Review and Evaluation of Proposed Legislation Entitled: An Act Relative to Women's Health and Cancer Recovery Senate Bill 896

Provided for The Joint Committee on Public Health

December 2010

Deval L. Patrick, Governor
Commonwealth of Massachusetts

Timothy P. Murray
Lieutenant Governor

JudyAnn Bigby, Secretary
Executive Office of Health and Human Services

David Morales, Commissioner
Division of Health Care Finance and Policy

Table of Contents

Notes	iii
Executive Summary	1
Introduction	7
Background	9
Methodological Approach	16
Summary of Findings	19
Endnotes	24

Appendix:
Actuarial Review of Massachusetts Senate Bill 896, An Act Relative to Women's Health and Recovery

Notes

This report was prepared by the Division of Health Care Finance and Policy (DHCFP) pursuant to the provisions of M.G.L. c. 3 § 38C which requires DHCFP to evaluate the impact of mandated benefit bills referred by legislative committee for review, and to report to the referring committee. The Joint Committee on Public Health referred Senate Bill 896 (S.896) "An Act Relative to Women's Health and Cancer Recovery" to DHCFP for review.

Executive Summary

In Context

In preparing for this review and evaluation of Senate Bill 896, DHCFP surveyed seven commercial fully-insured health plans that could be affected by the proposed bill. DHCFP asked the health plans if the proposed legislation would have a "significant impact" on current coverage levels for their patients. Most of the fully-insured health plans responded that the proposed bill should require no changes to current coverage requirements relative to hospital stays and breast reconstruction surgery including prosthetic devices. Most of the health plans also indicated that S. 896 would introduce additional coverage requirements relative to providing coverage for lymphedema treatments and, to a lesser extent, for second medical opinions.

Overview of Current Law and Proposed Mandate

Senate Bill 896, "An Act Relative to Women's Health and Cancer Recovery" contains two major types of provisions: (1) requirements to provide coverage; and (2) protections for breast cancer patients. The proposed mandate would apply to the fully-insured market, Health Maintenance Organizations (HMOs), and Blue Cross Blue Shield plans, as well as the Group Insurance Commission (GIC).

Overview of Current Law and Proposed Mandate

The proposed bill would require that fully-insured health plans provide coverage for: (1) "a minimum hospital stay for such period as is determined by the attending physician in consultation with the patient to be medically appropriate for patients undergoing a lymph node dissection or a lumpectomy or a mastectomy for the treatment of breast cancer"; (2) second medical opinions by an appropriate specialist; (3) breast reconstruction surgery including prostheses and physical complications of mastectomy, including lymphedemas; and (4) treatment of lymphedema.[1]

Patient Protections

In addition, addition to the coverage provisions, S. 896 would also establish two kinds of patient protections. These protections are discussed in more detail in the Appendix for their financial impact on health plans. The first kind of protection addresses the matter of cost sharing. S. 896 would mandate that cost sharing is consistent with those established for other benefits. The second kind of protection deals with provider incentives. S. 896 would prohibit insurers from denying coverage or access to treatments for breast cancer covered under the bill, including designing incentives for providers that would conflict with the intent of the bill.

Additional Coverage for Treating Lymphedema and Second Opinion

Overall, most of the fully-insured health plans anticipate no changes to their current coverage, with the exception of added requirements for lymphedema treatments and, to a lesser extent, second medical opinions. The most significant benefit that S. 896 offers is coverage for breast reconstruction surgery, which health plans already provide in conformance with the federal Women's Health and Cancer Rights Act (WHCRA) of 1998.

Under the federal WHCRA, which is also known as the federal "Breast Reconstruction" law, all health insurers that provide coverage for mastectomies must provide coverage for the reconstruction of the breast on which the mastectomy was performed, including surgery and reconstruction of the other breast to produce a symmetrical appearance, and prostheses and treatment of physical complications at all stages of the mastectomy including lymphedema.

The language of S. 896 relative to breast reconstruction primarily parallels the federal WHCRA. However, S. 896 would lead to additional coverage requirements for most health plans due to the level of specificity for treating lymphedema that is included in S. 896. The federal law is largely silent with respect to specifying the standard for treating lymphedema. Note that Massachusetts has no jurisdiction to regulate the coverage provided by the health plans in the absence of a conforming state law. Therefore, the state is unable to provide any further clarification on the general requirements of the federal law relative to treating lymphedema.

See Table 1 for a comparison between S. 896 and the federal WHCRA. The Commonwealth does not currently have the statutory authority to require that fully-insured health plans provide coverage for any of the mandated benefits of the WHCRA that overlap with the provisions included in S. 896.

Table 1: Coverage Requirements for Senate Bill 896 Relative to WHCRA

S. 896	Coverage Requirement under S. 896	Does the Federal Law Already Cover the Benefit Offered under S. 896
Minimum Hospital Stays	Coverage for minimum hospital stays for patients undergoing mastectomies, lumpectomies and lymph node dissection for the treatment of breast cancer, as determined by the physician in consultation with the patient to be medically appropriate	**No. New state requirement.** WCHRA does not require minimum hospital stays.
Second Medical Opinions	Coverage for a second medical opinion by an appropriate specialist, including coverage from non-participating providers.	**No. New state requirement.** WCHRA does not require second medical opinions.
Breast Reconstruction Surgery	All stages of reconstruction of the breast on which the mastectomy has been performed. Surgery and reconstruction of the other breast to produce a symmetrical appearance. Prostheses and physical complications of mastectomy, including lymphedemas.	Yes. State proposed requirement conforms to federal standard.
Lymphedema Treatment	Coverage for equipment, supplies, complex decongestive therapy, and outpatient self-management training and education for the treatment of lymphedema, if prescribed by a health care professional.	**Mixed. New state requirement** relative to setting a standard for the treatment of lymphedema.

Interpretation of the Language in the Context of Legislative Intent

Senate Bill 896 proposes a set of mandated requirements affecting all fully-insured commercial health plans relative to women's health and cancer recovery. According to legislative staff, the intent of the proposed bill is to restrict these new requirements to patients with breast cancer. DHCFPnotes that the language of the proposed bill generally agrees with that intent. It is important to note, however, that the language of the proposed bill does not align with the legislative intent to require health insurers to provide coverage for second opinions and the treatment of lymphedema for patients with breast cancer. The proposed bill, as currently drafted, would cover second opinions for all cancer patients and require coverage for lymphedema therapy and equipment for all insured individuals, regardless of whether they had any form of cancer. In this report, DHCFP resolves this inconsistency between the intent and the language by proceeding with a review and evaluationof the proposed mandate requirements as they would apply only to patients with breast cancer.

Methodology for Financial Impact Analysis

DHCFP prepared this review and evaluation of S. 896 by conducting interviews with legislative staff, insurers, providers, and advocates, reviewing the relevant literature, interviewing experts relative to insurance coverage for treatment of breast cancer, and conducting an actuarial analysis of the fiscal impact of S. 896 (see Appendix).

DHCFP's analysis focused on examining: (1) the key differences between current laws and the proposed bill; (2) the key differences between the proposed bill and current health insurance coverage levels for breast cancer treatment; and finally, (3) how the demand for second medical opinions and lymphedema treatments could increase current utilization levels.

1. Comparison between current laws and S. 896: DHCFP focused on a comparison between the federal WHCRA and Senate 896. Included in S. 896 is a broader set of mandate requirements than the federal WHCRA. The language of S. 896 conforms to the federal law with regard to coverage for breast reconstruction surgery, but includes coverage for breast cancer treatment that is currently not covered under the federal law. Those treatments for breast cancer that are currently not covered under federal law include: minimum hospital stays for mastectomies, lumpectomies, and lymph node dissection, and secondary consultations. Although the federal legislation includes coverage for treating lymphedema, the WHCRA does not currently provide for the level of coverage with the level of specificity that is provided for under S. 896. S. 896 proposes that health insurers provide coverage for treating lymphedema by including coverage for equipment, supplies, complex decongestive therapy, and outpatient self-management training and education.

2. Comparison between S. 896 and private insurance coverage: In practice, fully-insured health plans provide coverage for all minimum hospital stays for mastectomies, lumpectomies, and lymph node dissection for the treatment of breast cancer; second medical opinions, breast reconstruction surgery, prosthetic devices, and the treatment of lymphedema. In response to the Division's survey, the majority of health insurers did not anticipate any significant changes to their coverage levels as compared to current coverage, with the exception of coverage for the treatment of lymphedema therapy and, to a lesser extent, coverage for second medical opinions.

3. Effects on coverage for second medical opinions and demand for lymphedema treatments: Based on these comparisons, DHCFP focused on the effect of S. 896 on current coverage levels by health plans relative to second medical opinions and treating lymphedema. The methodology used by DHCFP's consultants to measure their marginal impact on costs is provided in the Appendix of this report.

   With regard to estimating the impact of expanding coverage for lymphedema treatments, DHCFP's analysis includes such factors as: (1) the overall rate of demand for lymphedema treatments among patients with breast cancer; (2) the relative distribution of users by type of user (light, moderate and heavy user of lymphedema treatments) and their demand for treatment; (3) the corresponding estimated units of physical and occupational therapy based on setting and corresponding estimated demand for supplies (bandages, compression sleeves, and night-time sleeves) required to treat light, moderate and heavy users of treatment; and finally (4) the cost per unit of service or supplies.

