in more than a single industry or population sector need to be developed to ensure that incentives and wellness programs are available to all who would benefit from them.

## 7.5. Financial Impact

### 1. The extent to which the mandated health benefit may increase or decrease the cost of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.

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<sup>195</sup> Sutherland K, Christianson JB, Leatherman, S. 2008. Impact of targeted financial incentives on personal health behavior: a review of the literature. *Medical Care Research and Review* 65: 36S-78S.

<sup>196</sup> Kane RL, Johnson PE, Town RJ, et al. 2004. A structured review of the effect of economic incentives on consumers’ preventive behavior. *American Journal of Preventive Medicine* 27(4): 327-352.

<sup>197</sup> Hersey J, Williams-Piehota P, Sparling PB, et al. 2008. Promising practices in promotion of healthy weight at small and medium-sized US worksites. *Preventing Chronic Disease* 5(4): 1-11.

<sup>198</sup> Volpp KG, John LK, Troxel AB, et al. 2008. Financial incentive-based approaches for weight loss: a randomized trial. *JAMA* 300 (22): 2631-2637.

The wellness and incentives mandate will create a market opportunity for wellness program vendors with simple, effective, and low-cost approaches to meeting the conditions of this mandate. Most of the wellness programs that are described and reported in medical literature tend to be successful ones. Thus there is a reporting bias toward those programs that actually work. In all wellness programs, the savings tend to be observed more often in later years than early on. The calculation of savings varies widely, and those vendors that sell such programs sometimes market them using a projected return on investment that is highly attractive but overstated.

**2. The extent to which the mandated health benefit may increase the appropriate or inappropriate use of the treatment, service or equipment, supplies or drugs, as applicable, over the next five years.**

Employer-sponsored wellness programs with financial incentives can have high rates of participation. For example, 90 percent of Johnson & Johnson employees participate in its “Total Health” program, which offers a \$500 annual incentive.<sup>199</sup> An important note is that these benefits may or may not be offered as part of the firm’s health insurance plan, thus the proposed mandate may or may not achieve its intended purpose. Firms may offer these benefits directly or through a contract with a firm specializing in these types of programs. Employers have an incentive to promote wellness among their employees that goes beyond reducing health care costs. According to the Kaiser Family Foundation/Health Research and Education Trust Employer Health Benefits Survey (KFF/HRET), 61 percent of small firms and 80 percent of large firms believe that wellness benefits increase worker productivity.<sup>200</sup> Among all firms, 35 percent reported that improving worker productivity or reducing absenteeism was the main reason they had wellness programs. In contrast, 10 percent of firms had wellness programs to reduce health care costs.<sup>201</sup> The most popular reason for having wellness programs (36 percent of all firms) was the health insurance plan included a wellness program.<sup>202</sup> These findings suggest wellness programs serve multiple purposes.

**3. The extent to which the mandated health benefit may serve as an alternative for more expensive or less expensive treatment, service or equipment, supplies or drugs, as applicable.**

Wellness programs (with and without financial incentives) are implemented in the hope that they will eventually lead to a future reduction in medical cost. The theory is that by detecting and managing medical problems upstream, the later effects of deteriorating health and the higher cost of more serious medical care can be prevented downstream. Nonetheless, there is not yet a great deal of strong scientific evidence that wellness programs reduce medical costs by more than the administrative cost of the program itself in the one to three year term. Demonstrable medical savings may require a longer term time horizon to emerge. There is some evidence of long-term health and cost impact of wellness and health promotion programs, including those with incentives,

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<sup>199</sup> Buto K. 2009. Wellness & Prevention: Johnson & Johnson Perspective. Presentation at the “Workplace Wellness Programs, Healthy Behaviors and Health Reform Briefing”. Alliance for Health Reform, December 7, 2009. Available at: [http://allhealth.org/briefing\\_detail.asp?bi=174](http://allhealth.org/briefing_detail.asp?bi=174). Accessed December 8, 2009.

<sup>200</sup> The Kaiser Family Foundation and Health Research and Education Trust. 2009. Employer Health Benefits 2009 Annual Survey.

<sup>201</sup> Id.

<sup>202</sup> Id.

for employers that have made long-term commitments to employee wellness (e.g., Johnson & Johnson,<sup>203</sup> Safeway,<sup>204</sup> and Pitney Bowes<sup>205</sup>)

A well managed and effective wellness program can complement a group insurance plan so as to avoid sickness and maintain good health. It can also help the chronically ill avoid complications and the premature deterioration of their health. For further discussion, please see Appendix B: Ingenix Consulting Actuarial Report, pages 12-13 and 17-18; and Appendix C: UConn Center for Economic Analysis, pages 16-18.

#### **4. The methods that will be implemented to manage the utilization and costs of the mandated health benefit.**

It is anticipated that the costs of the incentives will be included in premium prices offered to employers. Thus, employers who conclude the added expense of a wellness program with incentives is a valuable and affordable benefit will have the option to purchase it and offer it to their employees. A recent employer survey that included questions related to wellness programs found that lower-cost wellness programs that provide education, health assessment, or options such as on-site fitness centers or gym membership discounts were found to be much more common than more comprehensive, higher cost wellness programs.<sup>206</sup>

#### **5. The extent to which insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, may be reasonably expected to increase or decrease the insurance premiums and administrative expenses for policyholders.**

The wellness mandate requires health insurers to offer groups a health insurance plan that contains a wellness benefit that includes financial incentives. The group is not required to accept it. For those groups that do not choose the plan with wellness and incentives, there is no additional monetary cost (assuming insurers do not spread any additional costs associated with the wellness program/incentives across all plans, including those plans that do not include a wellness program), albeit future benefits that may be generated by the wellness program and incentives are foregone.

For those groups that do accept it, however, the cost will not necessarily be incidental, especially because the reductions to medical costs for wellness programs typically take multiple years to emerge and are least in year one. The mandate does not define wellness programs. Some relatively simple health intervention programs could be coupled with incentives for a low cost to the employer group that chooses such a wellness approach.

The cost of most wellness/incentives programs may be zero to three percent; some programs, however, can be more costly. It is expected that the payback in reduced medical cost will not occur in year one, but reductions to medical cost will grow over several years.

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<sup>203</sup> Ozminkowski RJ, Ling D, Goetzel RZ, et al. 2002. Long-term impact of Johnson & Johnson's health & wellness program on health care utilization and expenditures. *Journal of Occupational and Environmental Medicine* 44:21-29.

<sup>204</sup> Burd SA. "How Safeway is Cutting Health-Care Costs." *The Wall Street Journal*. June 12, 2009.

<sup>205</sup> Mahoney JJ. 2005. Reducing patient drug acquisition costs can lower diabetes health claims. *American Journal of Managed Care* 11(5 Suppl): S170-176.

<sup>206</sup> KFF/HRET, *Employer Health Benefits*, 2009, p. 202.

Please see Appendix B: Ingenix Consulting Actuarial Report, pages 17-18 & 35 for further discussion.

**6. The extent to which the treatment, service or equipment, supplies or drugs, as applicable, is more or less expensive than an existing treatment, service or equipment, supplies or drugs, as applicable, that is determined to be equally safe and effective by credible scientific evidence published in peer-reviewed medical literature generally recognized by the relevant medical community.**

It is highly likely that, due to the financial incentives required, wellness programs with financial incentives are more expensive than wellness programs in general. We are unable to estimate with any precision the extent to which this is the case because of the extreme variability in design and implementation of wellness programs, incentives, employer and employee participation, and conflicting evidence related to estimated and realized cost savings of wellness programs. As noted above, costs associated with incentives will not necessarily be incidental and medical cost savings that might offset such costs, if realized, are not likely to emerge for several years.

**7. The impact of insurance coverage for the treatment, service or equipment, supplies or drugs, as applicable, on the total cost of health care, including potential benefits or savings to insurers and employers resulting from prevention or early detection of disease or illness related to such coverage.**

The potential benefits or savings to insurers and employers from wellness programs arise from disease prevention, early detection of disease or illness, and effective management of symptoms of disease. Many employers have recognized the potential benefits of wellness programs for improved productivity in addition to lowered health care costs. Companies have found that, while early detection may cost \$15,000 in clinical costs, the health care costs for treating acute disease are much higher, averaging \$40,000 per incidence.<sup>207</sup> Johnson & Johnson reported that it spends \$4.5 million each year on its comprehensive preventive health care programs; without these programs it projects medical bills would be at least \$13 million higher.<sup>208</sup> General Mills realized significant gains from its wellness programs. Between 2005 and 2007, the percentage change in employees with a BMI greater than or equal to 30 fell from 23 percent in 2005 to 12 percent in 2007 and 6 percent in 2008. Those with two or more health risks declined from 68 percent to 29 percent from 2005 to 2008.<sup>209</sup> NASA found that while the productivity of non-exercising office workers decreased 50 percent during the final two hours of the work day, exercisers worked at full efficiency all day. This amounts to a 12.5 percent difference in productivity between the two groups.<sup>210</sup>

IBM suggests that its wellness program results in decreased absenteeism among employees compared to peer industries in the U.S.<sup>211</sup>

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207 Sullivan S. 2009. Wellness programs. Available at: <http://www.e-hresources.com/Articles/Nov2.htm>. Accessed December 14, 2009.  
208 Id.

209 Heinen L, Darling H. 2009. Addressing obesity in the workplace: the role of employers, *Milbank Quarterly* 87(1): 102-22.

210 Fielding JE. Getting smarter and maybe wiser. *American Journal of Health Promotion* 11 (2): 107-108.

211 Available at: [http://www.ibm.com/ibm/responsibility/s4\\_2.shtml](http://www.ibm.com/ibm/responsibility/s4_2.shtml). Accessed December 3, 2009.

**Table 7.2: Lost workdays (rate per 100 employees)**

Year	2000	2001	2002	2003	2004	2005
IBM	0.36	0.36	0.23	0.35	0.22	0.22
Peer/All Industry	1.35	0.80	0.80	1.30	0.90	n/a

Specific studies of wellness programs that include financial incentives have not been as well studied as wellness programs in general, particularly the long-term benefits or cost savings that may accrue in excess of the value of the financial incentive. The positive results in this regard evidenced by the experience of several large employers is noted above; however, it is highly likely that the results of large employers with a deep commitment to and large investment in employee wellness will not be experienced across all sectors of employers. For fully insured employers that do not have the resources to develop and implement their own wellness program, a wellness program with a financial incentive available through their insurer may bridge a gap. The long-term savings resulting from prevention or early detection of disease or illness, if realized, may accrue to the insurer (if the insured remains covered by the insurer long term), the employer (if the employee remains employed by the employer long term), Medicare or other insurers that would otherwise pay the health care costs of the avoided illness/disease, and the individual in the form of increased quality of life and economic opportunity.

**8. The impact of the mandated health care benefit on the cost of health care for small employers, as defined in section 38a-564 of the general statutes, and for employers other than small employers.**

No published literature was found regarding the effect of mandated offering of wellness programs with financial incentives on the cost of health care for small employers. Small employers may be more sensitive to premium increases than larger employers, and premium increases are thought to cause small employers to drop coverage or increase employee cost-sharing. In recent years, larger employers are implementing similar strategies in an attempt to deal with rising costs of employee health insurance. The cost of wellness programs with incentives typically range from zero to three percent of premium costs, and can be higher depending on the complexity of the program structure.

Since this is a mandated offering benefit, small and other than small employers may not enroll in a wellness program with a financial incentives if it is viewed as too expensive, non-beneficial to employees, does not result in improved productivity, or if in the employer’s view employees would not participate in the wellness program.

**9. The impact of the mandated health benefit on cost-shifting between private and public payers of health care coverage and on the overall cost of the health care delivery system in the state.**

Since the proposed mandate is a mandated offer of a benefit, it is not expected to have an impact on cost-shifting between private and public payers of health care coverage. Its effect on the overall cost of health care in Connecticut is unknown.

Appendix I  
Letter from Committee on Insurance and Real Estate,  
dated July 31, 2009

State of Connecticut  
GENERAL ASSEMBLY

Senator Joseph J. Crisco  
CO-CHAIRMAN

Senator Joan V. Hatley, Vice-Chair  
Senator Sam S.F. Pangalos, Ranking Member



Representative Steve Fontana  
CO-CHAIRMAN

Representative Robert W. Magias, Vice-Chair  
Representative Tony Danza, Ranking Member

INSURANCE AND REAL ESTATE COMMITTEE

July 31, 2009

Thomas R. Sullivan, Commissioner  
State of Connecticut Insurance Department  
P O Box 816  
Hartford, CT 06141-0516

INSURANCE DEPARTMENT  
STATE OF CONNECTICUT  
2009 AUG -14, A 1 59

Dear Commissioner Sullivan,

Pursuant to Section 1(c) of Public Act 09-179, we respectfully request that the Insurance Department, through its statutory designees, review several particular proposed health benefits

Specifically, we request that you seek the review of the proposed health benefits contained in Public Act 09-188, which the Governor vetoed.

- an increase in coverage for ostomy appliances and supplies
- an expansion of coverage to include prosthetic limbs
- an extension of coverage for hearing aids for children up to age 19
- an extension of coverage for wigs to people who suffer from alopecia areata
- an expansion of coverage for human leukocyte antigen testing
- an expansion of coverage for colonoscopies
- a requirement that insurance plans offer wellness incentives

Thank you for your attention to our request. We look forward to hearing from you and/or your designees this coming winter.

Best Regards,

Senator Joseph J. Crisco, Jr.  
Co-Chair, Insurance & Real Estate Committee

Representative Steve Fontana  
Co-Chair, Insurance & Real Estate Committee

# Appendix II. Actuarial Report

**INGENIX CONSULTING—**  
ACTUARIAL REPORT For The STATE OF CT  
On SEVEN HEALTH INSURANCE BENEFIT MANDATES  
COVERED By PUBLIC ACTS NUMBER 09-179 and 09-188

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B.1 Five Year Medical Cost Projection

## INTRODUCTION:

This memo serves to record the findings of Ingenix Consulting (IC) pursuant to our engagement to provide actuarial services to the State of CT in conjunction with Substitute House Bill No. 5021, Public Acts 09-179 and 09-188. This report is intended to communicate the results of our work. Our earlier report, which was delivered on November 23, was a preliminary draft intended to communicate preliminary results and serve as a tool for discussion purposes.

We are pleased to have been chosen to serve the state of CT in this valuable project. We have used a team approach. Daniel Bailey managed the actuarial work for the project and worked on most of the mandates. Earl Hoffman and his staff carried out the actuarial work on hearing aids. James Drennan provided guidance and acted as consultant and peer reviewer. Dr. Thomas Knabel, MD, and his clinical staff were responsible for clinical guidance and support. Mary Canillas, FSA, MAAA carried out the data research that involved our extensive commercial health claims databases.

IC was retained by the state to assess seven health insurance benefit mandates. In this document, we will present our findings and conclusions relating to the actuarial evaluation of each mandate with respect to cost, socio-economic impact, and effect on the finance and delivery system.

We will present our results in several steps in this report. First, we will do so in summary form, in plain English, and subsequently, we will layer in some of the additional data and calculations that support our findings.

### IC looked at the following seven mandates:

1. **Ostomy Supplies and Appliances:** Same as current mandate except policy year maximum is increased from \$1k to \$5k per person. Mandate requires coverage of ostomy supplies and appliances to those with colostomy, ileostomy, or urostomy. Maximum must be separate from maximum for durable medical equipment (DME).
2. **Prosthetics:** **New** mandate. Defined as an artificial limb to replace a hand, arm, foot, or leg. This mandate covers new prosthetic limbs as well as the repair and replacement of existing prosthetic devices. Must cover benefit at least at Medicare level. No limit to cost. Member cost-sharing applies to device as for all other benefits. Physician determines medical necessity. Insurer may require prior authorization. Since the prescribing physician determines the device that is most appropriate for the patient, this seems to imply that the physician makes the medical necessity decision, not the insurer. Device cannot be considered DME.
3. **Hearing Aids:** Same as current mandate, which is through age 12, but this revision extends coverage to those 13 through 18 years of age. Limit of \$1,000 every two years will continue to be permitted—this is \$1,000 in total, not per ear. Hearing aids shall be considered durable medical equipment (DME).
4. **Wigs for Alopecia Areata:** Revised mandate adds coverage of a wig or other hair prosthesis for those with this medical condition, up to \$350 yearly. (Other mandate revisions merely clarify the language of the existing mandate, but do not change the existing mandate.)

5. **HLA (Human or Histocompatibility Leukocyte Antigen) Test:** **New** mandate. Potential bone marrow donor’s policy must cover the cost of initial HLA testing, plus “costs arising from it,” such as subsequent site infection that might occur in very rare instances. Individual must register as donor with National Bone Marrow transplant registry. The HLA test covered is the initial screening of six loci—A, B, and DR antigens. Our interpretation is that this mandate is intended to encourage unrelated potential donors to sign up for the registry. It does not cover the subsequent cost of compatibility testing for loci C, DQ, or DP, or confirmatory testing, which is paid by the insurer of the patient recipient.
6. **Colonoscopy:** Revision to existing mandate such that, when more than one colonoscopy is performed on an individual in a policy year, there is no member cost-sharing—copays or coinsurance—applied to the second and subsequent colonoscopies. The deductible for a high deductible health plan, however, is not waived.
7. **Wellness:** **New** mandate. Group insurers must offer a health insurance plan with a wellness benefit that includes financial incentives as part of the policy. Incentives and rewards must be consistent with HIPAA non-discrimination requirements, and incentive value must be less than 20% of the total annual paid premiums. Member must verify their program participation with the insurer. Groups are not required to purchase a plan with wellness and incentives; they may refuse.