Three different impact scenarios were developed – low, middle, and high – to present a range of the possible impact of the proposed mandate on premiums and total health plan expenditures. The Appendix provides the financial results for fully-insured health plans. Also, refer to pages 19-20 of this report for a complete discussion on the medical efficacy of treatment options.

Results of Financial Analysis

In 2011, the projected increase in spending that would result from S. 896 ranges from .002 percent to .03 percent of premiums or $300,000 to $3.25 million. The impact on per member per month (PMPM) premiums ranges from $.01 to $.11.

The five-year impact results are displayed in Exhibit 1. In 2011, three scenarios – low, middle and high – were modeled resulting in estimated increased total spending (including both claims spending and administrative expenses) of $300,000, $1.32 million and $3.25 million, respectively. The five-year total of these three scenarios resulted in estimated increased total spending of $1.62 million, $7.0 million, and $17.2 million. (See the Appendix for more detail on the results, including results for the Group Insurance Commission (GIC).

Exhibit 1: Estimated Cost of Impact of Senate Bill 896 on Fully-Insured Health Care Premiums (2011-2015)

	2011	2012	2013	2014	2015	Total
Fully-Insured Enrollment (000s)	2,402	2,399	2,398	2,396	2,395	—
Low Scenario						
Annual Impact Claims (000s)	$270	$278	$286	$294	$303	$1,430
Annual Impact Administration (000s)	$37	$38	$39	$40	$41	$195
Annual Impact Total (000s)	$307	$315	$325	$334	$344	$1,625
Premium Impact (PMPM)	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01
Middle Scenario						
Annual Impact Claims (000s)	$1,163	$1,196	$1,231	$1,267	$1,305	$6,162
Annual Impact Administration (000s)	$159	$163	$168	$173	$178	$840
Annual Impact Total (000s)	$1,321	$$1,359	$1,399	$1,440	$1,483	$7,003
Premium Impact (PMPM)	$0.05	$0.05	$0.05	$0.05	$0.05	$0.05
High Scenario						
Annual Impact Claims (000s)	$2,860	$2,942	$3,029	$3,118	$3,210	$15,159
Annual Impact Administration (000s)	$390	$401	$413	$425	$438	$2,067
Annual Impact Total (000s)	$3,250	$3,343	$3,442	$3,543	3,647	$17,226
Premium Impact (PMPM)	$0.11	$0.12	$0.12	$0.12	$0.13	$0.12

Definitions

The following definitions were derived from the National Cancer Institute of the U.S. National Institutes of Health.

- Breast Cancer: Cancer that forms in tissues of the breast, usually the ducts (tubes that carry milk to the nipple) and lobules (glands that make milk). It occurs in both men and women, although male breast cancer is rare.
- Breast Reconstruction: Surgery to rebuild the shape of the breast after a mastectomy.
- Complex decongestive therapy: Treatment to reduce lymphedema (swelling caused by a buildup of lymph fluid in tissue). This therapy uses massage to move the fluid away from areas where lymph vessels are blocked, damaged, or removed by surgery. The affected area is then wrapped in a special bandage. Later, a compression garment (tight-fitting, elastic piece of clothing) is worn to keep fluid from building up again.
- Lumpectomy: Surgery to remove abnormal tissue or cancer from the breast and a small amount of normal tissue around it. It is a type of breast-sparing surgery.

- Lymph node dissection: A surgical procedure in which the lymph nodes are removed and a sample of tissue is checked under a microscope for signs of cancer. For a regional lymph node dissection, some of the lymph nodes in the tumor area are removed; for a radical lymph node dissection, most or all of the lymph nodes in the tumor area are removed. Also called lymphadenectomy.
- Lymphedema: A condition in which extra lymph fluid builds up in tissues and causes swelling. It may occur in an arm or leg if lymph vessels are blocked, damaged, or removed by surgery.
- Mastectomy: Surgery to remove the breast (or as much of the breast tissue as possible).

Introduction

The purpose of S. 896 is twofold: (1) to establish a law in Massachusetts that conforms to the federal Women's Health and Cancer Rights Act (WHCRA) enacted in 1998, otherwise known as the federal "Breast Reconstruction" law; and (2) to expand the level of coverage provided under WHCRA for patients with breast cancer by requiring that health plans provide coverage for the following services: minimum hospital stays in accordance with physician-directed care, second medical opinions from participating and non-participating providers, and expanded coverage for treating lymphedema. Massachusetts does not have a law that conforms to the federal WHCRA. However, over 35 states have enacted some type of breast reconstruction law in near parallel to the federal WHCRA of 1998. Many other states have also enacted laws to mandate that health plans provide coverage for a minimum hospital stay following a mastectomy, with wide variation in minimum hospital stays from 24 to 72 hours. At the federal level, the Congress is currently considering legislation to require health plans to provide a minimum hospital stay of 48 hours post mastectomy. About 20 states have enacted laws to mandate coverage for lymphedema treatments for patient post mastectomy.

This introductory section summarizes the scope of the current federal WHCRA of 1998 and describes how private insurance coverage for the treatments for breast cancer would change under the proposed bill.

Summary of Current Law

Under the federal WHCRA of 1998, most group health insurance plans that cover mastectomies also cover breast reconstruction.[2] The law does not apply to Medicare or Medicaid. The law would apply to all fully-insured health plans surveyed for this report. The U.S. Departments of Labor and Health and Human Services are the federal agencies with responsibility for enforcing WHCRA.

WHCRA requires health plans to cover the following: (1) reconstruction of the breast that was removed by mastectomy; (2) surgery and reconstruction of the other breast to make the breasts look symmetrical or balanced after mastectomy; (3) any external breast prostheses (breast forms that fit into a bra) that are needed before or during the reconstruction; and (4) any physical complications at all stages of mastectomy, including lymphedema.

WHCRA also includes other key provisions to protect patients, including that coverage provided by health insurers that comply with WHCRA may be subject to annual deductibles and coinsurance provisions as may be deemed appropriate and as are consistent with those established for other benefits under the plan or coverage. The federal law also prohibits health plans from avoiding the intended effects of the federal law by denying coverage for patients or by creating incentives for attending providers to reduce or limit care in a manner inconsistent with the requirements of WHCRA.

Summary of Proposed Bill

S. 896 would provide Massachusetts with a law that conforms to the 1998 Women's Health and Cancer Rights Act, along with expanding coverage for patients with breast cancer. The proposed legislation parallels the coverage provided under WHCRA around breast reconstruction.

This proposed mandate would apply to the fully-insured population, including those commercially insured, those enrolled in Health Maintenance Organizations (HMOs) and Preferred Provider Organizations (PPOs), Blue Cross Blue Shield plans, as well as those insured by the Group Insurance Commission.

Coverage requirements: The proposed legislation would expand coverage provided under WHCRA by requiring health insurers to cover minimum hospital stays for mastectomies, lumpectomies, and lymph node dissection for the treatment of breast cancer, second medical opinions, and a standard level of benefits to treat lymphedema.

S. 896 would require that lymphedema treatments include the following benefits: equipment, supplies, complex decongestive therapy, and outpatient self-management training and education for the treatment of lymphedema.

Patient Protections: Other provisions of the proposed legislation are specifically designed to protect patients, ensure appropriate access to benefits, and enforce the requirements of the proposed bill. Health insurers would also be required to: (1) compensate non-participating specialists providing second medical opinions at the usual customary and reasonable rate, or at a rate listed on a fee schedule filed and approved by DOI; and, (2) establish annual deductibles and coinsurance provisions that are consistent with those established for other benefits under the plan or coverage. The proposed bill would also prohibit insurers from reimbursing providers or establishing incentives that would lead to managing the treatments in a manner inconsistent from the requirements of the proposed bill.

Background

In this section, DHCFP provides: (1) a brief description of breast cancer; (2) a synopsis of private-insurance coverage for breast cancer treatments, and the enforcement capacity of the state's Division of Insurance relative to these benefits; (3) a discussion about lymphedema, including the demand for treatment and standard for treating lymphedema; and (4) a review of federal activity and legislative activity on breast cancer treatments in other states.

The Incidence of Breast Cancer

Today, breast cancer is the most common type of cancer among women.[3] Breast cancer is "cancer that forms in tissues of the breast, usually the ducts (tubes that carry milk to the nipple) and lobules (glands that make milk). It occurs in both men and women, although male breast cancer is rare."[4]

In the United States, in 2009, there were a total of 194,280 new cases, including 192,370 new cases affecting women, and 1,910 new cases affecting men. There were a total a 40,610 deaths from breast cancer, based on 40,170 deaths among women, and 440 deaths among men.

On a state basis, however, the incidence of breast cancer varies. According to the U.S. Centers for Disease Control and Prevention (CDC), the New England states, including Massachusetts, have among the highest rates of breast cancer incidence in the country. The rates of breast cancer incidence among New England states range between 125.6 and 135.7 per 100,000 persons, age-adjusted to the 2000 U.S. standard population. Six other states, including Illinois, Kansas, Nebraska, New Jersey, Oregon, and Washington, as well as the District of Columbia, fall within this bracket.[5] Rates of dying also vary by state. More information about these rates is available from the CDC.[6]

Coverage for Breast Cancer Treatments

DHCFP's consultants prepared a survey sent to seven fully-insured plans in Massachusetts. All seven plans responded to this survey, including Blue Cross Blue Shield Plans, Fallon Community Health Plan, Harvard Pilgrim Health Care, Neighborhood Health Plan, Tufts Health Plan, Unicare, and United. See Table 2 for a summary of the typical level of coverage provided by health plans for the breast cancer treatments covered under S. 896, and the expected impact on current coverage levels, per responses by the health plans.

Private Insurance Coverage

According to the responses of the seven plans, health insurers do not anticipate any significant impact of the proposed legislation for minimum hospital stays and breast reconstruction surgery. See Box 1 for more information about hospital stays following surgery for breast cancer.

Some health plans, however, expressed concern regarding the broadness of the bill's requirement relative to providing coverage for second medical opinions. S. 896 would require health plans to

Table 2: Expected Impact on Current Coverage Levels for Fully-Insured Health Plans Relative to Senate Bill 896

	Current Coverage Levels	Expected Impact
Minimum Hospital Stays	Coverage based on clinical guidelines used by the health plan. Hospital stay is generally determined by the physician in consultation with the patient. In practice, lumpectomies and lymph node dissection are generally treated as day surgical procedures.	**None. No significant change to current coverage levels**.
Second Medical Opinions	Coverage for second medical opinions, with some health plans limiting second medical opinions to participating providers.	**Some. Health plans have raised concerns that they will be required to cover second medical opinions from non-participating providers**.
Breast Reconstruction Surgery	Coverage provided in compliance with the Women's Health and Recovery Act (WHCRA).	None. Health insurers comply with WHCRA.
Lymphedema Treatment	Coverage for lymphedema-related services and supplies capped or limited. Coverage for services are generally subject to an annual cap or limit on physical therapy/occupational therapy visits. Coverage for supplies generally subject to an annual dollar limit on Durable Medical Equipment (DME).	**Some. Expansion above current coverage levels for lymphedema treatments..**

modify their current coverage for second medical opinions to allow members to seek a second medical opinion from a non-participating provider.

Health plans anticipate that S. 896 would have the most significant impact on current coverage levels as a result of the bill's requirement to treat lymphedema. The federal WHCRA grants health insurers the latitude to define coverage for treating lymphedema. The law does not articulate coverage for treating lymphedema treatments, based upon a treatment approach, clinical guidelines, or some other standard.

DOI's Enforcement Authority

According to the General Accounting Office (GAO), states and federal agencies share the responsibility to enforce federal mandates. In a communication to the Congress, GAO indicates that state insurance regulators have the lead responsibility in states that have laws that substantially conform to or exceed these federal standards or that otherwise substantially enforce the federal standards.[7] The federal government is noted to bear the lead responsibility to enforce the law in states that fail to enforce the federal health insurance standards, including many of the responsibilities that state-insurance regulators would typically undertake.

By several accounts, the Massachusetts Division of Insurance (DOI) has been successful in its efforts to ensure that health insurers comply with the requirements under WHCRA. DOI has assumed responsibility for encouraging insurers to comply by asking plans to include these benefits in their

summary of benefits, or evidence of coverage, to members.[8] DOI also considers its responsibility to ask insurance carriers to remove any plan provisions that are not consistent with federal law.[9]

The disadvantage of DOI's role with respect to WHCRA is the state's lack of jurisdiction to enforce the federal law. The federal government is ultimately responsible for enforcing WHCRA's requirements that health plans provide coverage for these benefits.[10] DOI cannot, for example, clarify or specify how health plans must comply with key provisions of the federal law around treatments for lymphedema.[11]

In contrast, DOI's role in ensuring that fully-insured health plans provide coverage for federally-mandated benefits such as hospital stays after delivery is much more straightforward as a result of state laws that work in parallel to these federal laws.[12, 13]

See Box 1 for a fuller discussion concerning the trends in hospital stays following a mastectomy, lumpectomy, or lymph-node dissection.

Lymphedema

According to the National Cancer Institute, lymphedema is the "build-up of fluid in soft body tissues when the lymph system is damaged or blocked."[14] "Women who are treated for breast cancer may be at risk for arm, breast, and chest swelling called lymphedema."[15] Survivors of breast cancer who develop lymphedema can experience an uncomfortable swelling of the arm and wrist.

- Incidence of Lymphedema: Estimates of the percentage of breast cancer patients who require lymphedema services can range considerably. The Journal of Clinical Oncology estimates that 42% of breast cancer patients have a 5-year cumulative incidence of lymphedema.[16]
- Treatment: The purpose of treating lymphedema is to reduce the swelling, keep it from getting worse, and decrease the risk of infection. Patient advocates describe the effects of lymphedema as having both an emotional and physical effect on affected persons.[17] Treating lymphedema involves a process of massages and physical therapy from specially-trained therapists to help the swollen area drain, followed by special bandages and compression garments. This process is also referred to as Complex or Combined Decongestive Therapy (CDT) and is considered the standard treatment for lymphedema. As the survey responses from health insurers indicate, health plans typically limit coverage for visits and cap coverage for garments.
- Demand for Care: Patients requiring treatment for lymphedema will vary in their use of services and need for bandages and compression sleeves. At one end of the spectrum are those who we may term "light users." These so-called "light users" may require just one visit per month with a physical therapist to prevent cellulitis and hospitalization for cellulitis, with the need for daily compression sleeves, and perhaps no need for a nighttime sleeve. At the other extreme, "heavy users" of treatments might require five sessions per week for a couple of weeks, with an additional need for one session per week for approximately a

Box 1: Hospital Stays Following Breast Cancer Surgery

S. 896 would require insurers to cover a minimum hospital stay for such period as is determined by the attending physician in consultation with the patient to be medically appropriate for patients undergoing mastectomies, lumpectomies, and lymph node dissection for the treatment of breast cancer. The intent of the bill is to provide the physician with the authority to determine the length of the hospital stay, based on the medical policy of the insurer. About 20 states already require health insurers to provide patients with a minimum hospital stay.

A bipartisan proposal is currently under consideration in the 111th Congress to require insurers to cover a minimum 48-hour stay following a mastectomy or lumpectomy and a minimum 24-hour stay following lymph-node dissection in cases where doctors deem it necessary. The impetus for the proposal originates from support for the idea that patients are entitled to recovery time in the hospital after the day of breast cancer surgery, regardless of the state in which they live. This bipartisan bill is reminiscent of the prohibition against insurers restricting hospital stays after childbirth. In general, under the federal Newborns' and Mothers' Health Protection Act (NMHPA) of 1996, "group health plans and health insurance issuers that are subject to NMHPA may not restrict hospital stays in connection with childbirth to less than 48 hours following a vaginal delivery or 96 hours following a delivery by Cesarean section."[18]

The key question is this: Would a mandate to cover a minimum hospital stay lead to a change in hospital stays? Do insurance companies deny patients medically appropriate recovery time in the hospital after breast cancer surgery? These questions are difficult to answer without more systematic research into current utilization, patient experiences and the incidence of denials. Fully-insured health plans do not anticipate S. 896 to alter current practice, but one plan did raise concerns that the requirement would erode the plan's ability to review the length of the hospital stay. However, some providers suggest that hospital stays are currently already determined by the physician in consultation with the patient. Advocates support a mandate for hospital stays to prevent the practice of "drive-through mastectomies."[19]

An examination of trends in hospital stays by the Agency for Healthcare Research and Quality (AHRQ) suggests that the reduction in the rate of hospitalizations for breast cancer has been significant.[20] The two most common procedures performed during hospital stays for breast cancer were mastectomies and lumpectomies. Between 1997 and 2004, the U.S. hospitalization rate per 100,000 women for breast cancer procedures decreased by 34 percent, concurrent with an increased use of outpatient facilities for all breast cancer surgeries and a shift towards breast-conserving surgeries, which are typically performed in the outpatient setting. The AHRQ also reports, however, that there is substantial variation in hospitalizations across the country. Hospitalizations for breast cancer are highest in the Northeast with 75.8 hospital stays per 100,000 women, compared with 58.8 stays per 100,000 women in the South, 57.4 in the Midwest, and 53.6 in the West. The high rate of hospitalization in the state may also help to explain why some think that S. 896 may have little to no impact on practice patterns in Massachusetts.

month, with fewer visits over time. A heavy user might require daily bandages and night time sleeves that may either be "custom made" or "off the shelf." "Moderate users" might lay somewhere in the middle.

- Insurance Coverage: Health insurers are required under WHCRA to cover treatment for lymphedema, but with limitations. The gap in coverage for the most part is related to the plan's limits on physical therapist visits and the plan's cap on Durable Medical Equipment. A physical therapy visit can range from $100 to $300 in cost, while daily bandages and compression sleeves can run a significant range, depending on the quantity required for treatment.[21] Night custom sleeves can range from $350 "off the shelf" to $1,200 for a "custom fit." Treatment may be required for years, since lymphedema is a chronic condition, leading to significant costs out-of-pocket for the person diagnosed with lymphedema or to the lack of appropriate treatment.[22]

Federal Activity

Recent initiatives at the federal level relative to treatments for breast cancer have focused on attempts to establish a standard of coverage for health insurers with regard to providing breast cancer treatments, targeting inpatient care, second medical opinions, and lymphedema therapy.