Note: The first six mandates apply to group and individual coverage; the seventh applies to group only. All seven mandates apply to comprehensive health insurance plans such as Health Maintenance Organizations (HMO) and Preferred Provider Organizations (PPO). Only the fourth mandate—wigs for alopecia areata—applies to limited medical benefit plans as well. This is shown the table below:

A	B	C	D	E	F	G
Mandate	Brief Description	All Comp Health Plans	LIMITED BEN PLANS	All GROUP Plans	All Individual PLANS	Groups May Refuse Offered Mandate
1	Ostomy	YES		YES	YES	
2	Prosthetics	YES		YES	YES	
3	Hearing Aids	YES		YES	YES	
4	Wigs for Alopecia Areata	YES	YES	YES	YES	
5	HLA Testing	YES		YES	YES	
6	Colonoscopy	YES		YES	YES	
7	Wellness	YES		YES		YES

Explanation by Column Header:

- C All Comprehensive Health Plans include Health Maintenance Organizations (HMOs), Preferred Provider Organizations (PPOs), and other Indemnity type health insurance plans.
- D Limited Benefit Plans are not Comprehensive Health Plans--they pay a fraction of a normal benefit.
- E Group Plans are offered to an employee and dependents through their employer. The insurance contract is with the employer.
- F Individual Plans cover an individual, couple, or family. The insurance contract is with the individual and does not involve an employer.
- G Mandates 1 to 6 must be written into the insurance contract in such a way that insurers must cover the mandate in all employer group health insurance contracts. Mandate 7 requires that insurers offer the mandate, but groups may decline to purchase it as part of their health insurance plan.

### **IC Review of Cost of Mandates—Two Components:**

With respect to the cost of the benefit mandates, we examined two pieces—medical and administrative cost, with an emphasis on the former since it involves the greater portion of overall cost. We looked at the annual cost in 2010 dollars using current utilization and medical cost levels. We also projected costs forward for the next four years and factored in expected changes in the finance and delivery system caused by the mandates, as well as the effect of trend on unit cost and utilization.

We looked at IC's internal commercial health claims data for 2007 and 2008, as well as various outside data sources. We also referred to the survey information provided by CT carriers as requested by the state.

First, we will simply present a summary of the expected 2010 medical cost without detail or long-range projections. Later in this report, we will elaborate further on the medical cost of each mandate, and we will also include socio-economic consequences and ramifications on the finance and delivery system, including the effect on health insurance cost and availability.

### **EXECUTIVE SUMMARY OF 2010 MEDICAL COST ASSESSMENT:**

Note: In the estimates below, we have attempted to use a range of projected cost estimates as well as a point estimate in some cases. We do not mean to imply a false sense of precision by so doing. We want to make it clear that some aspects of the calculations may involve actuarial judgment. The actual 2010 cost may be greater or less than the expected values we have projected.

We have used the term *de minimis* to describe the projected incremental cost of any mandate that we expect to be less than \$0.05 per member per month (PMPM) when the cost is spread to all the insured people covered by the plan. We also use the terms per person per month and per insured person per month to mean the same thing as PMPM.

1. Mandate one involves increasing the annual limit on ostomy supplies and appliances from one thousand to five thousand dollars. This is a very low cost mandate revision relative to the cost of other health insurance mandates in general. The incremental medical cost is expected to be *de minimis*. When the cost is spread to all insureds, this incremental cost is expected to be about one cent per person per month. As a percentage of total medical cost, this represents an incremental cost of less than 0.01%. The expected range is \$0.00 to \$0.03 PMPM.

2. Mandate two requires the provision of a prosthetic device to amputees who have either upper limb loss in the form of a lost arm or hand, or lower limb loss of a foot or leg. It also requires repair and replacement of existing prosthetic devices.

It is expected that the medical cost of the prosthetics mandate will be about 0.1% of the total cost of health care in year one. This amounts to about \$0.25 to \$0.45 per insured person per month. As an upper bound example, even if everyone with an amputation obtains a prosthetic device at an average cost of \$10,000, the cost would be 0.35% or less. In subsequent years, if everyone who undergoes an amputation during the year receives a device, then the cost will be about 0.03% per year—around \$0.10 PMPM. It is not expected

that everyone who needs a prosthetic device will obtain it in year one; thus it is likely that year one will cost much less than 0.35% and later years could be more than 0.03%. Prosthetic devices last several years or more, so repair and replacement will also add to the small cost of this mandate in future years. We expect some pent-up demand to be satisfied primarily in year one but also in year two and perhaps beyond.

The mandate does not limit the number of devices an individual may acquire in a specified time period, but this is not expected to materially alter utilization. Insurers may seek to control cost by contracting with preferred suppliers.

3. Mandate three is a simple revision to the current hearing aid mandate in CT that requires hearing aids for children through age 12. The revised mandate requires them through age 18. The expected medical cost is relatively small—about \$0.06 per person per month. It represents an increment of about 0.03% to overall medical cost. The expected 2010 cost range is \$0.04 to \$0.12 PMPM. There may also be some pent-up demand for this benefit mostly in year one.

4. Mandate four involves the provision of wigs for people diagnosed with baldness due to alopecia areata but not androgenic alopecia. Relatively few cases of alopecia areata are known to exist in the under-65 insured population, and even fewer occur anew each year. Alopecia areata is rare and the hair loss due to it is often only temporary. This mandate is expected to add only a penny or two to the per person per month cost of medical care. This is *de minimis* and represents an incremental addition of approximately 0.01% to overall medical cost. As a range, we expect \$0.00 to \$0.04 PMPM. Unlike the other mandates, this one also applies to limited benefit plans, which are lower in cost and cover only a fraction of the benefit covered by more comprehensive plans. This does not change the one or two cent *de minimis* PMPM cost for limited benefit plans. It will increase the overall percentage of cost, however, for limited benefit plans only, since the cost of a limited benefit plan is generally less than that of a comprehensive benefit plan.

5. Mandate five requires insurers to cover the cost of HLA testing, registration testing, for those who choose to sign up, as donors, for the national bone marrow registry. The expected 2010 cost is about \$0.00 to \$0.10 per person per month. This is about 0.01% of total medical cost. It is more difficult to project the 2010 cost of this mandate because the increase in utilization is unknown. An effective public awareness campaign could help encourage potential donors to sign up. One of the factors in determining and controlling the ultimate cost of this mandate will be the unit cost of HLA testing. Insurers may seek to negotiate the price of this testing with providers. It is reported that in July 2009 the National Marrow Donor Program (NMDP) began to waive the fee for an initial HLA screening for those that sign up for the Be The Match Registry. Although some may argue that it would be problematic to mandate that insurers pay for a medical test that is currently free to the potential registry donor, others could counter-argue that the NMDP could use funds earmarked for registration testing to pay for other aspects of their charitable programs.

The registration testing is low or intermediate resolution testing that establishes whether the donor is a possible match. If so, further higher resolution testing is conducted to determine compatibility. This will be discussed further later in this report. HLA testing consists of initial screening and secondary compatibility and confirmatory testing. Essentially, there are three aspects to the medical cost increase:

- Increased initial HLA testing,

- Increased post-initial compatibility and confirmatory HLA testing, and
- Increased bone marrow transplants (BMT) performed. There are only about 4,000 allogeneic BMTs performed annually in the US at a cost of \$150,000 to \$200,000 each. Allogeneic BMTs involve a donor other than the patient/recipient. Autologous BMTs use the patient's own bone marrow or stem cells.

6. Mandate six is a minor modification to an existing mandate that already requires health insurers to cover colonoscopies. The revision would prevent insurers from charging cost-sharing (in the form of coinsurance or copays) to the individual when undergoing a second or subsequent colonoscopy in a given policy year. Of those who have a colonoscopy in an insured population, our data indicate that about 2.6% have more than one in the same year for any reason. The amount of copays and coinsurance that is lost on the second and subsequent colonoscopies represents only 0.2% of the total cost-sharing for colonoscopies. The lost cost-sharing is less than one cent per person per month. This benefit change may require insurers to modify their claim adjudication systems, however, and that will come with a small administrative cost that will be discussed later in this report. The mandate requires that the number of colonoscopies be counted on a policy year basis. A policy year runs from a group or individual's initial effective date (or renewal date) to the end of their policy year. This is different than a calendar year. A policy year basis means that if a group's renewal date is 7/1/2010, for example, then the counting period begins 7/1/2010 and ends 6/30/2011.

7. Mandate seven is a new mandate requiring health insurers to offer groups a health insurance plan that contains a wellness benefit that includes financial incentives. This mandate is unlike the prior six because the insurer is required to offer the plan, but **the group is not required to accept it.** For those groups that do not choose the plan with wellness and incentives, there is **no** additional cost.

For those groups that do accept it, however, the cost will not necessarily be incidental, especially because the reductions to medical costs for wellness programs typically take multiple years to emerge and are least in year one. The mandate does not define wellness programs. Some relatively simple health intervention programs could be coupled with incentives for a low cost to the employer group that chooses such a wellness approach.

The cost of most wellness/incentives programs may be 0% to 3%; some programs, however, can be more costly. It is expected that the payback in reduced medical cost will not occur in year one, but reductions to medical cost will grow over several years.

**SUMMARY OF EXPECTED MEDICAL COSTS OF MANDATES IN 2010**

1.	\$0.01 PMPM	less than 0.01%
2.	\$0.35 "	0.1%
3.	\$0.06 "	0.02%
4.	\$0.02 "	less than 0.01%
5.	\$0.06 "	0.02%
6.	\$0.01 "	less than 0.01%
7.	0% to 3%, depending on the complexity of the wellness/incentive program.	

Subtotal of first 6: \$0.51 PMPM, which is about 0.17% of medical cost.

A more appropriate range of medical cost for the six would be \$0.25 to \$1.00 PMPM. In terms of three scenarios, low, medium, and high, \$0.30 PMPM is our low estimate and \$0.80 PMPM is the high estimate. The cost estimate for the medium scenario is \$0.51 PMPM.

In calculating the percentage of overall medical cost, we used a denominator of **\$300** PMPM for all calculations.

### **ELABORATION ON THE SEVEN MANDATES:**

#### **COMMENTARY ON ADMINISTRATIVE COST (ADMIN):**

Any change in health benefits resulting from the mandates will need to be addressed by the health insurers. The mandates will necessitate changes in various operational and technological processes, such as premium billing and claims payments systems. Health insurers will need to configure benefit systems to handle the required benefit changes. They may also need to notify members or policy-holders of the changes and perhaps revise marketing and sales material. Even for a mandate whose medical cost is *de minimis*, there may still be an associated one-time administrative (admin) cost involved in implementation. This one-time admin cost is separate from the ongoing admin cost that occurs in subsequent years. Most health insurance companies, HMOs, and third party administrators have become more adept with the operational aspects of benefit changes, although some systems and companies may accommodate change more easily. The systems modifications associated with a benefit change, such as increasing an annual benefit maximum for ostomy, or increasing the maximum age for hearing aid eligibility, or removing the cost-sharing from second and subsequent colonoscopies, should all be straightforward at this point in time. The same is true for the systems changes involved with payment for prosthetics, wigs for alopecia areata, and HLA testing.

The year one admin cost is estimated to cost less than 0.02% of the total medical cost in the case of each of the first six mandates. For all six mandates combined, the year one admin cost is not expected to exceed 0.06% of the total medical cost, and the cost is expected to be less in later years. As a range, this total admin is about \$0.12 to \$0.25 PMPM.

It is possible that the mandates may reduce some minor existing administrative cost that insurers now bear as a result of claim denials and appeals in conjunction with services pertaining to the first six mandates. We have not included any such reductions to admin cost in the range above.

In addition to admin, insurers build a profit charge into their premiums in order to cover their cost of capital and assure their financial security. In the case of for-profit insurers, their profits also benefit their shareholders. We use the term retention to describe admin plus profit, which is all non-medical cost.

The vast majority of the incremental expense for the first six mandates is medical cost. With the wellness and incentives benefit mandate, however, the cost will not be a medical claim expense, but rather, an administrative one.

The admin cost of the seventh mandate should be noted here, since it is potentially much greater than the other mandates. Mandate seven involves wellness and incentives, and it

could involve more administrative cost than the other six mandates, depending on the complexity of the wellness/incentive program itself. The wellness incentives require a process by which the benefit is administered and managed. The insurer must verify the member's participation in the wellness program in order to validate the member's eligibility for the financial incentive. This will require the implementation of an internal operational process. It will also necessitate the deployment of control checks not unlike those used to detect fraud and abuse. Once the wellness program is in place, there will be continued admin cost associated with the ongoing administration of the wellness program.

A comprehensive wellness program, with a multi-faceted package approach, could cost substantially more than a simple one. Some insurers may choose to contract with an outside vendor to handle part or the entire wellness/incentives program as a turn-key arrangement. The cost would be a fixed fee, usually on a PEPM basis (Per Employee Per Month), since vendors of programs, such as wellness programs, often charge on this basis. This cost itself will depend on the complexity of the wellness program. Programs can range in cost from \$3 PEPM to as much as \$25 PEPM. Workplace wellness programs generally apply to adults, since their medical costs are more manageable than those of children. On a PMPM basis, however, the cost is roughly half of what it is on a PEPM basis. Thus, \$3 to \$25 PEPM is roughly equivalent to \$1.50 to \$12.50 PMPM. The simple reason that the PMPM cost basis is about half of the PEPM is that there are roughly twice as many members as employees when the employees' dependents are taken into consideration.

As it is currently written, even a simple low-cost program will satisfy the seventh mandate.

On average, the portion of the health insurance premium dollar that is assumed to apply to administrative cost, excluding profit, is approximately as follows:

**Admin as Percentage of Total Premium**

Individual	17% to 24%
Small Group	13% to 18%
Large Group	10% to 15%

This is reasonably consistent with the retention percentages provided by the CT DOI based on 2010 CT HMO filings.

This will generally vary by plus or minus a few percent depending on the insurer. As medical costs increase, particularly as more services are rendered and claims are paid, admin cost also tends to increase. Over time, however, as medical claim cost increases at a faster rate (medical CPI) than admin cost (CPI), admin as a percentage of the premium dollar should decrease. The effect of this differential increase is mitigated somewhat by the effect of benefit buy-downs, but it is not entirely eliminated.

**SUMMARY OF EXPECTED TOTAL COSTS OF MANDATES IN 2010**

For 2010 medical cost we used a projected range of \$0.25 to \$1.00 PMPM, and a point estimate of \$0.51 PMPM for a medium-cost scenario. For admin, we assumed a range of \$0.15 to \$0.24 PMPM for the first six mandates, with a point estimate of \$0.18. For total retention, we estimate \$0.21, which is admin plus profit. This yields a total cost of about \$0.72 PMPM. For future calculations later in this report, we have used 0.3% of premium as the incremental cost of the first six mandates, which is slightly conservative.

## **EXPLANATION OF THE MEDICAL ASPECTS OF THE MANDATES:**

- 1. Ostomy Supplies:** This mandate affects only those with a colostomy, ileostomy, or urostomy. Ostomy supplies are used by the patient in conjunction with the elimination of bodily waste. For these three different types of ostomates, their need for supplies and their consumption rates differ. Ostomy supplies and appliances consist primarily of either a one-piece pouch with attached wafer or two-piece pouch and separate wafer. Technically, the wafer itself is an “appliance.” For simplicity, we will use only the term supplies here. There are also numerous ancillary supplies used in conjunction with these three ostomies. There are about four dozen different HCPCS codes that apply to supplies. Ileostomates and urostomates consume supplies at a faster rate than colostomates. There may be individuals with both a urostomy and either a colostomy or ileostomy. Urostomies are not temporary. Ileostomies are rarely temporary. As many as 40% of colostomies, however, are temporary for about two to five months, often following a colon resection. There are various reasons why some ostomates may consume supplies at a faster rate than others. The presence of a fistula at the stoma may exacerbate need. In our research, we spoke with an ostomy nurse who cited the alkalinity and hardness of effluent or stool as factors that affect individual consumption rates. Hygiene dictates changing ostomy supplies at an appropriate frequency. Those who cannot afford an adequate number of supplies tend to withdraw from social contact, live a less active lifestyle, leave the workforce, or never re-enter it.
- 2. Prosthetics:** In this mandate, major limb loss is defined as the loss of a hand, arm, foot, or leg, but not a finger or toe. At the recommendation of their physician, an amputee may be fitted with a prosthetic device. There are several reasons why an individual may need a prosthetic device ranging from birth defect to accident to surgical amputation as a result of illness. Over 90% of all surgical amputations involve lower limbs and are classified as below the knee or above. These are most often for dysvascular causes, that is, for reasons that involve poor blood circulation to the lower extremities. Some lower limb amputees may not have the desire and strength to adapt to an artificial leg, and consequently they will choose to remain in a wheelchair. In terms of cost, upper limb devices tend to be more expensive since sophisticated models may involve microprocessor-enabled functionality for the closing of fingers and movement of wrist, elbow, or shoulder. One problem with artificial legs is that they require a considerable expenditure of patient energy to use—much more than one’s own leg. One advantage of the newer artificial legs with microprocessors is that they require less energy to operate—those amputees who were accustomed to a more active lifestyle or employment are better equipped to resume it with such a device.
- 3. Hearing Aids:** Hearing aids usually cost more than \$1,000; in fact, they usually cost more than \$1,500 per ear. Children may outgrow them as their craniums grow. Thus they need to be replaced periodically. Most of this cranial growth occurs prior to the onset of puberty. Hearing loss in children is generally detected prior to the age of 13. There will be fewer new cases of hearing loss reported between 13 through 18 compared with 0 through 12. A much higher rate of hearing loss is reported in the elderly population. However, for a child, the reduction or loss of hearing can interfere with learning and social development.

4. Wigs for Alopecia Areata: This auto-immune condition may cause hair loss as small as a dime-sized patch and as large as all the hair on one's head. The latter is *alopecia totalis*. In the case of *alopecia universalis*, all the hair on one's body disappears—this is extremely rare. The loss of hair on one's head, especially if only a patch, may be temporary only, but for some, this can be an embarrassing condition that affects their mental health and social interactions. Near-total loss of head hair is usually accommodated by shaving the remaining hair and providing a full wig. Loss of a patch may require a partial wig. The hair loss experienced by some may be so limited that it can be covered by combing over the affected patch.
5. HLA Testing: In order to determine whether a potential donor is a suitable match for an unrelated patient in need of a bone marrow transplant, a staged series of genetic tests must be performed. It often begins with a cheek swabbing and may involve blood collection. The registration testing is low or intermediate resolution testing of the A, B, and DR loci. The molecular testing technology itself has evolved so much that the procedure codes used to bill for these tests are currently undergoing revision. Experts report that it has been easier to find matches for those of European descent than those of other races and ancestry.

In addition to initial testing, there may be higher resolution secondary molecular testing of the additional loci C, DQ, and possibly DP, to determine compatibility. Before the bone marrow is transplanted to the patient, confirmatory testing must also be carried out. One expert with whom I spoke explained that the cost of the secondary and confirmatory testing is generally paid by the patient's insurance, not the donor's.

According to the National Bone Marrow Donor Transplant Link, the cost of donor testing, if not covered by insurance, "may range from \$10,000 to \$25,000." This is due to the large number of potential donors that may need to be tested before a suitable match is found.

If a match is found between the patient recipient and a donor, the collection of marrow is not a simple matter. There are two approaches, and both involve recovery and loss of work time. For this reason, not everyone will choose to sign up for the bone marrow registry. Since there are lives that could be saved with BMTs for those patients who currently need them and cannot find a donor, there is a social need to encourage donation. As mentioned, this need is less for those of European ancestry because there are more such donors in the registry and because there are international registries that may be accessed. According to the national marrow donor program (NMDP), more than 10,000 children and adults with life-threatening diseases could benefit from a marrow or blood cell transplant each year. Those with leukemia, lymphomas, and other blood cancers constitute about 72% of the transplants facilitated by the NMDP. BMTs are relatively new, but so was blood donation at one time, but we now have an effective institution and mechanism for the donation of blood and distribution to those who need it. Bone marrow donation is at the same stage of its evolution today that blood donation once was.

In July 2009, the Bone Marrow Donor Registry began to offer free initial HLA test screening for potential unrelated donors that sign up for the registry. If that is the case, it is possible that the HLA Test mandate may cause insurers to be billed for a medical service that is currently free—the initial HLA testing. If the recipient is insured,

we expect that their insurance will pay for any subsequent stage higher resolution screening that may need to be done to establish compatibility and confirm the match.

The mandate specifies that HLA testing is covered “for A, B, and DR antigens for utilization in bone marrow transplants.” The testing of the three loci suffices if the potential donor is related to the patient (recipient). If the potential donor is unrelated, however, other loci may need to be tested; these loci are C, DQ, and possibly DP. Again, these test costs are paid by the recipient’s insurance, not the donor’s.

6. Colonoscopy; cost-sharing for second and subsequent colonoscopies: The vast majority of those who need two or more colonoscopies in a policy year do so at their doctor’s insistence because of the presence of colon cancer or pre-cancerous polyps that already required a polypectomy. One study estimated that roughly 4% of those who require two or more colonoscopies in a year do so because their preparation and evacuation was inadequate. These same individuals, however, do not fare much better in subsequent attempts at the same procedure. Colonoscopy is a highly effective screening method for colon cancer. Second-look colonoscopies are occasionally required. The mandate requires that physicians follow medical guidelines in accordance with the recommendations of the American College of Gastroenterology, after consultation with the American Cancer Society, based on the ages, family histories, and frequencies provided in the recommendations.
7. Wellness: Wellness programs are designed to maintain or improve employee health before problems occur. There are many types of wellness programs spanning the gamut from simple, easy, and low-effort to approaches that are much more complicated, costly, and time and labor-intensive. A distinction should be made between the wellness benefits that are intrinsic to most health plans today and workplace wellness programs. Wellness programs and workplace wellness programs are not exactly the same. There has been a great deal of information published over the past quarter century on workplace wellness programs. These programs are generally examined with respect to the extent they reduce medical costs and improve health. More recently, studies have examined their effect on employee productivity with respect to job performance, absenteeism, and presenteeism—these are more subjective metrics to obtain, but evidence has emerged that wellness provides a larger productivity gain than reduction to medical cost. There are differing schools of thought. Some argue that it is best to focus interventions on those at highest risk and cost. Others believe it is more cost-effective to maintain the health of the general low-risk population. Measuring the financial and health effects of wellness programs is a science unto itself, and there are conflicting theories about the efficacy of such programs depending on point of view and whether one is buying or selling them.

One study by Anderson et al published in 2000 in the *American Journal of Health Promotion* cited ten modifiable health risk behaviors that generate as much as 25% of health care cost. The authors identified overweight/sedentary lifestyle, stress, and tobacco use as the three most costly factors. These could be reduced with lifestyle/behavior change and or medication.

The positive financial effect of wellness programs on employee productivity, in the form of reduced absenteeism and presenteeism, is generally accepted by experts to be greater than the reduction in medical costs. As a public health measure, wellness

programs do have positive socio-economic ramifications; these will be addressed later in this report.

In Ian Duncan's 2008 book, Managing and Evaluating Health Intervention Programs, he states that a corporate workplace wellness program may include:

- Health risk assessments
- Risk modification programs for specific conditions such as diabetes, obesity, smoking, etc
- Activities ranging from specific interventions to general informational activities
- Interventions ranging from informational to individual
- Either or both onsite and offsite activity
- Multiple communications channels
- Evaluation strategy, and
- Integration within corporate framework.

#### **FURTHER EXPLANATION OF THE MEDICAL COST OF THE MANDATES:**

Note: We have used the term PMPM (per member per month) and per insured person per month to mean the same thing in the following projections. The latter term is meant to convey that the cost of the mandated benefit, which is intended for a small and vulnerable subgroup, has been spread to the entire insured population.

In examining the cost of the mandates, we looked at the frequency (or utilization) of the mandates separate from the unit cost per service. The PMPM cost is the product of the frequency times the unit cost. Utilization may be expressed on a per person or per thousand people basis. It may also be expressed on a per month or per year basis. Appropriate conversion was used to obtain a PMPM cost.

**1. Ostomy Supplies:** The prevalence and incidence rates of ostomy in the fully insured population is very low—ostomy is an extreme event in the sense that it occurs very infrequently and only a miniscule fraction of the insured population has an ostomy. Our data indicate that about 0.08% of the fully insured population has one of these three ostomies; this is eight in every ten thousand people. Our data show that about 0.03% undergo an initial ostomy surgery annually. Additionally, about 0.01% undergo an ostomy reversal and will no longer need ostomy supplies.

Increasing the annual spending limit on ostomy supplies for ostomates will have a *de minimis* effect on overall medical cost because this mandate affects such a small portion of the population and because the incremental cost of the additional supplies is relatively small. Most ostomates currently spend less than \$1,000 annually on supplies and appliances. In our analysis of a fully insured population, we found that about 10% of ostomates used more than \$1,000 of allowed cost for supplies in a year. This 10% may understate (be lower than) the actual percentage due to the presence, in the aggregate data, of some insureds whose benefits are limited to one thousand dollars or less.

Assuming 20% of ostomates will use, on average, another \$850 of supplies annually in 2010, the incremental medical cost would be:

[ 20% x { .00076 + ( .00026 - .0001) / 2 } x \$850 ] = \$0.14 per person per year. This is about \$0.01 on a per insured person per month basis or PMPM.

To the medical layperson, the cost of the pouches and wafers seems high relative to the cost of band-aids and similar mass-produced medical goods. Since the sales volume is much lower for ostomy supplies than band-aids, the unit cost of ostomy supplies remains high. Medicare has been able to keep the reimbursement for these supplies low, but it is unknown how much more commercial insurers pay for the same supplies.

This is a revised mandate. Although the one thousand dollar limit may have been more appropriate when the mandate was first passed in October, 2000, the effect of inflation during the intervening years has reduced the spending power of \$1,000. It is reasonable to have a higher limit beginning in 2010 even if only to preserve the original benefit level.

**2. Prosthetic devices:** Amputation is also an extreme event—an extremely small portion of the fully insured population under 65 has an amputation. Unlike ostomy supplies, however, prosthetic devices can be more expensive. This is therefore a low frequency but potentially higher cost medical benefit. The approximate cost of a typical prosthetic device can range from \$25 to \$50,000 depending on complexity. At the low-cost end of the continuum, the stump may simply be covered with a “sock” designed specifically for that purpose. With advances in medical technology and the inclusion of computer-assistance, the cost of a single prosthetic device can exceed \$60,000. The doctor and prosthetist will work with the patient to choose a device that is most appropriate for the patient based on age, weight, activity level, and lifestyle. Some older and frailer amputees may resign themselves to spending the rest of their waking lives in a wheelchair as a result of a lower limb amputation, which is to say that not every amputee chooses to obtain a prosthesis, even if they do not have to pay for it out of their own pocket.

As the mandate is written, there is no upper limit on the cost of the device. The absence of a cost cap may affect the medical cost of this mandate slightly in future years, but it is not expected to materially affect year one.

IC was able to extract and analyze 2008 data from three states, CO, ME, and NH, which have a prosthetics mandate. The aggregate paid PMPM for prosthetics across all three states combined was \$0.09 PMPM, and the utilization was 12 people per ten thousand. This is a weighted average across the three states using member months. This varied widely across each of the three states--\$0.07, \$0.33, and \$0.86 PMPM in CO, ME, and NH respectively. There are so few member months in NH and ME that the data is not fully credible in those two states. Our CO data has about 25 times as many member-months as ME and NH combined.

There are about 330 HCPCS L-codes that correspond to components of these devices, and one device is generally billed using a combination of multiple L codes. In terms of prevalence, in the literature, it is estimated that about 0.15% of the total US population under 65 has major limb loss defined as a missing hand, arm, leg, or foot. Most amputees, upwards of 90%, have lower limb loss. Based on our fully insured data, about 0.014% of the insured population under-65 purchased some type of prosthetic device annually in 2007 and 2008. The average prosthetic cost at that time was \$5,650 per device. 0.008% of the insured population had an ICD-9 V-code for amputation status. In the general under-65 population, both insured and other, the data in our literature search indicate that 0.04% experience a major limb amputation per year. It is likely that this incidence rate is less in an insured population than a non-insured.

The projected cost of the mandate in year one was calculated by IC as follows:

[ 0.0005 devices per insured person per year x \$8,500 per device ] = \$4.25 per insured person per year. This is \$0.35 per person per month.

Since the actual utilization and unit cost may differ from that projected here, the result has been presented in a range of \$0.25 to \$0.45 PMPM. It is expected that year one will have a somewhat higher utilization rate than later years to satisfy pent-up demand.

The reason for surgical amputation is usually a dysvascular problem with a lower limb. If diabetes and obesity rates rise, we originally thought we could expect a concomitant increase in dysvascular problems and surgical amputation. A surgeon with whom we met, however, explained that there is an increasing emphasis on upstream medical efforts to keep dysvascular patients ambulatory and avoid further deterioration of circulation to extremities that could lead to foot and leg amputations. This is a problem that affects those over 65 far more often than those under 65.

The mandate in CT does not limit the number of devices an individual may acquire in a specified time period (number of years). While this could affect cost, we do not expect it will increase cost substantially because this is not a benefit that is subject to widespread abuse. Insurers may seek to control cost by contracting with preferred suppliers. There is a wide range of costs that different payers actually pay for the same prosthetic device depending on whether Medicare, Medicaid, private insurance, Workers Compensation, or the individual himself is paying for the device. By designating a payment rate as a specific multiple of what Medicare pays, such as 125%, insurers can achieve a more level playing field. Since so few people use prosthetic devices, their price has not benefited from the decrease that comes with mass production and distribution.

**3. Hearing Aids for 13 through 18 Year Olds:** Appendix 3 develops the expected PMPM cost of this mandate. Assuming an average \$2,250 cost per hearing aid, we project that the maximum biennial \$1,000 benefit will be paid by all but the highest deductible plans we tested. Assuming that 20% of employees leave their jobs and terminate coverage each year, the average annual benefit would be \$600 (equals \$1,000 \* 20% plus \$500 times 80%). Note that a significant percentage of children who need aids required them in both ears (binaural). Because the mandated benefit does not cover the entire cost of the aids, we assumed that 10% of children who need aids would not utilize the benefit.

To project the prevalence of hearing loss that may require aids, we reviewed both data from the Ingenix Consulting (IC) database of claims from a commercially insured population and information from public sources. We looked at 2008 IC database claims from fully insured groups in seven states (including Connecticut) that have mandated these benefits for children since at least 2007. As shown in Appendix 3.1, the utilization rates and PMPMs are low, indicating perhaps low awareness of the benefit or the fact that the benefit covers only part of the overall hearing aid cost. Note that we show Connecticut data only for ages 0-12.

The public source data show a relatively wide variance of child hearing loss prevalence, in general ranging from 0.7% to 3.5%. Eliminating the high and low values and adjusting for the differences between children of employees likely to be covered by group plans versus all children, we estimate the overall prevalence to be approximately 1.75%.

As we show in Appendix 3.3, we therefore estimate the PMPM cost to be \$.06 ( = \$550 \* 90% \* 1.75% \* 8.8% of all commercially-insured members are children 13-18 divided by 12 months),

**4. Wigs for Alopecia Areata:** Data obtained in our meta-research indicated that about 0.1% to 0.2% of the population is affected by alopecia areata. Data from our fully insured population indicated that 0.07% is coded for the diagnosis of alopecia areata with an ICD-9 code of 70401. Assuming that 0.1% of the fully insured population (one in one thousand) has alopecia areata and needs a wig at an additional annual expense of the full \$350, this would add thirty-five cents to the average per person per year medical cost—a few cents per month. ( 0.001 x \$350 per year = \$0.35 per year). If the utilization rate is .07%, the cost would be two cents per month. Either way, it is *de minimis*. Not all will require a wig, since their hair loss may be so minor that a wig is impractical, or so temporary that they do not feel the need to get a wig before their hair re-grows.

**5. HLA Testing:** The cost of an HLA test in the insured data ranged from about \$100 to \$300 depending in part on the setting in which it occurs and the stage of the test in the series. Low resolution testing can occur prior to high resolution. Based on our fully insured data, the average patient's (BMT recipient) insurance pays for 3.8 HLA testing procedures for a total testing cost of about \$650. The 86813 CPT code for low resolution combined A, B, C testing is the same as that for high resolution testing of each of A, B, and C. The 86817 works similarly for the DR locus and DQ locus.

As of July 2009, the national Bone Marrow Transplant Registry in the US began to offer free registration testing to those potential donors that sign up for the transplant registry. This is an initial screening of A, B, and DR loci.

It is not known how many potential donors will undergo HLA testing. By various accounts, there are currently 5.5 to 8 million people on the US registry. The cost of the marrow donation itself is borne by the patient (recipient). The patient's insurance currently pays for the advanced stage (higher resolution) HLA tests for an unrelated potential donor whose genetics seem to be close based on the registration test. This is called compatibility or confirmatory testing. Many donors who are a potential match will go through this subsequent testing. Even if the donor proves not to be a match for that particular patient recipient, once the potential donor's high resolution testing is completed, the additional information is known to the registry, and it is then easier to find that donor a match in the future.

The projected incremental annual cost per person was calculated as follows:

[ (.001 donors per person insured x \$100 per donor ) + ( .00005 x \$10,000) = \$0.60 per person per year. This is about \$0.05 per insured person per month for the testing cost only.

The other cost to consider is the increased rate at which BMTs can be performed to save lives for which a donor match could not be found previously. According to the National Bone Marrow Transplant Link, an allogeneic transplant may range in cost from \$150,000 to \$200,000. There are only 4,000 allogeneic BMTs performed annually in the US. This is .0013% of the population. If the increased rate of HLA testing causes a 5% increase in the number of BMTs, the cost of additional BMTs is as follows:

5% x .00001333 x \$200,000 = \$0.14 per member per year, about \$0.01 PMPM.

The total projected incremental 2010 cost is \$0.06 = \$0.05 testing + \$0.01 BMTs. Again, the actual 2010 cost could be greater or less than \$0.06 PMPM.

**6. Colonoscopy:** Of those insureds that have a colonoscopy in any given year, our data shows that about 2.6% have more than one. Based on the same insured data, those who undergo more than one colonoscopy in a year tend to have less cost-sharing than the average insured person. They are more likely to have met their deductible and reached their out of pocket maximum, if their PPO plan has one.

To calculate the lost cost-sharing, we added the total cost-sharing for second and subsequent colonoscopies in each year and divided by total member months. It was less than \$0.01 per insured person per month for each of 2007 and 2008.