Women's Health and Cancer Rights Act of 1998

In 1998, the U.S. Congress enacted a law providing protections to women who choose to have breast reconstruction in connection with a mastectomy. The federal law generally applies to persons with individual health insurance coverage, amending both ERISA and the Public Health Service Act. This law requires that health plans that provide coverage for mastectomies must also cover: (1) reconstruction of the breast on which the mastectomy was performed, (2) surgery and reconstruction of the other breast to produce a symmetrical appearance, (3) any external breast prostheses (breast forms that fit into your bra) that are needed before or during the reconstruction, and (4) treatment of physical complications at all stages of the mastectomy, including lymphedemas. WHCRA also requires insurers to charge deductibles and coinsurance consistent with those of other benefits offered by the insurer; and, prohibits insurers from avoiding the requirements of the law by denying patient eligibility, for example, or providing incentives or imposing penalties on physicians to provide care in a manner inconsistent with the law's requirements.

Breast Cancer Patient Protection Act of 2009

A bipartisan initiative to broaden coverage for breast cancer patients is currently under consideration in the 111th Congress. The federal Senate bill (S. 688) sponsored by Senator Olympia Snowe (R-ME), along with 18 cosponsors, is called the "Breast Cancer Patient Protection Act of 2009." The bill is also known as the "Mastectomy Hospital Bill" among proponents of the bill.

This bill would require that health plans provide coverage for a minimum hospital stay for mastectomies, lumpectomies, and lymph node dissection for the treatment of breast cancer and coverage for secondary consultations.[23] The bill amends the Employee Retirement Income Security Act of 1974 (ERISA), the Public Health Service Act, and the Internal Revenue Code. The House version (H.R. 1691), sponsored by Congresswoman Rosa DeLauro (D-CT), along with 210 cosponsors, is identical to the Senate bill. It is important to note that the federal legislation pending in Congress would not preempt more extensive state laws relative to breast cancer patient protections.

A more extensive summary of the Senate bill was prepared by the Congressional Research Service (CRS). The bill contains the following provisions:

- The bill would prohibit health plans from: "(1) restricting benefits for any hospital length of stay to less than 48 hours in connection with a mastectomy or breast conserving surgery or 24 hours in connection with a lymph node dissection, insofar as the attending physician, in consultation with the patient, determines such stay to be medically necessary; or (2) requiring that a provider obtain authorization from the plan or issuer for prescribing any such length of stay."
- The bill would also require plans or issuers to: "(1) provide notice to each participant and beneficiary regarding the coverage required under this Act; and (2) ensure that coverage is provided for secondary consultations."
- The bill would prohibit "a group health plan from taking specified actions to avoid the requirements of this Act."[24]

Lymphedema Diagnosis and Treatment Cost Saving Act of 2010

Another initiative under consideration in the 111th Congress puts the focus on extending coverage for diagnosing and treating lymphedema.[25] According to the CRS, this bill would amend title XVIII (Medicare) of the Social Security Act. The federal House bill (H.R. 4662) is sponsored by Congressman Larry Kissell (D-NC), along with 49 cosponsors.

State Activity

Since the 1970s, federal and state governments have focused on the passing of laws to improve insurance coverage for the treatment of breast cancer. California was the first state in the nation to enact a law to treat breast cancer in 1978. A useful report, which was prepared by the CDC, summarizes all of the state laws that have been enacted from 1949 to 2000.[26] This report covers a number of laws, including:

- Breast Cancer Screening and Education Programs
- Reimbursement for Breast Cancer Screening
- Reimbursement for Breast Reconstruction or Prosthesis

- Accreditation of Facilities and Technologies
- Alternative Therapies
- Reimbursement for Chemotherapy and/or Bone Marrow Transplants
- Income Tax Checkoff for Breast Cancer Funds
- Reimbursement for Length of Stay/Inpatient Care Following Mastectomy.

Over 35 states have enacted laws conforming to the federal requirements under WHCRA.[27] In the Northeast, Connecticut, New Hampshire, Rhode Island and Maine have adopted laws conforming to this federal law; however, Massachusetts has not.[28] In addition, over 25 states have enacted laws to mandate coverage for prosthetic devices, while 18 states mandate coverage for inpatient stay following a mastectomy.

Methodological Approach

Overview of Approach

DHCFP engaged a consulting team for this project, including the economics and actuarial firm of Compass Health Analytics, Inc. (Compass) to estimate the financial effects of the passage of S. 896. Ellen Breslin Davidson of EBD Consulting Services, LLC (EBD) and independent consultant Tony Dreyfus were hired to write the main report, which included reviewing and evaluating the legislation. Dr. John Wong provided review of the medical efficacy section of the report. DHCFP, Compass and EBD worked together to evaluate the likely effects of the proposed bill on existing health insurance.

The following steps were taken to prepare the review and evaluation of S. 896:

1. Conducted Interviews with Stakeholders.

   DHCFP conducted interviews with stakeholders in the Commonwealth to ensure that it was accurately interpreting the proposed change in law, to understand the perceptions about how the law would be interpreted, if enacted, and expectations about its likely impacts. DHCFP completed interviews with Mary Anne Padian, General Counsel to the bill's sponsor, Senator Spilka, and Amaru Sanchez, staff to the Committee on Public Health. Research interviews were also conducted either in person or over the telephone with the following persons: (1) Kevin Beagan, Director of the Health Care Access Bureau, the Division of Insurance, (2) Carol Balulescu, Director, Office of Patient Protection, Department of Public Health, (3) Dr. Mehra Golshan, and (4) Dr. Nancy Roberge, (5) staff from the Susan G. Komen for the Cure, and (6) Bob Weiss of the National Lymphedema Network, California.[29] Meetings were also held with health insurers including Blue Cross Blue Shield of Massachusetts, the Massachusetts Association of Health Plans including representatives of member health plans, Unicare Life & Health, and United Healthcare.

2. Reviewed Literature.

   DHCFP reviewed the literature to determine the context of the proposed mandate, including issues relative to medical efficacy. This research included identification of parameters for estimating the cost impacts of S. 896.

3. Prepared and Collected Survey Data from the Health Plans.

   DHCFP requested that health plans respond to a survey developed by Compass and EBD to determine current coverage policies for the requirements of the mandate.

4. Developed Baseline for Massachusetts.

   DHCFP provided claims-level data from the health plans in the Commonwealth, using data from DHCFP's data warehouse, to establish a baseline of costs that are currently covered by health plans. This data request was prepared by Compass.

5. Applied Assumptions and Sensitivity Analysis to Methodology.

   Compass developed model parameters for estimating the mandate from a review of the claims data from DHCFP to produce an estimate of the marginal premium cost of the proposed mandate. The marginal premium cost estimate was driven by the higher cost of providing coverage due to: (1) expanded coverage for lymphedema treatments, and (2) expanded coverage for second medical opinions. Baseline premium costs were added to the marginal premium costs to estimate the total premium cost of the proposed mandate.

Approach for Determining Medical Efficiacy

M.G.L. c. 3 § 38C (d) (1) requires DHCFP to assess the medical efficacy of mandating the benefit, including the impact of the benefit on the quality of patient care and the health status of the population; and, the results of any research demonstrating the medical efficacy of the treatment and service when compared to alternative treatments or services or not providing the treatment or services. To determine the medical efficacy of S. 896, DHCFP focused on examining the efficacy of hospital stays and second medical opinions, and to a greater extent, lymphedema therapy.

Approach for Determining the Fiscal Impact of the Mandate

Legal Requirements

M.G.L. c. 3 § 38C (d) requires DHCFP to assess nine different measures in estimating the fiscal impact of a mandated benefit:

1. "financial impact of mandating the benefit, including the extent to which the proposed insurance coverage would increase or decrease the cost of the treatment or the service over the next 5 years;"
2. "extent to which the proposed coverage might increase the appropriate or inappropriate use of the treatment or service over the next 5 years;"
3. "extent to which the mandated treatment or service might serve as an alternative for more expensive or less expensive treatment or service;"
4. "extent to which the insurance coverage may affect the number and types of providers of the mandated treatment or service over the next 5 years;"
5. "effects of mandating the benefit on the cost of health care, particularly the premium, administrative expenses and indirect costs of large employers, small employers and nongroup purchasers;"
6. "potential benefits and savings to large employers, small employers, employees and nongroup purchasers;"

7. "effect of the proposed mandate on cost shifting between private and public payors of health care coverage;"
8. "cost to health care consumers of not mandating the benefit in terms of out of pocket costs for treatment or delayed treatment;" and
9. "effect on the overall cost of the health care delivery system in the commonwealth."

Estimation Process

The steps required to identify the costs implied by this mandate were as follows:

1. estimate the size of the affected insured population;
2. estimate the baseline claims costs for the affected benefits;
3. estimate the range of potential impact factors on claims costs due to the incremental impact of the mandate's required benefits; and
4. estimate the impact of administrative expenses of the relevant insurers.

For more detailed information on the methodological approach used to calculate the impact of S. 896, refer to the Appendix of this report.

Summary of Findings

Medical Efficacy

DHCFP's research indicates that the proposed provisions mandating insurance coverage of hospital stays after breast cancer surgery are not likely to have a large effect on current care practices.

This review focuses instead on efficacy of treatments for lymphedema, a common and critical complication of breast cancer surgery. The proposed legislation would require insurers to cover treatments for lymphedema, which can involve numerous sessions of physical therapy and use of specialized compression bandages and garments. We focus here on lymphedema treatment because the level of support required for treatment efficacy may influence the practices of insurers and public discussion of mandated coverage. An additional issue, addressed at the end of this section, is a proposed mandate for coverage of second opinions.