**7. Wellness:** The cost of wellness programs can vary substantially; it depends on how they are structured. The mandate does not define wellness program, nor does it clearly articulate the meaning of financial incentives. For example, a smoking cessation program is often a component of a wellness program, but it could be argued that such a program alone would satisfy this mandate. Any of the following are examples of financial incentives that could be coupled with a smoking cessation program for smokers that stop and remain tobacco-free for y months:

- Cash reward (of \$x),
- Gift card,
- Reduction of deductible,
- Other reduction of cost-sharing.

A number of large-scale formal studies have sought to determine whether disease management or wellness programs actually reduce medical cost by more than the cost of the program itself. The phrase “over the long term” is often used in wellness program descriptions when referring to medical cost savings. Many experts are ambivalent or remain unconvinced. Although these programs may reduce absenteeism and presenteeism, thereby improving productivity, they have not been scientifically shown to reduce medical cost in excess of fees. In August 2008, CMS concluded that the disease management interventions in the Medicare Health Support Program did not reduce Medicare A/B medical cost by more than the program fees for selected A/B beneficiaries w/ heart failure and/or diabetes. This study involved randomized intervention & control groups. Those who argue against wellness programs point out that disease management (DM) programs are more likely to save money than wellness programs because DM focuses on those with chronic illness, whereas wellness programs need to offer incentives to everyone in order to identify and target the minority that will benefit from subsequent health interventions. For example, every employee may be given \$100 or \$200 to fill out a health risk assessment that can be used to help identify the subset with specific medical conditions and needs.

Similarly, in an August 7, 2009 letter, the Congressional Budget Office explained that, “the evidence suggests that for most preventive services, expanded utilization leads to higher, not lower, medical spending overall.” In the same letter, the CBO goes on to discuss wellness programs and states that “designing government policies that are effective at inducing people to be healthier is challenging. Even successful efforts might take many years to bear fruit and could involve significant costs.”

The foregoing studies are cited not to disprove the efficacy of wellness programs, but rather to demonstrate that there is an ongoing debate over whether they actually save money and how long it takes.

**Denominator Used in Medical Cost Percentage Calculations:**

From the CT DOI, we were able to obtain these arithmetic (not weighted) averages for filed 2010 insured HMO premiums (includes admin and profit) for medical and RX combined:

Individual	\$245.22
SG	\$316.06
LG	\$349.92

Note: This does not include any PPO or other non-HMO health insurance policies. The average retention (admin + profit) associated with these filed HMO premiums is:

Individual	27%
SG	22%
LG	18%.

Using these admin percentages provided by the CT DOI, this yields the following average PMPM medical costs:

Individual	\$179.01
SG	\$246.53
LG	\$286.93.

The HMO premiums are expected to be less than the non-HMO plans, but non-HMO rates are not filed in CT, so we assumed that on average they are 10% more costly than HMO.

From the national IC data, we obtained a 2008 paid medical cost of \$269.43. We adjusted that to CT by applying an area factor of 1.118 and trended it to 2010 by applying two years of trend at 6%:

$$[ \$269.43 \times 1.118 \times (1.06 \wedge 2) ] = \$338.45$$

This is much greater than the filed 2010 CT HMO premiums.

In view of these numbers, we decided to use **\$300** for the 2010 medical cost in the denominator of our percentage calculations, which is within the range of the various filed and calculated 2010 medical cost amounts above.

**DIFFERENTIAL EFFECT OF THE MANDATES ON INDIVIDUAL vs. GROUP INSURANCE:**

The seventh mandate on wellness and incentives applies to group plans only. It does not apply to individual plans. The other six mandates apply to group and individual plans alike.

The individual market is characterized by a larger percentage of leaner benefit plans that involve greater member cost-sharing, often in the form of a high deductible. Individual insurance is not inexpensive and the policy-holder must bear the entire cost alone. While adverse selection is more pronounced in the individual market than group, the prudent buyer of health insurance would not be motivated to purchase a new individual policy solely

because of any of the new mandates, except perhaps the prosthetics mandate. Given the high cost of health insurance versus the mandate cost, only the newfound economic wherewithal to purchase, for example, an arm or leg prosthetic device would be sufficient motivation to pay the insurance premium. This could occur in so few instances that, even for the prosthetics mandate, the cost of adverse selection would not be considered significant in terms of its effect on the health insurance premium. This same situation already exists to some extent for individual health insurance purchased from CT's Health Reinsurance Association. These HRA policies are somewhat more expensive than the individual policies covered by PA 09-188.

The average cost of an individual health policy in CT is less than a group policy. All else equal, this means that the incremental cost of the six mandates will be slightly greater for individual plans when expressed as a percentage of overall medical cost. For our intents and purposes, the medical cost difference resulting from different-sized denominators for individual vs. group is not of consequence.

As explained in the prior section, we used \$300 PMPM as the assumed average medical cost for the CT insured population in 2010, since we do not have the exact number. Bearing in mind the relativities of the filed insurance premiums, we assume this medical cost breaks down roughly as follows:

	PREMIUM	MEDICAL COST
Individual Policies	\$280	\$205
Small Group	\$340	\$265
Large Group	\$375.	\$310

#### **DIFFERENTIAL EFFECT ON SMALL GROUP vs. LARGE GROUP:**

The mandates are expected to have roughly the same effect on small groups as large. That is, the difference in the effect on small vs. large groups is not expected to be large enough to calculate. This stems mostly from the fact that the combined cost of the first six mandates is so small that the presentation of such a small differential number might imply a false level of precision.

Small groups tend to purchase lower cost, leaner plans than large groups. Employees of small business also tend to pay a larger share of the premium. In this respect, the cost of the six mandates as a percentage of total medical cost will be somewhat greater for small group than large, but the difference is not enough to be of consequence.

Like individual coverage, there is typically more adverse selection of benefits among small groups than large groups. This is not expected to be a problematic aspect of any of the mandates. It might only come into play with the prosthetics mandate, and the effect on the CT market would be negligible.

The small group market is more sensitive to the cost of health insurance. A 10% increase in premium cost, all else equal, is expected to cause more small groups than large ones to drop health insurance coverage. In general, mandates push up the cost of health insurance for small and large groups alike, but a somewhat higher percentage of small groups may drop coverage as a result. This is driven in part by the fact that there is generally more variation in

the annual premium increases of small groups relative to large. The small groups with the largest increases tend to lapse coverage first.

The wellness/incentives benefit may be less attractive to small groups and more difficult to administer to small groups than large. Many of the employers that have established wellness programs tend to be very large and have self-funded health benefits rather than fully insured.

One consequence of additional mandates is that some groups, especially larger groups, will switch to a self-funded approach, which enables them to avoid complying with the mandates if they wish. This will be explained further in the next section.

### **EFFECT OF MANDATES ON THE AVAILABILITY AND COST OF HEALTH INSURANCE:**

In this section of our report, we will consider the “sticker shock” associated with the seven mandates—the increase in total insurance premium cost caused by the seven mandates and the expected consumer response vis a vis the consumer decision whether or not to renew health insurance coverage. Some actuarial evaluations of new and revised mandates now consider not only the effect of the mandate on health insurance premiums, but also the number or percentage of policy holders that will choose not to renew coverage due to the premium cost increase.

In the last section, we mentioned the difference in lapse rate between small and large groups that results from the same-sized annual premium increase. The likelihood of disenrollment due to cost increase is not easily calculated; it depends on the economic environment and other factors. Disenrollment tends to occur more often as a result of an abnormally large increase to a specific policy-holder. If normal medical trend is about 8%, and if an annual premium increase can be reduced to around 4% with some moderate increase in copays, coinsurance, and or deductible (benefit “buy-downs”), an additional 0.3% of cost increase is not likely to have a significant effect on disenrollment. Groups may choose to “buy-down” their benefit plan somewhat further rather than lapse coverage altogether.

This is a consideration that should be noted. As employer groups reduce the level of coverage by shifting more cost to the insureds year after year, two things happen. One is that members pay a larger portion of the total plan cost, and the other is that members may forego some medically important services to avoid the higher copays, deductibles, or coinsurance. Mandates generally increase the cost of insurance and, in conjunction with medical trend, individuals and groups will respond at time of renewal by purchasing a lower level of coverage with increased member cost-sharing. The end-game of all these buy-downs is a plan in which considerably more expense is shifted to the insured. Unless the plan makes high-value services available for reduced or no copays, under-insureds will tend to forego some necessary services, such as immunizations, diabetic medications and supplies, and other preventive services because the member cost-sharing acts as a barrier to access.

For this analysis, we will first exclude the seventh mandate, which pertains to group only, because groups are not required to purchase it. In 2010, the first six mandates combined are expected to increase total spending and the cost of health insurance by less than 0.3%. Such a small change in cost is unlikely to increase the uninsured rate in CT perceptibly. It is possible, however, especially in this economic climate, some policy holders will choose not to purchase new coverage or renew existing coverage because of the normal effects of medical

trend on premiums. Given the small cost increase of the six mandates, the rate at which any incremental disenrollment occurs as a result of the six mandates is not likely to be large enough to be measured. Since the CT market offers groups and individuals an array of plan design choices, insurance consumers are able to modify their benefit plan in order to help offset the premium increase at time of renewal.

Since the seventh mandate is optional, it too should not cause any market disruption in terms of exacerbating affordability.

Although actuaries have estimated lapse rates as a function of premium increases, there is not a great deal of hard data to work with. As a result, many of the expected lapse rate functions tend to be “soft” estimates. In this study, the cumulative incremental value of the seven mandates is so small that it is not as significant a consideration as it was for other more costly mandates, such as infertility or mental health parity.

The following elasticity example will put into perspective the relationship between premium increase and coverage lapse: For every 1% increase in premium, we assume that approximately 4% of groups and individuals will reduce their coverage at renewal to save money on the front-end in the form of lower premium. On average, their reduction in coverage is expected to result in a 4% reduction in their premium. For a 10% renewal increase, for example, we expect about 40% of groups to reduce their plan of benefits by 3% on average. (This amounts to a 1.2% reduction to normal 10% increase in overall premium due to the 40% of the block that buys down by 3%.) For an incremental increase of 0.3%, we expect 1.2% more groups to buy down at time of renewal.

We also assume that 0.03% to 0.10% will lapse coverage for every 1% premium increase. Thus, a premium increase of 0.3% would cause about 0.015% of the insureds to become uninsured if we use 0.05% as the factor. That is, the incremental premium increase of 0.3% caused by the mandates drives 1 or 2 out of every 10,000 insureds to become uninsured. If there are 1.2 million people in CT that are covered by the fully insured policies affected by these six mandates, then 180 people will become uninsured as a result. At least that is the projected number produced by the model, but this is a “soft” estimate with a wide margin of error. Again, the exact relationship of premium increase and lapse cannot be projected with precision, and many extenuating factors play a role, such as overall economic climate and the relationship between medical trend and the change in the CPI (Consumer Price Index).

The other group response to consider is that some groups, especially larger ones, will choose to move to a self-funded approach as a result of additional mandates that add to the cost of health insurance and that they perceive as low value. By switching to self-funding, groups can avoid mandates. Roughly half of the commercial health coverage in CT is now self-funded.

## **EFFECT OF MANDATES ON PUBLIC HEALTH:**

The public health gains resulting from the mandates will be discussed separately for mandate seven on wellness vs the first six mandates. In the next section, we project the number of commercially insured individuals in CT who will be affected by each of the mandates.

Depending on the nature of the mandate, their positive medical effect occurs over a continuum ranging from those that affect everyone to those that affect only a vulnerable

minority. All of these seven service mandates will serve to improve the health of some individuals and thereby increase their productivity. Due to the small number of individuals affected by the narrow focus of the first six mandates, their overall affect on the public health of the entire insured population will not be as sweeping as a mandate that affects all individuals. For the few that are affected, however, these mandates provide strongly beneficial health interventions that will enable them to live higher quality, more productive lives. This is most true for amputees that previously could not afford a prosthetic device, but will now be able to re-enter the workforce. It is also true for ostomates who will be able to afford to maintain an improved level of personal hygiene, thereby reducing their level of social and workforce withdrawal.

It is similarly true for 13 to 18 year olds who have hearing loss and cannot afford assisted hearing that will enable them to obtain a better education, social development, and quality of life. The HLA test mandate has the potential to save lives by increasing the pool of available marrow donors.

Unlike the first six mandates that serve a very small and vulnerable minority, the wellness/incentive mandate has the potential to affect a much larger portion of the insured population. This seventh mandate is optional in the sense that insurers must offer it, but groups may decline it. For those groups that choose the wellness/incentive benefit, reductions in medical cost are ultimately expected, but they may not materialize until later years. The gain in productivity in the form of reduced absenteeism and presenteeism is expected to be greater than the reduction in medical cost. This productivity gain inures to the employer but not to the insurer. The question arises whether there is a misalignment of incentives if the insurer is required to offer and provide the benefit to the employer in 2010, for example, but the medical cost reduction is not expected to be realized in the first year.

#### **EFFECT OF MANDATES ON THE DELIVERY OF HEALTH CARE INCLUDING THE UTILIZATION AND UNIT COST OF HEALTH CARE SERVICES, MEDICAL SUPPLIES, AND DEVICES:**

Similar to Newton's third law of motion that asserts that for each and every action there is an equal and opposite reaction, one of the consequences of any benefit mandate is reactionary change somewhere in the system for the finance and delivery of health care. Sometimes the change is anticipated and intended; other times not. If we observe the evolution of Medicare over the past forty plus years, we can see similar actions and reactions as the package of benefits, provider reimbursement methods, and eligibility standards changed over time.

Any mandate that adds to the list of things health insurers must cover generally adds to the cost of medical care and insurance. The market reacts to the mandate in many ways. The mandate may induce utilization, and providers may increase the rate at which the service is performed. It may increase the unit cost of medical goods and services as increased demand increases price.

In the case of these seven mandates, they are all "service" mandates, which by definition require the provision of a specified medical service in health insurance plans. Another type of mandate requires that the services of certain providers be covered. Yet a third category of mandates defines the individuals who are eligible for group or individual coverage

Studies of medical technology have shown that there is not as brisk a post-invention secondary market for medical technology and equipment as there is for manufactured technological goods, such as computers and televisions. Medical technology does not generally enjoy the same simultaneous benefit of tumbling prices and the advances of Moore's law, although this may be true to some extent in the case of prosthetic devices with microprocessors. While mandates may encourage the development of new medical equipment, the market for the same medical equipment produced less expensively is reported to be less efficient than the secondary electronics market. As such, new mandates that involve medical equipment can contribute to the increase in the overall cost of health insurance.

**Based on a review of each mandate, these provider and supplier reactions are expected:**

1. The ostomy supply mandate is not expected to materially alter the availability of supplies or their cost.
2. The prosthetics mandate is not expected to change the need for them. It may increase the rate of replacement. Without a cost cap or limit on number in specified time period, there may be somewhat higher utilization than there would be otherwise. The increase in demand as a result of the mandate for prosthetic devices is insufficient to stimulate new research and development of more technologically sophisticated devices. In our research, we came to learn that the military is promoting research on better prosthetics to help those veterans who have lost limbs in the service of our nation. This will do far more to stimulate the technological advancement of prosthetic devices than an insurance mandate.
3. The extension of the hearing aid mandate to children 13 through 18 is not expected to materially increase the demand and price for assisted hearing devices. Since most childhood hearing loss is diagnosed before age 13, we anticipate few additional children needing a first-time hearing aid between 13 and 18, beyond those that already had them prior to 13. Plans with low cost-sharing may see a more frequent rate of replacement. Recent advances that affect hearing aid quality and cost involve the transition from analog to digital technology. The mandate may encourage more upgrades from analog to digital aids for those in the 13 through 18 year old age group. These factors alone will not cause a significant increase in utilization since parents are already to equip their children with the best hearing aid technology available. Since hearing aids cost from \$1,000 to \$4,000 dollars per ear, the mandate and its limit (of \$1,000 once every two years for both ears) will act as a subsidy rather than a comprehensive benefit. There is actually a much higher prevalence rate for hearing aid need in the elderly population, and this tends to drive the supply and demand curve for hearing aids more than this mandated age extension will.
4. The price of hair prostheses is not expected to change as a result of the alopecia areata mandate because the demand will be so small and the service so specialized. Many high-quality wigs cost more than \$350, so the \$350 will serve as a subsidy but will not cover the full cost of the better wig.
5. The mandate for HLA testing may cause payers (insurers and HMOs) to negotiate with preferred labs for the reimbursement for HLA tests. As more donors are located, more bone marrow transplants can be performed, and potentially more lives saved.

6. The revision to the colonoscopy mandate affects so few individuals that it is not expected to change the supply of providers performing colonoscopies or the price of them. Only a small percentage of colonoscopies, about 4%, must be re-performed because the patient was not sufficiently and properly prepared for the procedure which requires prior evacuation and cleansing of the intestine. The change in colonoscopy cost-sharing is not expected to change physician practice behavior in this regard. The majority of those who need more than one colonoscopy in a policy year are suffering from either colon cancer or multiple pre-cancerous polyps that require removal. These individuals tend to have higher medical costs than average, and they are more likely to have met their deductible or out of pocket maximum. This mandate further specifies that coverage of colorectal screening is performed in accordance with the recommendations of the American College of Gastroenterology, after consultation with the American Cancer Society, based on the ages, family histories, and frequencies provided in the recommendations. Based on the fully insured data, it does not appear that the cost-sharing for subsequent colonoscopies is a significant barrier to access. It may be a greater impediment in HMO plans that charge a flat copay, such as \$50 or \$100 per colonoscopy when performed in an ambulatory surgery or outpatient setting, which is where most occur. Because of the out of pocket maximum in some PPO plans, it may turn out to be less costly to a PPO member than someone in an HMO with a large copay for colonoscopy.
7. The wellness and incentives mandate would create a market opportunity for wellness program vendors with simple, effective, and low-cost approaches to meeting the conditions of this mandate. Most of the wellness programs that are described and reported in medical literature tend to be successful ones. Thus there is a reporting bias toward those programs that actually work. In all wellness programs, the savings tend to be observed more often in later years than early on. The calculation of savings varies widely, and those vendors that sell such programs sometimes market them using a projected return on investment that is highly attractive but overstated.