Hospital stays

Patients undergoing mastectomy usually have a brief hospital stay. Anecdotal evidence indicates that insurers provide coverage for this care based on physician recommendation. Patients usually undergo lumpectomy as a day procedure without an overnight hospital stay, so the mandated coverage of hospital stays is unlikely to affect care for lumpectomy. Advantages and disadvantages of hospital stays and in particular for patients undergoing mastectomy and lumpectomy is a separate and potentially useful course of research. In general, hospital stays carry risk of infection and other adverse effects of hospital care. These risks have to be balanced against the benefits of hospital care.

Lymphedema and its treatments

Lymphedema is a significant complication from removal or radiation of lymph nodes near the armpit as part of breast cancer surgery.[30] Recent improvements in approaches to surgery have reduced the removal of lymph nodes when the therapeutic benefit appears limited. For women who undergo surgery and radiation, the prognosis for quality of life and for the arm and shoulder is generally good.[31] But among many women who have been treated for breast cancer, lymphedema remains a cause of considerable pain, impaired use of the arm, risk of infection and reduced quality of life.[32]

Edema or swelling after surgery can be temporary, but lymphedema may develop sooner or later as a chronic condition for which treatment may be provided over a long period of time. Some patients receive only a monthly treatment, others may require weekly treatments for several months, while some patients may receive daily treatments for an initial period and then reduce to less frequent treatments.[33] Lymphedema has traditionally been seen as difficult to treat and impossible to cure, but new therapies are challenging this view.[34]

Physical therapies are very often used to treat lymphedema. A common approach to treatment involves a combination of specialized massage, compression bandaging, compression garments and exercises to remove excess fluid accumulation in the arm. The massage techniques are known as

lymphatic massage or manual lymphatic drainage. The combination of treatments is called complex (or complete) physical therapy (CPT) or decongestive therapy. Pneumatic pumps fitted around the arm can be used to remove fluid.[35] Medication, electrical stimulation and low-level laser therapies have also been used. Where these therapies are unsuccessful, surgical treatments "with varied proven efficacies" include microsurgical work to improve fluid movement and removing tissue by cutting or suction. Liposuction (suction-assisted removal of affected fatty tissue) shows promise for long-term relief of symptoms.[36]

Effectiveness

Many studies have explored the effectiveness of different therapies and several reviews of these studies have been published recently. The reviews generally conclude that the physical therapies are effective in reducing symptoms, though the strength of evidence is moderate rather than strong. The evidence is stronger that the combined approach of CPT works better than individual techniques used alone. The conclusions of some of the relevant studies are briefly described below.

Leal and colleagues find that a combination of techniques produces better results including "demonstrated efficacy" for CT combined with pneumatic compression. They find that the newer techniques of electrical stimulation and laser techniques give "satisfactory results."[37]

A review by Erickson and colleagues finds that therapies using massage and exercise have been shown to be effective, while the evidence is not yet convincing on the effectiveness of drugs.[38] Devoogdt and colleagues, analyzing ten randomized controlled trials, found that physical therapy combining different techniques is effective but the evidence is not strong enough to show that individual elements of the treatment are effective alone.[39]

Readers may also be interested to consult a 2004 study of proposed Massachusetts legislation mandating treatment for lymphedema.[40] The medical efficacy section of that report was based on much less literature available at that date. The report concluded that complete decongestive treatment is useful and that follow-up self-care at home can play an important role in maintaining benefits of treatment by a trained therapist. The 2004 study found no evidence available for benefits of surgical techniques, which have since received some attention.

Second opinions

While DHCFP found little comprehensive conclusion about the value of second opinions in cancer treatment, existing literature does suggest that second opinions do frequently differ from first opinion. For example, Staradub and colleagues found that a second opinion in breast cancer cases changed the surgical treatment in eight percent of the cases reviewed and influenced the prognosis in 40 percent of the cases.[41] Clauson and colleagues found that only about one-half of patients with breast cancer who received a second opinion had already had a full discussion of their treatment options. The second opinion led to changes in treatment for one-fifth of the patients.[42] The researchers concluded that the second consultation gives women useful information and can alter the treatment of their condition.

Women with localized breast cancer often face difficult decisions as they weigh treatment options. Some women may choose breast conserving treatment, which carries some higher risk of requiring additional surgery; other women may choose mastectomy, with reduced chances of needing further surgery. For women to learn about their options and clarify their preferences, additional discussion and advice from a second physician may be useful.[43]

Research outside the U.S. on breast cancer and on other forms of cancer has also found substantial variability between first and second opinions. For example researchers in Brazil focused on breast cancer found only moderate agreement between first and second opinions.[44] In Germany, researchers looking at diagnoses of upper gastrointestinal cancers found frequent changes in recommended treatments[45] and those looking at soft tissue sarcomas have concluded that second opinion is essential for accurate prognosis and optimal therapeutic decisions.[46]

Financial Impact of Mandate

1. DHCFP is required to assess "the extent to which the proposed insurance coverage would increase or decrease the cost of the treatment or the service over the next 5 years."

   The cost of treatments for breast cancer patients would increase as a result of the proposed bill. Should S. 896 become law, DHCFP expects that the cost of treating lymphedema and coverage for supplies would increase in proportion to a shift in out-of-pocket payments from the patient to the plan. The cost of second medical opinions would also increase to the extent that patients used a greater share of non-participating providers at a cost to the plan that is higher than a participating provider. The potential that the current cost-sharing provisions set by health insurers might be increased would also increase the cost of treatment for all treatments that are affected.

2. DHCFP is required to assess "the extent to which the proposed coverage might increase the appropriate or inappropriate use of the treatment or service over the next 5 years."

   Overall, S. 896 could lead to a more appropriate use of care. The bill's directive to require that plans cover second medical opinions could result in a reconsideration of treatment options. DHCFP expects that additional coverage for lymphedema treatments would result in a greater number of patients receiving the appropriate level of treatments and supplies.

3. DHCFP is required to assess "the extent to which the mandated treatment or service might serve as an alternative to a more expensive or less expensive treatment or service."

   DHCFP concludes that the mandated treatments might serve as an alternative to a more expensive treatment in the following instances: (1) expanded coverage for treating lymphedema and supplies can prevent the condition of lymphedema from worsening and involving a greater use of resources through hospitalization; (2) expanded coverage for second medical opinions might serve to improve the choice on the patient's behalf, and could lead to a decision-making process towards less expensive treatments.

4. DHCFP is required to assess "the extent to which the insurance coverage may affect the number or types of providers of the mandated treatment or service over the next five years."

   There is no evidence to indicate that proposed legislation would increase or decrease the number and types of providers of the mandated treatment or service over the next 5 years.

5. DHCFP is required to assess "the effects of mandating the benefit on the cost of health care, particularly the premium, administrative expenses and indirect costs of large employers, small employers, employees, and nongroup purchasers."

   The Division estimated the fiscal impact of the bill (see the Appendix) relative to the effect S. 896 would have on health insurers.

   Estimated impacts of S. 896 on Massachusetts health care premiums for fully-insured products were calculated assuming that the five-year average premium (2011-2015) for a fully-insured member is $498 on a per member per month basis. Low, middle and high scenarios used varying assumptions of costs and use.

Exhibit 2: Estimated Cost of Impact of Senate Bill 896 on Fully-Insured Health Care Premiums (2011-2015)

	2011	2012	2013	2014	2015	Total
Fully-Insured Enrollment (000s)	2,402	2,399	2,398	2,396	2,395	—
Low Scenario						
Annual Impact Claims (000s)	$270	$278	$286	$294	$303	$1,430
Annual Impact Administration (000s)	$37	$38	$39	$40	$41	$195
Annual Impact Total (000s)	$307	$315	$325	$334	$344	$1,625
Premium Impact (PMPM)	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01
Middle Scenario						
Annual Impact Claims (000s)	$1,163	$1,196	$1,231	$1,267	$1,305	$6,162
Annual Impact Administration (000s)	$159	$163	$168	$173	$178	$840
Annual Impact Total (000s)	$1,321	$1,359	$1,399	$1,440	$1,483	$7,003
Premium Impact (PMPM)	$0.05	$0.05	$0.05	$0.05	$0.05	$0.05
High Scenario						
Annual Impact Claims (000s)	$2,860	$2,942	$3,029	$3,118	$3,210	$15,159
Annual Impact Administration (000s)	$390	$401	$413	$425	$438	$2,067
Annual Impact Total (000s)	$3,250	$3,343	$3,442	$3,543	3,647	$17,226
Premium Impact (PMPM)	$0.11	$0.12	$0.12	$0.12	$0.13	$0.12

The five-year impact results are displayed in Exhibit 2. The results include three sets of estimates based on low, medium, and high impact scenarios. The five-year total for these three scenarios resulted in estimated increased total spending (including both claims spending and administrative expenses) of $1.625 million, $7.0 million, and $17.2 million, respectively. These results include fully-insured plans under the Group Insurance Commission (GIC).

6. DHCFP is required to assess "the potential benefits and savings to large employers, small employers, employees, and nongroup purchasers."

   It is unlikely that this mandate would produce a substantial increase in the benefits to employers.

7. DHCFP is required to assess "the effect of the proposed mandate on cost shifting between private and public payors of heath care coverage."

   As written, S. 896 applies the mandate to fully-insured commercial plans and the GIC. DHCFP anticipates that an expansion of coverage for treating lymphedema would lead to a shift in costs from self pay to the insurer. Persons who are currently paying out of pocket for treatments and supplies due to current limits set by the health plan are expected to benefit from the bill by paying less out of pocket due to greater coverage by insurers.