**Based on a review of each mandate, these reactions are expected to occur on the part of insured individuals:**

1. Ostomy supplies and appliances consist primarily of wafers and pouches. The small minority of ostomates who require more than \$1,000 of supplies and appliances annually will be able to purchase them; we estimate that there are about 480 such insured ostomates in CT out of a total of 2,400 ostomates in the state that are commercially insured. Over-utilization is not expected to occur as a result of the mandate, but for a minority of ostomates, they will be able to achieve an appropriate, medically recommended, and more hygienic level of utilization. In our research, we learned that ileostomates tend to use roughly twice as many ostomy supplies as colostomates. Urostomates also use about twice as many. This is a consequence of the nature of the condition and frequency of evacuation. Furthermore, there are those who may have both a urostomy and either a colostomy or an ileostomy. This minority of double ostomates has greater need for ostomy supplies and will be afford to purchase them under the revised mandate. By increasing the insurer payment limit from \$1,000 to \$5,000, virtually all ostomates' need for wafers and pouches should be met. This limit should be appropriate well into the future.

2. The cost of a prosthetic device is a major barrier to access for an amputee who desires one and does not have insurance coverage for it. One of the concerns presented by a doctor we interviewed was that, if the prosthetic device is paid for on the patient's behalf, some amputees may order one but not learn to use it. Limb loss is traumatic both psychologically and physically. It is not easy to become accustomed to a prosthetic device. The mandate, as written, does not require the physician, rehabilitation specialist, or prosthetist to follow-up and support the patient transition into physical therapy and accommodation to the artificial limb, which may be a factor in the acquisition of devices that are not subsequently used. We estimate that about 600 commercially insured amputees in CT will acquire prosthetic devices in 2010.
3. Hearing aids are critical to the education and life quality of hearing-impaired children of all ages. Many studies support this:
  - Children with hearing impairments find it more difficult to learn vocabulary, word order, idiomatic expressions, and other aspects of verbal communication (American Speech-Language-Hearing Association website).
  - Half of children with hearing loss graduate high school with a 4<sup>th</sup> grade reading level or less (30 year study by the Gallaudet Research Institute, 1996).
  - Lifetime costs associated with severe or profound hearing loss range from \$297,000 to \$417,000 per person. These costs include medical expenses, special education, and reduced working productivity (California Health Benefits Review Program, 2007).
  - Children with mild hearing loss miss 25-50% of speech in the classroom and so may be inappropriately labeled as behavior problems (C. Flexer, 1994, quoted from Facts on Hearing Loss website).
  - In 2000, the average per student expenditure for each DHH [hearing loss] child was more than twice the expenditure for a child with a disability (Karl R. White, Utah State University, 2009).

The parents of insured 13 through 18 year olds who need hearing aids will be able to afford them as a result of the mandate. Hearing loss is not elective; induced utilization should not be significant for this particular mandate, since it pays only \$1,000 every two years. The \$1,000 maximum is a fixed amount regardless whether the need is for one ear or both. Hearing mandates in some other states do specify each ear. Other states also allow different costs and time periods, such as \$1,500 per ear every three years. Some other states also declare that a person may spend more than \$1,500 per hearing aid as long as they pay the balance themselves—this eliminates confusion over how this should be handled. Other states have an unlimited benefit amount. Over a period of multiple years, the maximum amount may need to be increased to allow for inflationary price increases. We estimate that about 1,650 insured CT children between 13 through 19 will acquire hearing aids in 2010.

4. Wigs for alopecia areata are not expected to induce utilization so much as fill an infrequent but significant medical need that is currently unmet. The \$350 limit may need to be reset periodically to accommodate inflationary cost increases. In our cost

projections, we estimated that there are about 850 commercially insured individuals with alopecia areata in CT, and they will all acquire a wig that costs \$350 or more.

5. Over time, with sufficient encouragement from public health agencies, the HLA testing mandate could substantially increase the rate at which potential bone marrow donors are registration tested for potential compatibility. As more possible matches are confirmatory-tested at the higher resolution levels, this additional information about the C and DQ loci of potential donors will go back to the registry; it will then make future matching easier. This increase would serve a large social good because it would extend life for those receive the bone marrow transplants made possible by increasing marrow donation. For this reason, the increased utilization that results from the HLA test mandate can be perceived as the price of a larger social benefit. The greatest need for bone marrow donors in the US is for African American tissue types and people of mixed ancestry, followed by Asian and Hispanic. To be clear, there is a need for all tissue types to be tested, but the greatest need for one ethnic or racial group currently is for African American tissue types. We estimated that an additional 1,200 commercially insured people in CT will undergo registration testing in 2010.
6. The change in cost-sharing policy for second and subsequent colonoscopies is not expected to alter patient behavior and utilization. Most people do not want to undergo a colonoscopy once, let alone more than once, and the trivial elimination of copay or coinsurance is not expected to induce return visits. Out of the 1.2 million commercially insured people in CT, we expect that about 900 will have two or more colonoscopies in 2010.
7. Wellness programs are designed to change the behavior of the insured. There are many different varieties, but they all generally involve some type of effort on the part of the insured individual. Those with bad health habits may be encouraged to modify their behavior. All insureds may be encouraged to be more conscious of the effect of diet, exercise, smoking, alcohol consumption, and other lifestyle choices on their health. Those who are chronically ill may be encouraged to use higher value medical services and medication in order to avoid complications and the premature deterioration of health.

In assessing the medical and administrative cost of Wellness/Incentive programs, the most important aspect to consider is that the incremental cost is primarily administrative. Whereas the other six mandates increase the medical goods and services that insurers will pay for, the seventh mandate involves incremental administrative cost in the hope that it will eventually lead to a future reduction in medical cost. The theory is that by detecting and managing medical problems upstream, the later effects of deteriorating health and the higher cost of more serious medical care can be prevented downstream.

Nonetheless, there is not yet a great deal of strong scientific evidence that wellness programs reduce medical costs by more than the administrative cost of the program itself in the one to three year term. Demonstrable medical savings may require a longer term time horizon to emerge. By the time the savings do emerge, the insured may have moved to another insurer that becomes the beneficiary of the former insurer's expenditure.

Some aspects of wellness programs are currently practiced by primary care physicians in other nations, and this is a key part of their public health program. This same is true in the US in some group and staff model HMOs and co-ops. Doctors who provide fee for service care in the US, however, have less incentive to provide wellness coaching because they are often not paid for it. A well managed and effective wellness program can complement a group insurance plan so as to avoid sickness and maintain good health. It can also help the chronically ill avoid complications and the premature deterioration of their health.

#### **LONGER TERM MEDICAL COSTS OF THE MANDATES:**

A five year pro forma is shown in Appendix B.1 spanning 2010 through 2014. Over this time period, none of the first six mandates are expected to increase substantially in cost either on a PMPM or percentage basis.

With respect to medical cost, neither the utilization nor the unit cost of any of these six mandates is expected to differ significantly from that of normal medical trend during the same time period. For that reason, the percentage calculations should remain about the same over time.

The admin cost is expected to be slightly higher in year one to reflect the start-up costs associated with implementing and operationalizing some of the mandates.

For the prosthetic devices and for hearing aids, we expect that there will be higher demand at the outset due to pent-up demand. This will elevate the year one and, to some extent, year two utilization rates. For these two mandates, we expect higher year one cost.

The take-up rate for the wellness/incentives programs may increase in years 2 to 5, but it is not clear at this time what effect that might have on the cost of such programs.

Over the five years depicted in the Appendix B.1 pro forma, we expect medical costs of health insurance plans to increase annually. When benefit buy-downs and other cost-savings initiatives are taken into consideration, we expect the increase in total medical costs and insurance premiums to be roughly 5% annually.

Since the mandates establish a minimum level that cannot be bought down, we expect the force of trend to be about 8% annually on each of the first six mandates. Thus, a mandate that is expected to cost \$0.01 in 2010 would be expected to cost about \$0.02 in 2019. That is, at 8% annual trend, the PMPM cost of the mandate would double in about nine years.

#### **CONCLUSION:**

IC examined seven benefit mandates and calculated their expected costs. The cost of three of the first six mandates is expected to be *de minimis*. The prosthetics mandate is expected to be the most expensive of the first six, and it estimated to cost about \$0.25 to \$0.45 PMPM in 2010. In aggregate, the first six mandates are expected to cost less than one dollar PMPM. Even in aggregate, this is small in comparison with individual mandates, such as infertility or mental health parity, whose costs may be much greater.

The wellness mandate could cost considerably more than one dollar PMPM depending on the extent of the wellness program and the magnitude of its financial incentives. Since the wellness mandate is optional in the sense that groups may decline it, it was examined separately from the first six mandates.

**LIMITATIONS IN USE:**

This study was conducted by IC exclusively for the State of CT, specifically and solely as it applies to the evaluation of the seven benefit mandates covered by Public Acts Number 09-179 and 09-188. This statement of opinion is not intended for any other application or purpose.

I, Daniel Bailey, am a Director of Actuarial Services with Ingenix Consulting. I am a fellow of the Society of Actuaries and a member of the American Academy of Actuaries, in good standing, and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. Please contact me if you have questions. My e-mail address is [Daniel.Bailey@IngenixConsulting.com](mailto:Daniel.Bailey@IngenixConsulting.com), and my office phone is 860-221-0245.

Daniel Bailey, FSA, MAAA

A handwritten signature in cursive script that reads "Daniel Bailey".

## APPENDIX 1: COST CALCULATION—OSTOMY SUPPLIES

	IC DATA Insured Population	META-SEARCH of MED LIT
<b>PREVALENCE</b>		
% of Members using Ost Supplies in 2007 and 2008 combined	<b>0.076%</b>	
# of Ostomy Supply Users--07 & 08	31,860	
Total # Members in Insured data--07 & 08	41,713,606	
# Ostomates in US, United Ostomy Assoc New Ostomies Annually, UOA	This likely includes other types of ostomies in addition to the 3, such as tracheostomies, etc	750,000 0.25% 75000 0.025%
<b>ANNUAL INCIDENCE:</b>		
Initial Ostomy	0.026%	
Ostomy Reversal	0.010%	
NET	<b>0.016%</b>	
New Ostomies in 2007, HCUP NIS, 3 Types Only		
US--Total		91,654
US--Over 65		45,440
US--Under 65		46,214 50.4%
US--Paid by Private Insurance, HCUP NIS		29,936 32.7%
US--Total Pop--July 1, 2007		301,290,332
US--Pop < 65		263,347,921
<b>US--Pop &lt; 65--Incidence Rate, HCUP NIS, 3 Types Only</b>		<b>0.011%</b>
<b>COST DISTRIBUTION</b>		
2008 Avg Allowed, exc < \$50/yr	\$778.53	
2008 Cost Sharing-- % Allowed	\$62.71	8.1%
2008 Paid, exc < \$50 / yr	<b>\$715.83</b>	
% exceeding \$1,000 per year_Paid basis		9.57%
2007 Avg Allowed, exc < \$50/yr	\$754.57	
2007 Cost Sharing-- % Allowed	\$60.23	8.0%
2007 Paid, exc < \$50 / yr	<b>\$694.34</b>	
% exceeding \$1,000 per year_Paid basis		10.44%
<b>CALCULATION:</b>		
Assumed percent of ostomates that will use more supplies		<b>20%</b>
Percent of insured population that is ostomates		<b>0.085%</b>
Avg annual cost of additional supplies used by those ostomates that use more than \$1k	<b>\$811</b> 2008	<b>\$850</b> 2010
<b>Annual Incremental Cost</b>		<b>\$0.14</b>
<b>PMPM Cost</b>		<b>\$0.01</b>
<b>OTHER STATES' COST ESTIMATES OF OSTOMY SUPPLY MANDATE, PMPM or % of Premium</b>		
none		

## APPENDIX 2: COST CALCULATION

### PROSTHETICS

Major limb loss only--hand, arm, foot, leg

	IC DATA Insured Population	META-SEARCH of MED LIT
<b>PREVALENCE</b>		
% of Members with V-code for major limb amputation, 07 & 08	<b>0.008%</b>	
National Limb Loss Info Ctr: People in US with limb loss--partial or complete		1,285,000    0.435%
People < 65 living with complete <b>or partial</b> limb loss, Assumed percentage that is partial		668,000    0.259% 50%
New amputees, all ages, complete & partial		185,000    0.063%
Calculated new amputees < 65		96,171    0.037%
Assume 50% have major limb loss		0.019%
<b>ANNUAL INCIDENCE:</b>		
2008		
# members that received any prosthetic device	2,876	<b>0.0139%</b>
# members that received prosthetic device > \$200	2,494	0.0120%
2007		
# members that received any prosthetic device	2,905	<b>0.0139%</b>
# members that received prosthetic device > \$200	2,511	0.0120%
<b>COST DISTRIBUTION</b>		
2008 Avg Allowed, exc < \$200/yr	\$6,498.11	
2008 Cost Sharing-- % Allowed	\$86.64	1.3%
2008 Paid, exc < \$200 / yr	<b>\$6,411.47</b>	
2007 Avg Allowed, exc < \$200/yr	\$6,542.65	
2007 Cost Sharing-- % Allowed	\$258.16	3.9%
2007 Paid, exc < \$200 / yr	\$6,284.49	
<b>CALCULATION:</b>		
People < 65 living with complete <b>or partial</b> limb loss,		0.259%
<b>Calculated major limb loss, assume 50% partial,</b> percent of insured population		<b>0.129%</b>
Percent of insured amputees that already have acquired device		25%
Percent of insured amputees that will NOT acquire device		30%
Percent of insured amputees that could acquire device in 2010		<b>45%</b>
Percent that will acquire device in year one, 2010		75%
Percent of ins pop under 65 with major limb loss in 2010		0.019%
Percent of new amputees that will acquire device in 2010		30%
% of Population that will acquire device in 2010		<b>0.049%</b>
Avg Cost of Device		\$8,500
Annual Cost in 2010 per insured person per year		<b>\$4.19</b>
Monthly cost		<b>\$0.35</b>
<b>COMMENT ON CALCULATION:</b>		
Assumed % of insured population that will acquire device is considerably greater than that shown in the IC 2007 and 2008 insured data.		
Assumed avg cost of device is also greater than indicated in IC insured data.		
Year one cost in 2010 will be higher than later years cost as amputees without artificial limbs acquire them.		
<b>OTHER STATES' COST ESTIMATES OF PROSTHETIC MANDATE, PMPM or % of Premium</b>		
CA	\$0.15 to \$0.25	
CO	\$0.12	
MA	\$0.30 to \$0.45	
MD	0.0%, with orthotics	
ME	0.03% Groups > 20 0.08%, All Other	
NJ	less than 0.025% of premium--about \$0.09	
VA	\$0.01 to \$0.45, Individual \$0.01 to \$0.53, Group	

**APPENDIX 3:  
COST CALCULATION—HEARING AIDS for 13 through 18 Year Olds**

**Medical Cost Development**

Average annual benefit per child with hearing aid	\$550
% of children needing hearing aids	1.75%
% of these children who use the benefit *	90%
Children age 13-18 as % of total members **	8.8%
<b>Cost per member per month (PMPM)</b>	<b>\$0.06</b>
<b>As % of PMPM medical costs:</b>	<b>0.02%</b>

- \* Since the mandated benefit does not cover the entire cost, assume that less than 100% of eligible children utilize the benefit.
- \*\* Based on Ingenix Consulting's database of commercially insured members.

**APPENDIX 4:  
COST CALCULATION—WIGS for ALOPECIA AREATA**

	<b>IC DATA</b>			<b>META-SEARCH</b>
	Insured Population			of MED LIT
<b>PREVALENCE</b>				
% of Members with ICD-9 code of 70401 for alopecia areata			<b>0.072%</b>	
	2008	15,027	0.072%	
	2007	15,208	0.073%	
Wikipedia--General Population				0.1% to 0.2%
online article @ utdol-- "				0.10%
Scopus-- "				0.15%
e-medecine-- "				0.1% to 0.2%
 <b>CALCULATION:</b>				
Percent of insured population with alopecia areata			<b>0.072%</b>	
Percent of those with AA that will acquire wig			100%	
Avg cost of hair prosthesis			<b>\$350</b>	
<b>Cost per insured person per year</b>				
<b>PMPM</b>				<b>\$0.25</b>
				<b>\$0.02</b>

**APPENDIX 5:  
COST CALCULATION—HLA TESTING**

	<b>IC DATA</b>	<b>Other Data</b>	<b>Calc</b>
Current utilization level, over 90% tagged to recipient	0.01%		
Current testing cost per patient, 2007 & 2008	\$647.33		
PMPY, Per Insured Member Per Year	\$0.07		
PMPM	<b>\$0.01</b>		

**CALCULATION**

Additional 2010 potential donors (as percent of insured population. <b>Initial screening only</b> )			0.10%
Initial screening cost, 2010			\$100

Post-initial testing ( as percent of insured pop.)			0.005%
Additional post-initial testing, 2010		BMT Link \$10k to \$25k	\$10,000

**PROJECTED 2010 INCREMENTAL TESTING COST**

<b>PMPY, Per Insured Member Per Year</b>	<b>\$0.60</b>
<b>PMPM</b>	<b>\$0.05</b>

Above is incremental testing cost only.