8. DHCFP is required to assess "the cost to health care consumers of not mandating the benefit in terms of out of pocket costs for treatment or delayed treatment."

   Should the proposed mandate become law, health care consumers would experience lower out-of-pocket costs. Should the proposed mandate become law, health care consumers would have access to treatments that are either now delayed or not provided.

9. DHCFP is required to assess "the effect on the overall cost of the health care delivery system in the commonwealth."

   Should S. 896 be enacted, the overall cost of the health care delivery system in the Commonwealth will change. The Division anticipates an increase in the overall level of utilization of treatments for lymphedema, and a shift in out-of-pocket costs from patients to health insurers. The estimated overall impact on health insurance premiums and spending is included in Exhibit 2 (see page 22).

Endnotes

[1] Senate 896, http://www.mass.gov/legis/bills/senate/186/st00pdf/st00896.pdf

[2] Department of Labor. Your Rights After a Mastectomy… Women's Health & Cancer Rights Act of 1998. http://www.dol.gov/ebsa/publications/whcra.html

[3] American Cancer Society. Breast Cancer Facts & Figures 2009-2010. Atlanta: American Cancer Society, Inc. http://www.cancer.org/downloads/STT/F861009_final%209-08-09.pdf

[4] National Cancer Institute. U.S. National Institutes of Health. http://cancer.gov/cancertopics/types/breast

[5] U.S. Cancer Statistics Working Group. United States Cancer Statistics: 1999–2006 Incidence and Mortality Web-based Report. Atlanta (GA): Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute; 2010. Available at: http://www.cdc.gov/uscs.

[6] Centers for Disease Control and Prevention. http://www.cdc.gov/cancer/breast/statistics/

[7] General Accounting Office. May 7, 2001. Private Health Insurance: Federal Role in Enforcing New Standards Continues to Evolve http://www.gao.gov/new.items/d01652r.pdf

[8] March 16, 2000. Division of Insurance Safeguards Cancer Patients' Rights to Breast Reconstruction Benefits.

[9] Telephone Interview with Kevin Beagan, Division of Insurance, May 2010.

[10] Telephone Interview with Kevin Beagan, Division of Insurance, May 2010.

[11] Telephone Interview with Kevin Beagan, Division of Insurance, May 2010.

[12] Chapter 218 of the Massachusetts General Laws of 1995, for example, which requires a minimum hospital stay for childbirth and postpartum care benefits, was enacted in Massachusetts prior to the federal Newborns' and Mothers' Health Protection Act of 1996.

[13] The Massachusetts Mental Health Parity Act of 2000, as amended by Chapter 256 of the Acts of 2008, An Act Relative to Mental Health Benefits. The federal Mental Health Parity Act of 1996 and the Mental Health Parity and Addiction Equity Act of 2008 (MHPAEA).

[14] National Cancer Institute. U.S. National Institutes of Health. http://cancer.gov/cancertopics/pdq/supportivecare/lymphedema

[15] American Cancer Society. Lymphedema: What Every Woman With Breast Cancer Should Know. 2010.

[16] http://jco.ascopubs.org/cgi/content/full/27/3/390

[17] Telephone Interview with Bob Weiss. May 2010. National Lymphedema Network. http://www.lymphnet.org/lymphedemaFAQs/legislation/legUpdates/legUpdates_Oct2006.htm

[18] The federal Newborns' and Mothers' Health Protection Act of 1996. https://www.cms.gov/HealthInsReformforConsume/05_TheNewborns%27andMothers%27HealthProtectionAct.asp

[19] Interview with staff. Susan G. Komen for the Cure. May 2010.

[20] Agency for Healthcare Research and Quality. October 2006. http://www.hcup-us.ahrq.gov/reports/statbriefs/sb15.pdf

[21] Telephone Interview with Nancy Roberge, PT, DPT, M.Ed, May 2010. Chestnut Hill Physical Therapy Associates

[22] Telephone Interview with Bob Weiss. May 2010. National Lymphedema Network, California. http://www.lymphnet.org/lymphedemaFAQs/legislation/legUpdates/legUpdates_Oct2006.htm

[23] S. 688. Breast Cancer Patient Protection Act of 2009. http://www.govtrack.us/congress/bill.xpd?bill=s111-688

[24] http://www.govtrack.us/congress/bill.xpd?bill=s111-688

[25] http://www.govtrack.us/congress/bill.xpd?bill=h111-4662

[26] State Laws Relating to Breast Cancer. Division of Cancer Prevention and Control. Legislative Summary. 1949-2000. U.S. Department of Health and Human Services. Centers for Disease Control and Prevention. http://www.cdph.ca.gov/programs/CancerDetection/Documents/BCLaws1949-2000.pdf

[27] The Henry Kaiser Family Foundation. Statehealthfacts.org http://www.statehealthfacts.org/comparecat.jsp?cat=10&rgn=6&rgn=1

[28] Division of Insurance. March 16, 2000: Cancer Patients' Rights to Breast Reconstruction Benefits. http://www.mass.gov/?pageID=ocaterminal&L=6&L0=Home&L1=Government&L2=Our+Agencies+and+Divisions&L3=Division+of+Insurance&L4=Archive+of+DOI+News+%26+Updates&L5=2000+DOI+Press+Releases&sid=Eoca&b=terminalcontent&f=doi_Media_media_press2&csid=Eoca

[29] Dr. Mehra Golshan, Director Breast Surgical Services, Brigham and Women's Hospital, Dana Farber Cancer Institute, Harvard Medical School

[30] Lee TS, Kilbreath SL, Refshauge KM, Herbert RD, Beith JM, "Prognosis of the upper limb following surgery and radiation for breast cancer," Breast Cancer Research & Treatment, 110(1) 19-37, July 2008, describes the prevalence of arm and shoulder problems after surgery and radiation for breast cancer.

[31] Lee and colleagues, 2008, cited above.

[32] Sakorafas GH, Peros G, Cataliotti L, Vlastos G, "Lymphedema following axillary node dissection for breast cancer," Surgical Oncology, 15(3), 153-165, November 2006.

[33] Nancy Roberge, June 10, 2010, email follow-up to interview. Chestnut Hill Physical Therapy Associates.

[34] Warren AG, Brorson H, Borud LJ, Slavin SA, "Lymphedema: a comprehensive review," Annals of Plastic Surgery, 59(4) 464-72, October 2007.

[35] The review article, Moseley AL, Carati CJ, Piller NB, "A systematic review of common conservative therapies for arm lymphedema secondary to breast cancer treatment," Annals of Oncology, 18 639-646, 2007, offers an accessible description of different therapies.

[36] Warren AG, Brorson H, Borud LJ, Slavin SA, "Lymphedema: a comprehensive review," Annals of Plastic Surgery, 59(4) 464-72, October 2007.

[37] Leal NF, Carrara HH, Vieira KF, Ferreira CH, "Physiotherapy treatments for breast cancer-related lymphedema: a literature review," Revista Latino-Americana de Enfermagem, 17(5) 730-6, September-October 2009.

[38] Erickson VS, Pearson ML, Ganz PA, Adams J, Kahn KL. "Arm edema in breast cancer patients," Journal of the National Cancer Institute, 93(2) 96-111, January 17, 2001.

[39] Devoogdt N, Van Kampen M, Geraerts I, Coremans T, Christiaens MR. "Different physical treatment modalities for lymphoedema developing after axillary lymph node dissection for breast cancer: a review," European Journal of Obstetrics & Gynecology and Reproductive Biology, 149(1):3-9, March 2010. Epub December 16, 2009

[40] Commonwealth of Massachusetts Mandated Benefit Review, Review and Evaluation of Proposed Legislation Entitled: "An Act Providing Coverage for Lymphedema Treatments" Companion bills: Senate Bill No. 848 & House Bill No. 1309, provided for The Joint Committee on Insurance and the Division of Health Care Finance and Policy Commonwealth of Massachusetts, July 26, 2004.

[41] Staradub VL, Messenger KA, Hao N, Wiley EL, Morrow M. "Changes in breast cancer therapy because of pathology second opinions," Annals of Surgical Oncology, 9(10) 982-7, 2002.

[42] Clauson J, Hsieh YC, Acharya S, Rademaker AW, Morrow M, "Results of the Lynn Sage Second-Opinion Program for local therapy in patients with breast carcinoma. Changes in management and determinants of where care is delivered," Cancer 94(4) 889-94, February 15, 2002.

[43] John B. Wong, clinical consultant for our medical efficacy research and chief of the Division of Clinical Decision Making, Informatics, and Telemedicine at Tufts Medical Center, emphasized the value of second opinions in breast cancer treatment in correspondence for our research, June 15, 2010.

[44] Salles Mde A, Sanches FS, Perez A, Gobbi H, "Importância da segunda opinião em patologia cirúrgica mamária e suas implicações terapêuticas [Importance of a second opinion in breast surgical pathology and therapeutic implications,]" Revista Brasileira de Ginecologia e Obstetrícia , 30(12) 602-608, December 2008.

[45] Schuhmacher C, Lordick F, Bumm R, Tepe J, Siewert JR. ["Good advice is precious." The second opinion from the point of view of an interdisciplinary cancer therapy center,] Deutsche Medizinische Wochenschrift. 132(17) 921-6, April 27, 2007.