**Cost of additional ALLOGENEIC bone marrow transplant operations.**

Increase in BMTs rate			5%
~ # of Allogeneic BMTs in US in 2008			4,000
Current Allogeneic BMT rate in US		BMT Link	0.00133%
IC 2008 Cost of Allogeneic BMT in 2008	\$133,033	\$150k to \$200k	
Estimated BMT cost for Calculation			\$200,000

Incremental BMT cost, annual	<b>\$0.13</b>
Incremental BMT cost, PMPM	<b>\$0.01</b>

**TOTAL INCREMENTAL COST OF HLA TESTING**

Annual	<b>\$0.73</b>
PMPM	<b>\$0.06</b>

**Other States' Cost Estimates OF HLA Test Mandate, PMPM or % of Premium**

MA      \$0.09 PMPM, excludes incremental BMTs

**APPENDIX 6:**  
**COST CALCULATION—COST-SHARING for 2+ COLONOSCOPIES**

## **COLONOSCOPIES**

**Eliminate Cost-Sharing on Second and Subsequent in Policy Year**

	<b>IC DATA</b>	
	Insured Population	
<b>PREVALENCE</b>		
Percent of c-scope patients with with 2+ in 2007 and 2008		<b>2.6%</b>
Total Cost-Sharing for all C-scopes	\$202,819,661	
Total Cost-Sharing for 2+ C-scopes incurred in 2007 and 2008	\$3,019,236	
Total Member months for 07 & 08	396,443,700	
Lost cost-sharing PMPM	<b>\$0.0076</b>	

**APPENDIX 7:  
COST CALCULATION—WELLNESS with FINANCIAL INCENTIVES**

This cost calculation has been omitted because the wellness/incentives benefit is optional and because the cost will vary depending on the breadth, scope, and complexity of the program itself. The nature and amount of the financial incentives will also affect the cost. Some insurers may choose to operate these programs themselves. Others may choose to partner with a vendor to provide some or all of the wellness program services.

Estimates of cost range from 0% to 3% of premium.

There may be wellness programs, however, whose costs well exceed 3% of premium.

**APPENDIX B.1:**

**FIVE YEAR PRO FORMA**

**PMPM COSTS**

<b>MANDATE</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
1	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01
2	\$0.35	\$0.26	\$0.22	\$0.23	\$0.24
3	\$0.06	\$0.05	\$0.06	\$0.07	\$0.07
4	\$0.02	\$0.02	\$0.02	\$0.02	\$0.03
5	\$0.06	\$0.07	\$0.08	\$0.09	\$0.10
6	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01
<b>Med Cost Subtotal</b>	<b>\$0.51</b>	<b>\$0.42</b>	<b>\$0.40</b>	<b>\$0.43</b>	<b>\$0.46</b>
<b>Retention</b>	<b>\$0.21</b>	<b>\$0.21</b>	<b>\$0.21</b>	<b>\$0.21</b>	<b>\$0.21</b>
<b>TOTAL MANDATE COST</b>					
<b>MEDIUM COST SCENARIO</b>	<b>\$0.72</b>	<b>\$0.63</b>	<b>\$0.61</b>	<b>\$0.64</b>	<b>\$0.67</b>
<b>OTHER SCENARIOS</b>					
<b>LOW COST</b>	\$0.53	\$0.44	\$0.42	\$0.45	\$0.48
<b>HIGH COST</b>	\$1.00	\$0.91	\$0.89	\$0.92	\$0.95
<b>TOTAL MEDICAL COST</b>	\$300	\$315	\$331	\$347	\$365
5% Annual, 2010 to 2014					
<b>Medium Cost Scenario as Percentage of Med Cost</b>	0.24%	0.20%	0.18%	0.18%	0.18%
<b>Avg Premium Cost</b>	\$357	\$375	\$394	\$413	\$434
<b>Medium Cost Scenario as Percent of Premium</b>	0.20%	0.17%	0.15%	0.15%	0.15%

**KEY**

- 1 Ostomy Supplies
- 2 Prosthetics
- 3 Hearing Aids, 13 - 18
- 4 Wigs for Alopecia Areata
- 5 HLA Testing
- 6 Colonoscopies, Omit Cost-Sharing on 2+

# Appendix III: Report on Financial Burden

## UConn Connecticut Center for Economic Analysis (CCEA)

To the extent that coverage for services and supplies is generally not available or inadequate, families face substantial health expenses. High levels of health expenses can place substantial financial burdens on families. If the burden is substantial, individuals may delay or forgo needed medical services and supplies (Banthin, et al., 2008). These choices impact an individual or family's productivity, finances and health status.

Often times, these additional burdens coincide with medical conditions that limit an individual's ability to work, hold down a job or maintain health insurance. A study of 1771 personal bankruptcies found that about 50% were related to medical costs (Himmelstein et al., 2005). Himmelstein et al. (2005) reports 75.7% of medical bankruptcies were filed by individuals who initially had health insurance. Their accrued health care related debt is a function of the total out-of-pocket cost of health care including premiums, co-insurance, co-payments and uninsured treatments. Over the course of a major illness, individuals may lose health insurance. This can happen if the individual is unable to work and loses their employer-based health insurance; or unable to afford out-of-pocket premiums. One of the goals of state health care mandates is to ensure that individuals have sufficient health insurance to protect them from unexpected and overwhelming expenses.

The seven proposed mandates represent a range of potential financial burdens. Hearing aids and prosthetics are high price items. The expense for medically optimal devices may prove prohibitive for many households. Ostomy supplies and wigs may create a large financial burden depending on the family's particular level of need for these supplies. Human Leukocyte Testing (HLA) and second and subsequent colonoscopy co-payments are smaller ticket items but may be justified on other bases. In the case of the wellness mandate, the projected expenses could go either way for an individual household. While the national burden associated with so-called 'lifestyle diseases' is alarming, the extent to which this mandated coverage will improve these outcomes is unknown.

In order to evaluate the potential burden posed by these seven mandates, this report estimates the percent of a family income spent on health care. At a minimum, this includes the share of their health care premium and the 'net new' cost of the service under consideration. This analysis draws cost estimates from the actuarial analysis, literature review, or personal communications. A survey of Connecticut's major health insurance provides estimates of the percent of Connecticut's privately insured that already have the level of coverage proposed by the mandate and the average burden imposed on those who do not currently coverage consistent with the proposed mandate. State specific income estimates come from the Census (2009) Current Population Survey. For Connecticut, average premium cost-sharing is imputed based on AHRQ (2008) Medical Expenditure Panel Survey (MEPS) – Insurance Component. MEPS is a nationally representative survey of medical insurance, expenditures, utilization, and health status.

About 47% of Connecticut's insured population less than age 65 or 41% of Connecticut's total population is subject to state health insurance mandates. This estimate includes people insured through employers or unions that purchase insurance policies (group) and those who buy insurance directly from health insurance companies (individual). Table 1 presents estimates of Connecticut's insured population. Individuals over age 65 with fully-insured employer-based insurance or direct-purchase insurance are assumed to have supplemental insurance rather than a comprehensive policy. This simplifying assumption attempts to hone in on the Connecticut population that is affected by state

health insurance mandates. To the extent that Medicare-eligible insureds maintain another comprehensive health insurance plan, these figures understate the percentage of the population affected by state mandates.

**Table 1: Insurance Status for Connecticut’s Population <sup>a</sup>**

	Under 65	All Ages
Total Population	2,988,837	3,437,145
Any Insurance Coverage	2,647,446	3,094,378
Private Health Insurance	2,281,734	2,574,857
Employer Based Health Insurance	2,099,172	2,099,172
Partially or Fully Self-Funded Insurance <sup>b</sup>	878,533	878,533
Fully Insured <sup>b</sup>	1,220,577	1,220,577
Direct Purchase Plans	172,867	172,867
Supplemental Private Insurance held by those over 65 <sup>c</sup>		308,615
Government Insurance	495,170	928,006
Medicaid	388,419	406,236
Medicare	80,930	513,173
Military	50,724	73,517
Uninsured	341,390	342,767

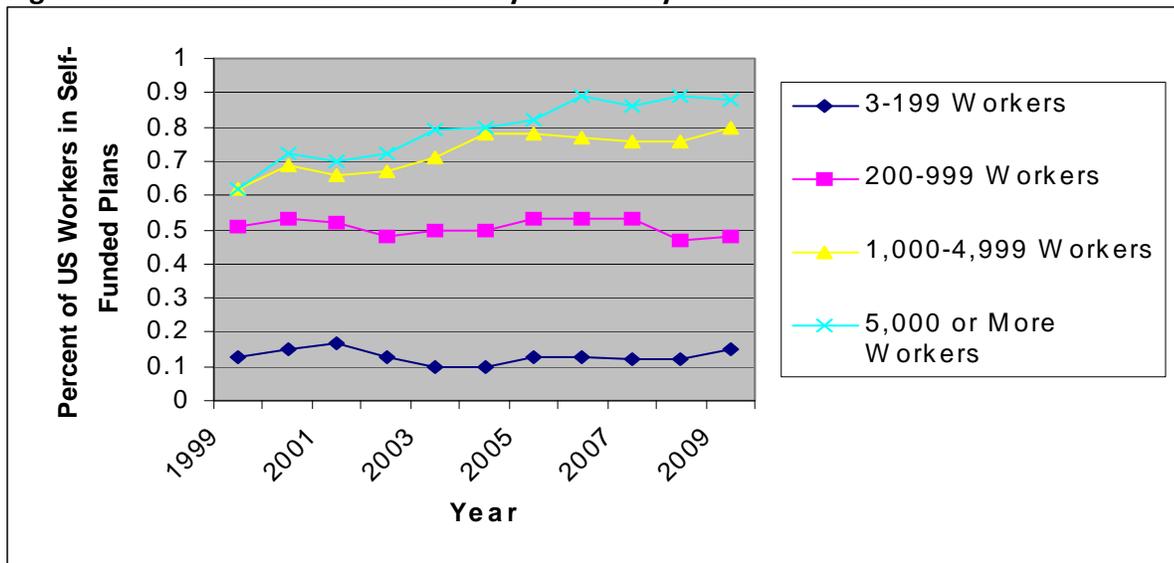
<sup>a</sup> Census (2008-9) Current Population Survey Annual Social and Economic Supplement

Estimates may not sum because of rounding and enrollment changes over the course of a year.

<sup>b</sup> Imputed based on AHRQ (2008) Medical Expenditure Panel Survey and firm data from the Bureau of Labor Economics (2009) Current Employment Statistics.

<sup>c</sup> When an individual holds both private insurance and Medicare, the private insurance is deemed supplemental.

**Figure 2: Trends in US Workers in Fully or Partially Self-Funded Insurance**



Source: Kaiser / HRET (1999-2009) Survey of Employer-Sponsored Health Benefits

Nationally, the percent of workers at all firms that fully or partially self-insure has grown from 44% to 57% in the past 10 years (Kaiser / HRET, 2009). Most of this growth is from large firms moving

from fully-insured to self-funded policies. From 1999-2009, firms with 1000-4999 employees increased self-funding by 18% and firms with more than 5000 employees increased self-funding 26%. Mid-size and small firms are less likely to self-insure and have not recorded same growth in self-insurance arrangements.

For large firms, the size of their employee-base allows them to spread health risks and costs over a large population. In this way, the cost of catastrophic health events only marginally impacts costs per individual. In principle, costly health events for one member of a small insurance pool can substantially affect per person expenses. For this reason, smaller firms are more likely to purchase insurance packages that spread risk over many firms through an insurance company than to self-insure.

The rising popularity of self-insurance stems from different trends. Rising health care costs have lead many firms to attempt to manage health care more directly and reduce overhead related to health insurance administration. Innovation in insurance products, such as consumer-driven health plans, allows more flexibility in moving to partially self-funded programs. An employer can purchase high-deductible insurance to cover major health events and costs, and self-insure up to the amount of the deductible directly or through medical savings accounts. A review by Monheit and Rizzo (2007) suggests firms self-insure to avoid the additional cost of state health insurance mandates. Separately, state health mandates may have minimal costs but many low-cost mandates can increase the cost of health insurance substantially (Monheit and Rizzo, 2007). Firms that self-insure are exempt from implementing these coverage mandates. It may be the cases that, as additional mandates cause premiums to rise, more employers will self-insure to avoid premium increases. In this case, the population covered by mandates will decrease over time.

Average baseline health insurance costs vary by insurance type (see table 3 below). Premiums paid by fully-insured firms appear to be higher on average than those paid by self-insured firms in Connecticut.

**Table 3: Connecticut Average Total Premiums and Insureds Share**

Policy Type	Single		Single + 1		Family	
	Total Premium	Insured's Amount	Total Premium	Insured's Amount	Total Premium	Insured's Amount
	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
Private Insurance						
Employer-Based <sup>a</sup>	4745	960	9036	2420	13,492	3186
Self-Funded	4172	886	8134	1915	11,987	2580
Small Firms <sup>c</sup>	4187	794	9957	2910	12,524	4182
Large Firms <sup>d</sup>	4603	995	8624	1920	13,128	2536
Fully-Insured	5297	1032	9906	2907	14,942	3771
Small Firms <sup>c</sup>	4960	1055	9886	2980	13,781	3846
Large Firms <sup>d</sup>	4700	906	10,023	2493	14,038	3345
Direct Purchase <sup>b</sup>	2943	2943	5604	5604	8367	3186

<sup>a</sup> Estimates from weighted averages based on number of employees enrolled in health insurance policies by funding arrangement (MEPS, 2008)

<sup>b</sup> Single +1 and Family premium estimates extrapolated using employer-based rates from HMO single premiums from CT Department of Insurance.

<sup>c</sup> Firms with less than 200 employees.

<sup>d</sup> Firms with 200 employees or more.

As discussed above, only policy holders through fully-insured firms and individually purchased insurance fall under the state health insurance mandates. Using insurance policy-type weighted averages; this analysis estimates following premiums. The out-of-pocket premium costs reflect the minimum level of family health care expenditure. The total premium and the insured family’s portion of the premium are in table 4 below.

**Table 4: Average Connecticut Premium and Premium Cost-Sharing Under Mandates**

	Total Premium	Insured’s Amount
	(\$)	(\$)
Fully-Insured Employer-Based	9730	2193
Individual Direct Purchase	5620	5620

Source: See table 3 above.

The impact of these expenses can be understood by examining their share of a family’s income. The Census (2009) Current Population Survey - Annual Social and Economic Supplement (CPS) provides family income quartiles by insurance type.<sup>212</sup> A quartile divides the population into four equal parts. For example, 25% of Connecticut families have incomes below the value of the first quartile (Q1). The median represents the central point where 50% of Connecticut families are above the income level and 50% are below the income level. The data below is for Connecticut families with at least one member below the age of 65 who had private group health insurance and individually purchased health insurance. These figures are gross income before taxes. No data was available to distinguish between fully insured group health insurance and self-insured group health insurance programs. The values reported are for all types of group insurance.

**Table 5: Connecticut Family Income by Quartile and Insurance Type**

	Low (25% quartile)	Middle (50% quartile)	High (75% quartile)
	(\$)	(\$)	(\$)
Employer-Based Group	59,418	100,000	150,450
Individual Direct Purchase	28,176	54,101	106,004

Source: Census (2009) Current Population Survey – Annual Social and Economic Supplement.

These figures reflect the range of incomes within each insurance type. It may be that the ‘average’ or median family does not bear a significant financial burden but lower income families may bear substantial burdens. Based on typical household expenditure patterns, Banthan et al. (2008) define families that spend 10% or more of their income on health insurance and care as high burden households. In their estimates, family health care expenses include the household share of the health insurance premium plus any other out-of-pocket expenses. These calculations are approximate in two ways. First, not all families pay the average premium amount. Lower income families might be expected to purchase less comprehensive insurance which is also less expensive. Second, this analysis includes only expenses associated with a single mandate. Not all families will face these expenses, so the tables show costs for ‘affected populations’ or families that require the service in question. Also, families will have other out-of-pocket expenses such as co-payments for doctors’ visits or prescription medications for the affected individual or for other family members that are not included in this analysis.

<sup>212</sup> Because the CPS is a stratified survey design rather than a random sample, these figures need to be interpreted as approximate.

Further, families who know they need coverage in a specific area may be more likely to purchase a policy with that benefit than those who do not need the benefit. For these reasons, these burden estimates are approximate.

## I. Ostomy Supplies and Appliances

The actuarial analysis found that 10% of ostomy patients currently use supplies costing more than \$1000 per year. The proposed ostomy mandate would increase the current annual minimum coverage of \$1000 to \$5000. For the purposes of this analysis, 20% of ostomy patients are projected to use an average of \$1850 in supplies. The actuarial analysis reports that this change would result in per member per month premium increase from \$0.00 to \$0.03 with an average of \$0.01 for all privately insured individuals. In addition, affected individuals would no longer have to pay an average \$850 out-of-pocket per year for supplies.

Based on the survey of major Connecticut insurers, about 52% of group and individual enrollees have coverage limited to \$1000 and 48% have annual limits greater than the projected \$1850 expenses. Most of this second category have unlimited coverage. For families with unlimited coverage for ostomy supplies, at a 100% rate of coverage, pre-mandate expenses are \$0 for ostomy supplies. For individuals with the \$1000 limit and who use the projected \$1850, their financial burden would be \$850 per year without the mandate. Table I.1 shows the pre-mandate health financial burden for these two groups.<sup>213</sup>

**Table I.1: Pre-Mandate Family Health Expenditure Burden**

Expenses by Insurance Coverage Category and Insurance Market			
	\$1000 Limit	≥\$1000 Limit	
% of population	52%	48%	
<u>Ostomy Supply Cost</u>	\$850	\$0	
<u>Average Premium Share</u>			
Group	\$2193	\$2193	
Individual	\$5620	\$5620	
<u>Total Health Care Expenses</u>			
Group	\$3043	\$2193	
Individual	\$6470	\$5620	
Family Health Care Burden as a Percent of Income			
Income Level	Low	Middle	High
<u>\$1000 Limit</u>			
Group	5%	3%	2%
Individual	23%	12%	6%
<u>&gt;\$1000 Limit</u>			
Group	4%	2%	2%
Individual	20%	10%	5%

<sup>213</sup> See table 3 above for all income quartile levels. These income levels come from a stratified survey sample and the precise levels need to be interpreted with some caution.

This report defines a high burden family as spending 10% or more of their annual income on health care. High burden households are more likely to delay getting needed health care or have unmet health care needs. Pre-mandate, families with individual policies are more likely to be high burden households. This finding is, in part, because they have lower incomes overall and, in part, because they pay a higher portion of their insurance premium.

For those families with the current mandated level of health insurance, \$1000 annual limit; they can expect to spend between 23% and 6% of their incomes on health insurance premiums and ostomy supplies. Families with group insurance and the current mandated limit will spend between 5% and 2% of their income on health insurance premiums and ostomy supplies. This finding suggests group insured are less likely to be a high burden household than those who purchase health insurance directly.

After the mandate, families will face higher premiums but lower ostomy supply expenses. Actuarial estimates for this mandate suggest that annual premiums will rise between \$0.00 and \$0.72 on a per policy basis. Families that purchase insurance directly will pay the entire premium increase and families with group insurance will pay 23% of the premium increase. This premium change is of an order of magnitude that the post-mandate burden is the same as the burden for families that have a  $\geq$ \$1000 limit shown above (table I.1).

Comparing health care burdens, the proposed ostomy supply mandate does decrease financial burdens on all households. Group insureds will now spend between about 1% less of their income on health care and individually insureds will spend 3% to 1% less of their income on health care. Households that were high burden without the health care mandate will still be high burden households without the mandate. The high cost of health insurance for families purchasing insurance directly is the largest contributory to their financial burden.

## II. Prosthetic Parity

The prosthetic parity mandate would require insurers to cover major limb prostheses at a level consistent with Medicare coverage. This coverage would require insurers to pay at least 80% of the cost of a limb after deductible; and to pay for repair and replacement. Coverage cannot be subject to lifetime or other limits and patient out-of-pocket payments cannot be more restrictive than other for other goods and services. The appropriate prosthetic technology for each patient would be at the discretion of the prescribing physician.

There is a wide range of prosthetic technology and associated expense. A prosthetic can range from a specialized sleeve that covers the stump at a cost of \$25 to a prosthetic equipped with sophisticated microprocessor technology at a cost of upwards of \$60,000. Individuals that opt for the first option will not have the same functional abilities for those that opt for a usable prosthetic. For instance, those with lower limb amputation who choose a sleeve will likely be confined to a wheelchair. Individuals in wheelchairs face additional financial and health-related costs such as iatrogenic illness and household access modifications. Factors affecting the prosthetic choice include the amputee's level of physical fitness, willingness to endure physical training, ability to adapt to using a prosthetic and affordability.

The under-65 population is more likely to be suitable candidates for more sophisticated prosthetic technologies instead of a covered stump or wheelchair. They tend to have a higher level of physical fitness and ability to adapt to newer technologies. Also, microprocessor technologies expand the population eligible for prosthetic use because they reduce the physical stamina required to use a prosthetic. This increases the likelihood that all amputees will be able to use newer prosthetic technologies.

This greater functionality comes with a higher price tag (see table II.1 below). For instance, arms capable of tactile sensing that perform sensitive physical actions can cost \$65,000 or more per arm. Another factor impacting price is durability. On average, prosthetic limbs last between two to five years. Frequently, lower cost limbs wear out faster than higher cost limbs. The annualized costs reflect the estimated average life-span of different types of prosthetics. In some cases, it can be more cost-effective to spend more up front on a limb that fits well and is more durable.

**Table II.1: Annualized Cost of Prosthetics**

Prosthetic Type	Estimated Lower Cost Limb	Estimated Annualized Cost	Estimated Higher Cost Limb	Estimated Annualized Costs
	(\$)	(\$)	(\$)	(\$)
Arm	2000	570	65,000 <sup>a</sup>	13,000
Foot	6000	2000	8500	1700
Leg (Knee or Above)	4000	1100	28,000 <sup>a</sup>	5600

Source: Hanger Prosthetics (2009) Personal Communication

<sup>a</sup> Average cost of limbs using microprocessor technology.

Connecticut insurance plans offer a range of prosthetic coverage from no coverage to 100% unlimited lifetime coverage. Roughly 56% of Connecticut private enrollees in fully-insured plans have prosthesis coverage at the level specified by the mandate.<sup>214</sup> For the remaining enrollees, benefits vary substantially from specific spending limits to variable co-payments.<sup>215</sup>

To develop burden estimates, this analysis assumes an average cost of \$8500 for prosthesis for this age-bracket. Clearly, more elaborate prostheses would result in substantially larger financial burdens. For an \$8500 prosthesis, individuals with at least the specified level of coverage pay \$1400 toward their prosthetic, on average. This amount is less than the expected 20% co-payment (\$1700) because some enrollees have lower co-payments. Based on the insurance data available, individuals with less than the proposed coverage would pay an average of \$5030 per prosthesis out-of-pocket. The estimated financial burden for each group is in table II.2 below.

<sup>214</sup> This analysis assumes the maximum level of coverage when insurers report a range.

<sup>215</sup> Some insurers reported the number of enrollees with the proposed level of coverage and incomplete data on those that did not have this level of coverage. Enrollees for whom no data were available were excluded from the average out-of-pocket expense analysis.

**Table II.1: Pre-Mandate Family Health Expenditure Burden**

<b>Expenses by Insurance Coverage Category and Insurance Market</b>			
Coverage Level	at least 80%/20% Co-Pay	Less than 80%/20% Co-Pay	
% of population	56%	43%	
<u>Total Projected Prosthesis Cost</u>	\$8500	\$8500	
<u>Average Prosthesis Co-Payment</u>	\$1400	\$5030	
<u>Average Premium Share</u>			
Group	\$2193	\$2193	
Individual	\$5620	\$5620	
<u>Total Health Care Expenses</u>			
Group	\$3593	\$7223	
Individual	\$7020	\$10,650	
<b>Family Health Care Burden as a Percent of Income</b>			
Income Level	Low	Middle	High
< 80%/20% Co-Pay			
Group	6%	4%	2%
Individual	25%	13%	7%
≥80%/20% Co-Pay			
Group	12%	7%	5%
Individual	38%	20%	10%

Based on an estimated average prosthesis cost of \$8500, low-income group enrollees and all individual-purchase enrollees face a high financial burden in the absence of this mandate. From Bantlin et al. (2008), high burden families pay more than 10% of their income toward health care expenses and are more likely to delay or forgo needed medical care. This finding comes despite the fact only 1% of the total privately fully insured population reported no coverage for prosthetics. This finding suggests some Connecticut families are underinsured against the costs of major limb prosthetics. In contrast, the actuarial analysis found that individuals who purchased prosthetics had an average of 97% of their costs covered based on a national insurance claims database. This could be because people who need prosthetic coverage are more likely to purchase insurance with this coverage. Another possibility is that families with inadequate coverage purchase less expensive prosthetics or go without prosthetics.

The actuarial analysis found the parity mandate would cost between \$0.25 and \$0.45 per member per month. This translates to a premium increase of between \$6 and \$10.80 per policy per year. Table II.3 shows the average burden for enrollees whose level of coverage is raised to meet the mandate requirements. For the \$8500 prosthesis, they pay \$1700 co-pay and their share of the premium

increase. Individuals with at least the mandated level of coverage or more pre-mandate do not change their coverage or burden levels.

**Table II.3: Post-Mandate Health Expenditure Burden for Affected Population**

Family Health Care Burden as a Percent of Income			
Coverage Level	80% / 20% Co-pay		
Income Level	Low	Middle	High
Group	7%	4%	3%
Individual	26%	14%	7%

Imposing prosthetic parity reduces health care burdens. Health care burdens fall between 2% and 12%. Low-income group enrollee families and high-income individual enrollee families are no longer classified as high burden families. A high burden health expense family spends more than 10% of its income on health expenses and is more likely to forgo or delay needed health care (Banthin, et al., 2008). Low and middle income families that purchase insurance directly still pay 4-6% of their income on the prosthetic co-payment. These families may have to opt for less expensive equipment. Overall, the high cost of medically appropriate prosthetics places a high financial burden on families. This mandate would reduce this burden for many families.

### III. Hearing Aids for 13-18 Year Olds

The price of hearing aids varies considerably depending on the style and technology employed. Behind-the-ear (BTE) hearing aids are most frequently recommended for growing youth because the ear molds can be recast to accommodate growth without having to replace the entire hearing aid. In a survey of hearing aid dispensers, Kirkwood (2009) reports that BTE hearing aids cost \$1182, \$1853 and \$2718 for low, medium and high quality. Kirkwood (2009) also reports that up to 81% of individuals will need two hearing aids – doubling the cost. This report assumes an average price of \$2250 per hearing aid. For individuals requiring 2 hearing aids, their costs would be \$4500 on average. Hearing aids typically last between 3 and 5 years (Kirkwood, 2009).

Current legislation requires coverage for a minimum of \$1000 every 2 years for children up to the age of 12. This proposed mandate would expand coverage to children up to age 18. Based on a benefits survey of Connecticut’s insurers, about 66% of private insurance enrollees in fully insured plans have access to at least this level of coverage already. These policies cover anywhere from \$1000 every 24 months to unlimited annual coverage. About a third of Connecticut private insurance enrollees do not have this coverage. Based on a benefits survey of Connecticut’s major insurers, these enrollees do not have any coverage for hearing aids for the age group and bear the full cost of hearing aids out-of-pocket.

**Table III.1: Pre-Mandate Family Health Expenditure Burden**

Expenses by Insurance Coverage Category and Insurance Market				
Number of Hearing Aids	<\$1000 Limit		≥\$1000 Limit	
	1	2	1	2
% of population	6%	27%	13%	54%
<u>Hearing Aid Cost</u>	\$2250	\$4500	\$839	\$2350
<u>Average Premium Share</u>				
Group	\$2193	\$2193	\$ 2193	\$2193
Individual	\$5620	\$5620	\$5620	\$5620
<u>Total Health Care Expenses</u>				
Group	\$4443	\$6693	\$3032	\$4543
Individual	\$7870	\$10,120	\$6459	\$7970

In Connecticut, families without the coverage proposed by the mandate bear the full cost of hearing aids. For this population, one hearing aid will cost \$2250 and two hearing aids will cost \$4500 out-of-pocket. This analysis assumes that individuals needing hearing aids would purchase them in the same year, rather than spreading out the expense over multiple years. Because coverage limits vary for those with at least the proposed-level hearing aid, the average out-of-pocket payment is a weighted average of the amount enrolled families would pay. For one hearing aid, this population will pay an average of \$839 out-of-pocket for one hearing aid and \$2340 for two hearing aids. The total burden on Connecticut families includes out-of-pocket premium expenses and co-payments for one to two hearing aids. See Table III.1 above.

**Table III.2 below shows the estimated percent of income households needed to pay for their health insurance premium and the out-of-pocket cost for hearing aids. These figures are approximate because they do not include non-hearing aid health co-payments and every income level is assumed to face the same average premiums. In reality, lower income households might be expected to buy less expensive health insurance, which is likely less comprehensive. Family incomes are from table 5 above and reflect low (25% of population’s income lies below this amount) middle (50% of population’s income is below this amount), and high (75% of the population’s income is below this amount).**

**Table III.2: Pre-Mandate Health Expense Burdens**

Family Health Care Burden as a Percent of Income						
Coverage Level	<\$1000 Limit			≥\$1000 Limit		
Income Level	Low	Middle	High	Low	Middle	High
1 Hearing Aid						
Group	7%	4%	3%	5%	3%	2%
Individual	28%	15%	7%	23%	12%	6%
2 Hearing Aids						
Group	11%	7%	4%	8%	5%	3%
Individual	36%	19%	10%	28%	15%	8%

Following Banthan et al. (2008), this report defines a high health financial burden family as having 10% or more of their annual income devoted to health care expenses. High burden households are more likely to delay getting needed health care or have unmet health care needs. For a single hearing aid, low and middle income households, who purchase health insurance directly, bear a high burden. If two hearing aids are needed, all households purchasing health insurance directly and low-income group insureds have high financial burdens.

An actuarial analysis concludes extending a minimum of \$1000 coverage every 2 years for 13-18 year olds would cost between \$0.04 and \$0.12 per member per month to premiums. On an annual basis, these costs would be \$0.96 to \$2.88 per year per average policy. Individuals insured directly would pay the entire premium increase while group insureds would pay 23% of this increase on average. Assuming insurance companies that currently offer at least this much coverage do not reduce their coverage levels, this premium change is not large enough to affect the burden calculated above for those with the proposed level of coverage. For the 33% of private insurance enrollees who do not have coverage, their burdens would be reduced (See table III.3 below).

**Table III.3: Post-Mandate Health Expenditure Burden for Affected Population**

Family Health Care Burden as a Percent of Income			
Coverage Level	\$1000 Every 24 Months		
Income Level	Low	Middle	High
1 Hearing Aid			
Group	6%	3%	2%
Individual	24%	13%	6%
2 Hearing Aids			
Group	10%	6%	4%
Individual	32%	17%	9%

Low income households would reduce their burden by 1-4% depending on whether they are group or individually insured. Families that faced, high burdens before the mandate would continue to be deemed ‘high burden’ families with the exception of high income families who purchase health insurance individually. At relatively low cost, this mandate would lessen the burden on families needing purchase hearing aids, but purchasing hearing aids remain a significant expense for affected families.

#### IV. Hair Prosthesis for People with Alopecia Areata

This proposed mandate would cover the cost of hair prostheses, up to \$350, for people with a diagnosis of alopecia areata. Currently, Connecticut has a mandate that covers wigs for cancer patients who lose their hair up to \$350. Alopecia areata is an auto-immune disease that causes individuals to lose hair in patches. The extent of the condition can range from a small patch to total hair loss including eyelashes and eye brows. Total hair loss is generally permanent. Patchy hair loss may go away over time but often recurs over time. Wigs are the primary treatment option for those with significant hair loss.

Like other prostheses, wigs of various quality and prices can be purchased. An inexpensive wig of synthetic hair can be purchased for \$100-\$500. With proper care, these wigs can last 2-3 months. The high quality wigs recommended for individuals with total hair loss cost \$3000-\$5000. These wigs use real human hair and last 2-4 years. The wig cap is silicone and attaches to the head with a vacuum rather than tape or glue. These wigs look natural and reduce irritation to the scalp.

For individuals with serious and ongoing hair loss, it is worth considering the annualized costs of hair prosthesis. At a minimum, an individual can purchase several of the cheapest synthetic wigs for \$400 to \$600 a year depending on wear. The least expensive high-end wig would cost \$750 on an annualized basis if they were able to obtain the maximum wear from it. Table IV.1 below shows the range of hair prosthesis prices based on minimum costs with maximum wear and maximum cost with minimum wear.

**Table IV.1: Annualized Costs of Wigs**

	Per Unit Cost		Annualized Cost	
	Low	High	Low	High
Synthetic Hair	\$100	\$500	\$400	\$3000
Real Hair	\$3000	\$6000	\$750	\$3000

Source: National Alopecia Areata Foundation (2009) Personal Communication

Despite the similarity in the annualized costs, affected individuals would have a financial incentive to purchase the cheaper less durable wigs. By purchasing the lower cost wigs, individuals would be able to claim the \$350 entitlement annually. Under this mandate, individuals purchasing the preferred higher-quality wigs would only be able to claim the \$350 benefit in the year it is purchased even though they would have the use of the wig for multiple years.

Based on a survey of major Connecticut insurers, no enrollees currently have any coverage for wigs for a diagnosis of alopecia areata. One insurer reported that they offer a product that includes an option for a \$5000 biennial wig benefit but they have not had any groups opt for this coverage.

To estimate the family burden, this analysis uses an average figure of \$350 per year. Not all individuals diagnosed with alopecia areata have need of a wig or have need of a wig over the course of an entire year. Others would be better served by a higher quality more durable piece. The \$350 estimate is consistent with the actuarial analysis. It should be regarded as a lower bound estimates as wig costs may be substantially higher for severely affected households.

**Table IV.2: Pre-Mandate Family Health Expenditure Burden**

<b>Expenses by Insurance Coverage Category and Insurance Market</b>			
No Coverage			
% of population	100%		
<u>Wig Supply Cost</u>	\$350		
<u>Average Premium Share</u>			
Group	\$2193		
Individual	\$5620		
<u>Total Health Care Expenses</u>			
Group	\$2543		
Individual	\$5970		
<b>Family Health Care Burden as a Percent of Income</b>			
Income Level	Low	Middle	High
Group	4%	3%	2%
Individual	21%	11%	6%

Pre-mandate no Connecticut households have coverage for wigs for alopecia areata. The burden of the wigs by themselves range from 0.6% to 0.2% of income for group insurance enrollees and 1.2% to 0.3% of income for individual purchase enrollees. Combined with the average out-of-pocket premium shares, group insurance enrollees can expect to spend 4% to 2% and individual purchase enrollees can expect to spend 21% to 6% of their income on health care expenditures.