[46] Lehnhardt M, Daigeler A, Hauser J, Puls A, Soimaru C, Kuhnen C, Steinau HU. "The value of expert second opinion in diagnosis of soft tissue sarcomas," Journal of Surgical Oncology, 97(1) 40-3, January 1, 2008.

Report Authors

Ellen Breslin Davidson, EBD Consulting Services, LLC
Tony Dreyfus, Independent Consultant

Jim Highland, Compass Health Analytics
Lars Loren, Compass Health Analytics
Lisa Manderson, Compass Health Analytics
Joshua Roberts, Compass Health Analytics

Division of Health Care Finance and Policy
Two Boylston Street
Boston, Massachusetts 02116

Phone: (617) 988-3100
Fax: (617) 727-7662

Website: www.mass.gov/dhcfp

Publication Number: 11-038-HCF-02
Authorized by Ellen Bickelman, State Purchasing Agent

Printed on Recycled Paper

Appendix

Actuarial Assessment of Senate Bill 896: An Act Relative to Women's Health and Cancer Recovery

Actuarial Assessment of Senate Bill 896: An Act Relative to Women's Health and Cancer Recovery

Prepared for

Commonwealth of Massachusetts
Division of Health Care Finance and Policy

Prepared by

Compass Health Analytics, Inc.

June 18, 2010

Actuarial Assessment of Senate Bill 896:
An Act Relative to Women's Health
and Cancer Recovery

Table of Contents

Executive Summary .... ***i***

1. Introduction ***1***

2. Provisions of S.B. 896 .... ***1***

2.1. Insured populations affected by S.B. 896 .... *2*

2.2. Services mandated by S.B. 896 .... *3*

2.3. Reimbursement for second opinions *4*

2.4. Incentives to reduce care *4*

2.5. Services already covered under existing mandates *5*

3. Factors Affecting the Analysis ***6***

3.1. Conditions included in S.B. 896 .... *6*

3.2. Mandated procedures vs. federal mandate and current coverage *7*

3.3. Estimating the cost of second opinion coverage *9*

3.4. Estimating the cost of lymphedema treatment *9*

3.5. Cost-sharing provisions *12*

3.6. Time-dependent factors *13*

4. Methodology ***13***

4.1. Analysis steps *13*

4.2. Data sources *14*

5. Analysis ***14***

5.1. Insured population affected by the mandate *14*

5.2. Current claim costs for second opinions and lymphedema treatment *15*

5.3. Changes in second opinion costs due to S.B. 896 .... *16*

5.4. Changes in lymphedema treatment costs due to S.B. 896 .... *18*

5.5. Increase in covered costs to be paid by health insurers *20*

5.6. Effect of the mandate on health insurance premiums *20*

Conclusion ***21***

Appendices ***22***

Appendix A: Estimating the Costs of Lymphedema Treatment in Excess of Current Limits *23*

This report was prepared by Lars Loren, JD, James Highland, PhD, MHSA, Lisa Manderson, ASA, MAAA, and Joshua Roberts.

compass
Health Analytics

Actuarial Assessment of Senate Bill 896:
An Act Relative to Women's Health
and Cancer Recovery

EXECUTIVE SUMMARY

Senate Bill 896, before the 2009-2010 session of the Massachusetts Legislature, mandates coverage, by health insurance plans regulated by the Commonwealth, for minimum hospital stays and breast reconstruction for breast cancer patients, second opinions on proposed cancer diagnoses or treatment, and treatment for lymphedema. The Massachusetts Division of Health Care Finance and Policy (the Division) engaged Compass Health Analytics, Inc. to provide an actuarial estimate of the effect that enactment of the bill would have on the cost of health care insurance in Massachusetts.

Background

S.B. 896 requires fully-insured health plans and plans operated for state employees to cover.

- A minimum hospital stay, for a period determined by the physician and the patient to be medically appropriate, for a lymph node dissection, lumpectomy, or mastectomy
- A second medical opinion by an appropriate cancer specialist, including a specialist affiliated with a specialty cancer treatment center, in the event of a positive or negative diagnosis, a recurrence, or a recommendation of a course of treatment
- Breast reconstruction surgery after a mastectomy, including all stages of reconstruction of the removed breast, reconstruction of the other breast to produce a symmetrical appearance, and prostheses and reconstruction to treat physical complications of mastectomy, including lymphedema
- Equipment, supplies, complex decongestive therapy, and outpatient self-management training and education for the treatment of lymphedema

In addition, the bill:

- Provides, for each set of mandated services, that coverage may be subject to cost sharing "consistent with those established for other benefits within a given policy"
- Forbids an insurer from providing an incentive to providers to provide care that does not meet the requirements of the bill

Discussion and correspondence with the Division and legislative staff served to clarify the intent of language in the bill permitting cost-sharing and language limiting the bill to the treatment of breast cancer and related complications.

Analysis

Compass estimated the impact of the mandate using the following steps:

- Analyze the provisions of the bill and compare the requirements of each to existing statutes and current generally-available benefit plan features.
- Estimate insurers' current expenditures on services mandated by the bill but not already mandated by existing statutes or covered under generally-available plans, drawing upon the Division's health care claims database.
- Estimate a range for the cost of complying with the provisions of S.B. 896 requiring coverage for procedures currently not covered.
- Estimate the impact on premiums for fully-insured commercial plans by accounting for insurers' retention for administrative expense and risk/profit.

Summary Results

The analysis compares the services mandated in S.B. 896 to current coverage levels and existing mandates. Most procedures related to breast cancer treatment are already covered by insurers. In addition, the existing federal Women's Health and Cancer Rights Act of 1998 (WHCRA) requires health plans that provide benefits for mastectomies to also cover breast reconstruction, external breast prostheses needed before or during reconstruction, and treatment for any physical complications at all stages of mastectomy, including lymphedema. As a result, S.B. 896's provisions for these services would not

have an incremental effect on insurers' costs, as they are redundant to current coverage and mandates.

Only two of the bill's provisions would have a net effect on coverage.

- The bill requires insurers to pay for second opinions, even those from out-of-network providers. If the providers are out-of-network, it requires insurers to pay them at the usual and customary rate, which may exceed the in-network rate. While most insurers currently cover second opinions, some do not cover them for out-of-network providers.
- The bill requires insurers to pay for physical therapy, supplies, and equipment to treat lymphedema. Most insurers already cover basic medical treatment for lymphedema, and most currently cover therapy and supplies/equipment. But most have caps on the number of visits or the amount reimbursed for equipment. This analysis assumes the intent of the bill is to remove these caps.

Isolating second opinion charges from primary consultations in the Division's claim data is difficult; however, the analysis makes some reasonable assumptions about what portion of claims are attributable to second opinions and what effect the bill would have on pricing. To estimate additional lymphedema treatment costs mandated under the bill, the analysis uses a simple model, shown in Appendix A. Tables ES-1 and ES-2 show the range of the estimated impact on per-member-per-month medical costs.

Table ES-1: Second Opinion Contribution to Mandate Cost per Member per Month (2008 dollars)

Low	Mid	High
$ 0.00	$ 0.01	$ 0.02

Table ES-2: Net Effect of Changes in Lymphedema Treatment Cost per Member per Month

Low	Mid	High
$ 0.01	$ 0.03	$ 0.07

The primary focus of our work is estimating the bill's impact on premiums for fully-insured private plans. The average net premium cost of S.B. 896 over the next five years

for those plans ranges from well under a million to approximately $3.4 million per year. Accounting for administrative expenses, the estimated mean PMPM cost over five years is $0.01 to $0.12. We estimate that S.B. 896 would increase fully-insured premiums up to 0.02 percent on average over five years.

Table ES-3 summarizes the effect on premium costs for fully-insured plans, averaged over five years.

Table ES-3: Estimated Incremental Impact of S.B. 896 on Premium Costs for Fully-insured Plans

	-2011 -	-2012 -	-2013 -	-2014 -	-2015 -	- Mean -
Members (K)	2,402	2,399	2,398	2,396	2,395	
Med Exp Low ($K)	$ 270	$ 278	$ 286	$ 294	$ 303	$ 286
Med Exp Mid ($K)	1,163	1,196	1,231	1,267	1,305	1,232
Med Exp High ($K)	2,860	2,942	3,029	3,118	3,210	3,032
Premium Low ($K)	$ 307	$ 315	$ 325	$ 334	$ 344	$ 325
Premium Mid ($K)	1,321	1,359	1,399	1,440	1,483	1,401
Premium High ($K)	3,250	3,343	3,442	3,543	3,647	3,445
Low PMPM	$ 0.01	$ 0.01	$ 0.01	$ 0.01	$ 0.01	$ 0.01
Mid PMPM	0.05	0.05	0.05	0.05	0.05	0.05
High PMPM	0.11	0.12	0.12	0.12	0.13	0.12
Est Mo. Premium	$ 442	$ 468	$ 496	$ 526	$ 558	$ 498
Premium % Rise Low	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Premium % Rise Mid	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Premium % Rise High	0.03%	0.02%	0.02%	0.02%	0.02%	0.02%

Actuarial Assessment of Senate Bill 896:
An Act Relative to Women's Health
and Cancer Recovery

1. INTRODUCTION

Senate Bill 896, before the 2009-2010 session of the Massachusetts Legislature, mandates coverage, by health insurance plans regulated by the Commonwealth, for minimum hospital stays and breast reconstruction for breast cancer patients, second opinions on proposed cancer diagnoses or treatment, and treatment for lymphedema. The Massachusetts Division of Health Care Finance and Policy (the Division) engaged Compass Health Analytics, Inc. to provide an actuarial estimate of the effect that enactment of the bill would have on the cost of health care insurance in Massachusetts.