**Table IV.3: Post-Mandate Health Expenditure Burden for Affected Population**

<b>Family Health Care Burden as a Percent of Income</b>			
Coverage Level	\$350 Annually		
Income Level	Low	Middle	High
Group	4%	2%	1%
Individual	20%	10%	5%

The actuarial analysis predicts a \$350 annual wig benefit will increase premiums \$0.00 to \$0.04 per member per month. On an annual per policy basis, this is an increase of \$0.00 to \$0.96. Out-of-pocket wig expenditures would decrease \$350 per year for affected populations. Table IV.3 above presents the net effect of these two changes on family health care burdens.

Comparing tables IV.2 and IV.3, the impact of the wig mandate would appear to be marginal. In most cases the change is less than 1% of income. Low and middle income individually insureds faced a high burden of health care expenditures (>10% of family income) before the mandate and continue to

face a high burden of health care expenditures after the mandate. Some caution in interpreting these findings is advised because, for severely affected individuals, the cost of wigs may be much higher than the estimated \$350.

## V. Human Leukocyte Antigen (HLA) Testing and Bone Marrow Registration

The National Marrow Donor Program (NMDP) requires preliminary HLA typing to register on the NMDP list as a potential donor. The NMDP participates with other bone marrow registries internationally to provide a list of potential bone marrow matches. Physicians with patients in need of a bone marrow transplant can search the international database to find prospective donors. Generally, this search occurs when a related or local bone marrow donor cannot be found. Potential matches then undergo patient specific donor matching tests to get a close a match as possible and a physical exam to determine if they are healthy enough to be a donor. This additional test is at the expense of the patient. Under this mandate, insurers would provide coverage for the initial HLA testing.

Currently, 35% of Connecticut fully-insured enrollees have coverage for HLA testing on request or under medical review. As reported by insurers, the typical co-pay was 20% of the cost. The remaining 65% enrolled in fully-insured group or individual plans do not have coverage. Patients who do not have coverage or wish to avoid the co-payment can get tested for free at a NMDP bone marrow drive or through a free mail-in kit. These free tests are supported by donations with a base cost of \$52 per test. In contrast, a national claims database reports an average cost of \$240 per test over a range of tests, with an average cost of \$647 per unique patient. This data may include patients searching for donors as well as initial and follow-up tests for potential donors.

For the person wishing to register as a potential donor, the least cost option is currently free. This option may involve queuing costs associated with attending a drive or registering via the phone, mail or internet. Individuals who go through their insurance may end up with positive out-of-pocket costs. A 20% out-of-pocket co-payment on an average \$240 test would be \$48. Under the proposed mandate, insurers would not be restricted to a 20% co-payment but could charge a higher co-payment if that is consistent with their fee schedules.

From the perspective of household health care burden, it makes sense to impute the least cost alternative, \$0 per family per test. If insurers do charge a co-pay on HLA testing, potential donors may still opt for free testing to avoid an out-of-pocket cost. From this perspective, cost-conscious families could face a burden of \$0 before and after the mandate. The actuarial analysis estimates the costs associated with additional registrants, matching testing and bone marrow transplants would raise annual per policy premiums between \$0 and \$2.40.

The net change for this mandate would be just the change in the insureds’ share of the premium. This change is small enough that it does not change the percent of family income spent on health care. See table V.1 below for health care burdens.

**Table V.: Pre- and Post-Mandate Health Expenditure Burden for Affected Population**

Family Health Care Burden as a Percent of Income			
Income Level	Low	Middle	High
Group	4%	2%	1%
Individual	20%	10%	5%

Low- and middle-income enrollees with individual insurance purchased directly continue to have high health expense burdens before and after the mandate. They spend more than 10% of their income on health insurance premiums; irrespective of no additional out-of-pocket payments. Banthin et al. (2008) suggest that families paying more than 10% of their income on health care expenditures face high financial burdens and may be more likely to have unmet medical needs or delay getting needed medical care because of expense. These figures need to be interpreted cautiously, however, because lower income households may not face average health insurance premium prices but may opt for less comprehensive and less expensive plans. The HLA testing mandate may serve a broader social need to encourage donor registration but it would not appreciably change the family financial burden.

## VI. Multiple Colonoscopies

This proposed mandate would eliminate any out-of-pocket payments, including deductible amounts, for individuals required to have more than one colonoscopy in a given enrollment year. Based on a national private insurance claims database, 2.8% of the population has one or more colonoscopies in a given year and 2.6% of these have more than one colonoscopy. These figures represent those who currently get the treatment through their health care coverage. This is less than 0.01% of the population at large. Most of these individuals have two colonoscopies but a few have more than two. Multiple colonoscopies may be administered because of (1) incomplete examination in the first colonoscopies, (2) monitoring after suspicious findings or (3) post-colon cancer surgery surveillance.

Based on this same national database, the average out-of-pocket payment for individuals that have one colonoscopy is \$175.50, including co-insurance, co-payments and deductible payments. Individuals who have more than one colonoscopy pay \$98.37 out-of-pocket, on average, toward all of their colonoscopies. Individuals in this second category likely have greater overall health expenses and have paid down a larger portion of their deductible than those in the first category. For this reason, the total out-of-pocket payments are lower for this group. On average, the total, out-of-pocket, cost for the second or subsequent colonoscopies is \$47.52.

Most insurers in Connecticut do not exempt second or later colonoscopies from co-insurance, co-payments and deductibles. Insurers for 12% of Connecticut private health insurance enrollees were unable to provide benefit information on this topic. Out of the remaining 88% enrollees, 87% of enrollees' insurance did not provide this benefit and 13% did.

On average, the impact of this mandate on family health finance burdens is imperceptible. Removing all out-of-pocket payments for repeat colonoscopies would increase premiums by \$0.18 on an annual per policy basis based on the actuarial analysis. The average additional burden for the affected families is \$47.52. The percent of family income spent on health care does not change more than 0.15%. Table VI.1 shows the family health care burden with and without the mandate for affected households.

**Table VI.1 : Pre- and Post-Mandate Health Expenditure Burden for Affected Population**

Family Health Care Burden as a Percent of Income			
Income Level	Low	Middle	High
Group	4%	2%	1%
Individual	20%	10%	5%

While the average impact may be imperceptible, it is important to interpret these results with some caution. Individuals who have experienced substantial sickness may be temporarily unable to work and may have low incomes. Families with low to middle incomes who purchase individual health insurance policies already have a high health care burden. Any additional expenses may cause them to not get or delay needed health care.

## VII. Financial Incentives for Wellness Programs

This proposed mandate would require insurers to offer a plan including financial incentives to participate in ‘wellness’ programs. Both ‘wellness’ programs and ‘financial incentives’ encompass a broad array of possibilities. The KFF / HRET (2009) Employer-Sponsored Benefit Survey asked employers about the wellness benefits and financial incentives currently on offer. Table VII.1 shows national rates of benefit offers.

**Table VII.1 National Employer Wellness Benefits by Firm Size and Funding Type**

	Firms 3-199 Workers			Firms 200 or More Workers		
	All	Fully-Insured	Self-Funded	All	Fully-Insured	Self-Funded
Gym Membership Discounts or On-Site Exercise Facilities	27%	27%	22%	63%	58% <sup>b</sup>	68% <sup>b</sup>
Smoking Cessation Program	28%	28%	31%	61%	55% <sup>b</sup>	67% <sup>b</sup>
Web-based Resources for Healthy Living	34%	34%	37%	79%	78%	79%
Wellness Newsletter	34%	35%	25%	59%	59%	59%
Personal Health Coaching	12%	12%	10%	36%	35%	37%
Weight Loss Programs	24%	24%	24%	53%	47% <sup>b</sup>	58% <sup>b</sup>
Classes in Nutrition/Healthy Living	19%	17%	38%	47%	45%	49%
Offer at Least One Specified Wellness Program <sup>a</sup>	57%	55% <sup>b</sup>	80% <sup>b</sup>	93%	91%	95%
Other Wellness Program	11%	11%	9%	36%	31% <sup>b</sup>	42% <sup>b</sup>

Source: KFF/HRET (2009) Employer-Sponsored Benefits Survey

<sup>a</sup> Includes: Includes the following wellness programs: weight loss programs, gym membership discounts or on-site exercise facilities, smoking cessation program, personal health coaching, classes in nutrition or healthy living, web-based resources for healthy living, a wellness newsletter or any other benefit deemed by the employer to be a wellness program. <sup>b</sup> Estimates between fully-insured and self-funded programs are statistically different at p<0.05.

On a national basis, large firms were more likely to offer all types of wellness benefits either directly or through their health care plans. Self-funded insurance programs were more likely to offer gym use facilities, smoking cessation programs, weight loss programs and wellness programs in general at large firms. Gym benefits could include memberships or on-site facilities. Self-funded insurance programs are not subject to state mandates, and thus, arguably, have more flexibility in developing benefit packages. The rate at which they offer wellness programs may indicate the potential demand for these programs unconstrained by state laws.

**Table VII.2 Wellness Program Financial Incentives for Northeast Firms by Firm Size and Funding Type**

	Firms 3-199 Workers			Firms 200 or More Workers		
	All	Fully Insured	Self-Funded	All	Fully-Insured	Self-Funded
Workers Pay Smaller Percentage of the Premium	4%	4%	6%	8%	3% <sup>b</sup>	13% <sup>b</sup>
Workers Have Smaller Deductible	1%	1%	0%	2%	2%	1%
Receive Higher HRA or HSA Contributions <sup>a</sup>	1%	1%	NSD	6%	5%	6%
Receive Gift Cards, Travel, Merchandise, or Cash	9%	9%	10%	27%	23% <sup>b</sup>	30% <sup>b</sup>

Source: KFF/HRET (2009) Employer-Sponsored Benefits Survey

NSD – Sample size was not sufficient to report.

<sup>a</sup> Among firms that offer an HDHP/HRA or HSA-qualified HDHP.

<sup>b</sup> Estimates between fully-insured and self-funded programs is statistically different at  $p < 0.05$ .

Table VII.2 shows that number of firms that offer financial incentives associated with their wellness programs for the northeast region only. Contributions for Health Savings Accounts (HSAs) are only valid for firms offering High Deductible Health Plans (HDHP). The relatively small number offering this incentive is predicated on the small number of firms that offer HDHP. Even so, financial incentives lag behind wellness programs in popularity. Small firms are less likely to offer financial incentives. Large self-funded firms are more likely to offer financial incentives with the most popular being smaller premiums or direct rewards. Differences are less pronounced among small firms, in part, because relatively few small firms self-insure.

An important note is that these benefits may or may not be offered as part of the firm’s health insurance plan. Firms may offer these benefits directly or through a contract with a firm specializing in these types of programs. Employers have an incentive to promote wellness among their employees that goes beyond reducing health care costs. According KFF/HRET (2009), 61% of small firms and 80% of large firms believe that wellness benefits increase worker productivity. Among all firms, 35% reported that improving worker productivity or reducing absenteeism was the main reason they had wellness programs. In contrast, 10% of firms had wellness programs to reduce health care costs (KFF/HRET, 2009). The most popular reason for having wellness programs (36% of all firms) was the health insurance plan included a wellness program (KFF/HRET, 2009). These findings suggest wellness programs serve multiple purposes.

A survey of major Connecticut insurers examined the rate at which wellness programs and financial incentives are part of Connecticut policies. Data is available for groups and firms that self-insure and use one Connecticut’s major insurers as an administrative service organization (ASO). No direct purchase policy data is available. About 77% of enrollees in fully-insured group plans have a wellness program. For insurers reporting ASO data, 81% of those covered reported wellness benefits. The survey found 29% of fully-insured plans and 9% of obtainable ASO plans had financial incentives associated with their wellness plan. The survey relied on the mandate’s general wording so the results may reflect this ambiguity.

The burden on families from this mandate is not immediately evident. The mandate requires insurers to offer a plan with financial incentives. It does not require any firms to purchase these plans. Based on regional figures, financial incentives for wellness lag behind wellness programs and their impact on long term health status has yet to be unequivocally established. Wellness incentives associated with lifestyle

and prevention measures may take a long time to save enough in averted costs to pay for themselves. The ultimate benefit to these programs may accrue to public programs like Medicare as people age. The cost trade-off is people live longer, requiring more routine care, but avert costly and possibly terminal episodes of acute care.

For the individual, the greatest benefit may be the increased productivity and quality of life, which is discussed elsewhere in this report. As their health improves, individuals may reduce out-of-pocket expenditures. It also is possible, however, that increased co-payments from more testing and health care visits associated with increased levels of ‘well care’ may offset these financial gains. It is beyond the scope of this analysis to estimate what these changes might be in a statewide population.

The actuarial analysis suggests premiums may increase 0% to 3% depending on whether enrollees elect for the wellness program with financial incentives. A 3% premium increase per policy is an annual increase of \$292 for group plans. Employees typically pay about 22% of their health care premium. This results in an annual out-of-pocket payment of \$66 per policy per year. This estimate does not include any offsetting financial incentives enrollees might receive as it is unclear what the nature of these incentives might be. Table VII.3 reports the burden associated with the maximum premium increase. The insurer survey provided only data on group plans and, consequently, only the impact on individual plan premiums is shown.

**Table VII.3: Post-Mandate Health Expenditure Burden for Affected Population**

<b>Expenses by Insurance Coverage Category and Insurance Market</b>			
Wellness & Financial Incentives	No Change	Add W & F Incentives	
% of population	29%	71%	
Wellness Program Premium Change	\$0	\$66	
<u>Average Premium Share</u>			
Group	\$2193	\$2193	
<u>Total Health Care Expenses</u>			
Group	\$2193	\$2259	
<b>Family Health Care Burden as a Percent of Income</b>			
Income Level	<b>Low</b>	<b>Middle</b>	<b>High</b>
No Change			
Group	4%	2%	2%
Add W & F Benefit			
Group	4%	2%	2%

For group enrollees, there is no appreciable change in the percent of income spent on health insurance. Changes in out-of-pocket health spending range from a high of 0.1% for low-income families and 0.04% for high-income families. On average, none of these families falls in the high health-expense burden category before or after the mandate. Following Banthin, et al. (2009), families face high health burdens if they spend 10% or more of their income on health expenses. Families with a high health burden are more likely to forgo or delay needed health care. Based on this analysis, this mandate does not appear to create a significant burden for households and may result in long term health benefits.

The proposed mandates represent a range of possible financial burdens. Hearing aids and prosthetics are high price items. The expense for medically optimal devices may prove prohibitive for many households under the current insurance level. Some families may continue to face high health burdens if even these mandates are enacted. Ostomy supplies and wigs may create a large financial burden depending on the family's particular level of need for these supplies. The numbers substantially affected by these mandates would be small. Human Leukocyte Testing (HLA) and second and subsequent colonoscopy co-payments are smaller ticket items but may be justified on other bases. In the case of the wellness mandate, the projected expenses could go either way for an individual household. The burden of offering financial incentives is small for group insureds.

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## Appendix IV: Glossary of Terms and Acronyms

AK: Above the knee prosthetic device.

Alopecia Areata: A disorder in which there is loss of hair, resulting in patches of baldness but with no scarring of the affected area. Alopecia totalis affects the entire scalp; alopecia universalis causes loss of all body hair.

ASO: Administrative services only.

BK: Below-the-knee prosthetic device

BMT: Bone marrow transplant.

CCEA: Connecticut Center for Economic Analysis.

CID: Connecticut Insurance Department.

Cochlear Implant: a surgically implanted prosthetic device that uses electrical stimulation to provide hearing; m for persons with profound bilateral hearing loss who get little or no benefit from hearing aids.

Colonoscopy: a form of endoscopy performed on the entire colon for the purpose of screening for and preventing colorectal cancer.

Colorectal cancer: cancer of the colon or of the rectum.

Committee: Committee on Insurance and Real Estate, CT General Assembly.

CPHHP: Center for Public Health and Health Policy.

DME: Durable medical equipment.

DPH: Department of Public Health.

DSS: Department of Social Services.

Hematopoietic: of, relating to, or involved in the formation of blood cells.

HMO: Health Maintenance Organization.

HLA: Human leukocyte antigen.

HLA testing: a DNA or blood test done to determine potential tissue matching between potential marrow or organ donors and patients who need a marrow or organ transplant.

Human leukocyte antigen: one of a group of genes that is important to the immune function of the body.

IC: Ingenix Consulting.

MCO: Managed Care Organization.

Medical trend: Medical cost inflation.

NMDP: National Marrow Donor Program.

Ostomate: A person who has undergone ostomy surgery.

Ostomy: A surgically created opening in the body that allows for the discharge of bodily wastes.

PMPM: cost per member per month.

Prosthetic device: An artificial limb used to improve functionality and mobility following amputation of a limb or in place of a missing limb resulting from birth defect.

Polyp: a usually nonmalignant growth or tumor protruding from the mucous lining of an organ such as the nose, bladder, or intestine, often causing obstruction.

Polypectomy: surgical removal of a polyp.

Sigmoidoscopy: a form of endoscopy of the lower portion of the colon.

Stoma: the end of the ureter or small or large bowel that protrudes through the abdominal wall allowing passage of bodily wastes.

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