Assessing the cost impact entails analyzing the incremental effect of the bill on spending for insurance plans subject to the proposed law. This requires determining if the bill sets a standard for coverage higher than either the standard for coverage under existing mandates or coverage already generally provided by insurers. The analysis then turns to estimating the cost of services under the coverage requirements incremental under the bill.

Section 2 of this analysis outlines the provisions of the bill. Section 3 discusses important considerations in translating S.B. 896's language into estimates of its incremental impact on health care costs. Section 4 describes the basic methodology used for the calculations in Section 5, which steps through the analysis and its results.

2. PROVISIONS OF S.B. 896

Interpreting S.B. 896 entails identifying the insured populations it covers and the benefit requirements it adds, beyond existing mandates and coverage already offered voluntarily by insurers. The Division's report, to which this actuarial analysis is attached, contains

more detailed descriptions of the provisions and an analysis of the efficacy of the proposed procedures. This analysis will focus on the financial implications of the mandate.

2.1. Insured populations affected by S.B. 896

The structure of S.B. 896 differs from the structure typical of most of the health benefit mandate bills that come before the Legislature. Rather than amending directly the statute chapters that govern various types of health plans (health insurance companies, medical service corporations, HMOs, etc., governed by General Laws chapters 175, 176A, 176B, and 176G), the bill identifies the categories of affected plans.[1] Included in the affected plans are fully-insured commercial plans. Health insurance plans, operating as self-insured entities (i.e., the employer policy holder retains the risk for medical expenditures and uses the insurer to provide administrative functions), are subject to federal law, and not to state-level mandates, and are excluded from this analysis. However, the mandate does apply to self-insured plans operated by the Group Insurance Commission (GIC) for the benefit of state, and participating county and local, employees (G.L. c. 32A), since the Legislature can require the commissioners of the GIC to follow the mandate.

The bill does not limit its effect to residents of the Commonwealth. Therefore the proposed mandate would apply to a nonresident, insured by a fully-insured plan regulated by Massachusetts (e.g., someone working for a Massachusetts employer but in another state), although such a person will not be in the Division's claim data.

The bill specifically excludes Medicare supplemental policies governed under federal or state law; Medicare and federally-regulated "medigap" policies are not subject to state

[1] It provides "any insurer proposing to issue individual or group accident and sickness insurance policies providing hospital, medical and surgical, or major medical coverage on an expense-incurred basis; any corporation providing individual or group accident and sickness insurance policies providing hospital, medical and surgical, or major medical coverage on an expense-incurred basis; any health maintenance organization contract providing a health care plan for health care services; and any group blanket policy of accident and sickness insurance, including the contributory group insurance for persons in the active or retired service of the Commonwealth, that covers medical and surgical benefits, shall provide coverage consistent with all of the provisions of this section".

law, regardless. The bill does not limit coverage to persons under 65; note, however, that the portion of the membership of plans affected by the mandate that is over 65 is small (less than two percent).

Finally, despite the bill's title, it contains no provisions limiting the mandated coverage to women. Female and male patients alike are within the scope of the bill.

2.2. Services mandated by S.B. 896

S.B. 896 requires coverage for a specified set of services, including:

- A minimum hospital stay, for a period determined by the attending physician and the patient to be medically appropriate, for a lymph node dissection, lumpectomy, or mastectomy;
- A second medical opinion by an appropriate specialist, including but not limited to a specialist affiliated with a specialty cancer treatment center, in the event of a positive or negative diagnosis of cancer, a recurrence of cancer, or a recommendation of a course of treatment for cancer;
- Breast reconstruction surgery after a mastectomy, provided in the manner determined by the attending physician and the patient to be medically appropriate, and including all stages of reconstruction of the breast removed by mastectomy, reconstruction of the other breast to produce a symmetrical appearance, and prostheses and reconstruction to treat physical complications of mastectomy, including lymphedema; and
- Equipment, supplies, complex decongestive therapy, and outpatient self-management training and education for the treatment of lymphedema, if prescribed by a health care professional legally authorized to prescribe or provide such items under law.

For each set of mandated services, S.B. 896 provides that coverage may be subject to "annual deductibles and coinsurance provisions as may be deemed appropriate by the Division of Insurance" and "as are consistent with those established for other benefits within a given policy".

2.3. Reimbursement for second opinions

S.B. 896 provides that insurers must reimburse members contemplating or undergoing treatment for cancer for a second medical opinion from a specialist at no additional cost to the insured beyond what the insured would have paid "for comparable services covered under the policy", i.e., for the first opinion or a standard medical consultation.

Special rules apply for a policy that "requires, or provides financial incentives for, the insured to receive covered services from health care providers participating in a provider network". Such a policy must include coverage for a second medical opinion from a non-participating specialist, including a specialist affiliated with a specialty cancer care center, when the attending physician provides a written referral, at no additional cost to the insured beyond what the insured would have paid for services from a participating specialist. The insurer must compensate the non-participating specialist at the usual, customary, and reasonable rate, or at a rate listed on a fee schedule filed and approved by the Division of Insurance.

Note that for the purposes of this analysis we assume that coverage for a second medical opinion from a specialist affiliated with a specialty cancer care center does not include travel to a distant center and other incidental costs, unless reimbursement for such expenses would be made for a visit to an appropriate specialist participating in the network.

2.4. Incentives to reduce care

S.B. 896 forbids an insurer from providing a negative or positive incentive, monetary or otherwise, to providers (or patients) to provide (or accept) care that does not meet the requirements of the bill.

Some forms and systems of provider reimbursement might be interpreted as giving a provider an incentive to cut costs. For example, when an insurer pays for an inpatient

mastectomy procedure using a fixed fee based on a diagnosis-related group (DRG), in theory, the provider could increase its profit by reducing the cost of services. Likewise, a provider paid on a global or capitated (per-member-per-month) basis under a program in which the provider manages the patient's total care would also, in theory, have an incentive for cutting costs.

Based on an interview with legislative staff,[2] we assume the bill's authors do not intend to alter these arrangements or impede payment reform efforts attempting to move beyond fee-for-service systems.

2.5. Services already covered under existing mandates

The federal Women's Health and Cancer Rights Act of 1998 (WHCRA) requires health plans, including self-insured and fully-insured commercial plans, that provide benefits for mastectomies, to also cover:

- Reconstruction of the breast removed by mastectomy and of the other breast to produce a symmetrical appearance
- External breast prostheses (e.g., breast forms) needed before or during reconstruction
- Treatment for any physical complications at all stages of mastectomy, including lymphedema

WHCRA also addresses cost-sharing, providing that "coverage may be subject to annual deductibles and coinsurance provisions as may be deemed appropriate and as are consistent with those established for other benefits under the plan or coverage."

The provisions of S.B. 896 parallel to WHCRA's provisions are redundant, and therefore do not imply increased spending for the services described.

[2] Interview with Amaru Sanchez and other legislative staff, April 7, 2010.

3. FACTORS AFFECTING THE ANALYSIS

Several issues arise in translating the provisions of S.B. 896 and existing law discussed in Section 2 into an analysis of incremental cost.

3.1. Conditions included in S.B. 896

The provisions in S.B. 896 that set coverage standards for inpatient stays and breast reconstruction apply to breast cancer patients. However, the provision requiring coverage for second opinions (Section C in the bill) refers only to "cancer", not "breast cancer" in identifying the conditions for which second opinions are covered. Likewise, the section requiring coverage for lymphedema therapy and devices (Section E) does not limit coverage to patients with any given condition.

For purposes of this analysis, and consistent with the assumptions of the report to which this analysis is an appendix, we assume the provisions focused specifically on breast cancer treatment set the scope for the remainder of the bill, and therefore the bill requires coverage for second opinions regarding diagnoses and treatments for breast cancer only, as opposed to all cancers. Furthermore we assume the bill is requiring coverage for lymphedema therapy and devices for treatment of lymphedema resulting from breast cancer treatment.[3]

Without these assumptions, the cost of the bill would be greater. The cost of expanding second opinion coverage would be approximately seven times larger for all cancer patients, assuming the rate of second opinions per breast cancer case was roughly the same as that for cancer in general.[4] Firm statistics on what portion of lymphedema treatments are necessitated by cancer treatment are less readily available, but informal estimates state that breast cancer related lymphedema makes up anywhere from a quarter

---

[3] Assuming otherwise would also introduce the unlikely possibility that the bill mandates coverage for devices and physical therapy for lymphedema resulting from conditions other than breast cancer, but does not mandate coverage for basic medical treatment for those conditions.

[4] Based on counts of new cancer cases from the American Cancer Society, Estimated New Cancer Cases for Selected Cancer Sites by State, US, 2010, <http://www.cancer.org/docroot/stt/stt_0.asp?from=fast>.

to a half of all cases, meaning costs for lymphedema from any cause would be two to four times higher.

3.2. Mandated procedures vs. federal mandate and current coverage

Even without considering the effect of S.B. 896, coverage for most services mandated by the bill are already either mandated by the federal mandate (WHCRA) or covered in the insurance marketplace. Determining the net effect of S.B. 896 requires identifying the bill's limited incremental effects. Table 1 provides a summary comparison of the provisions of S.B. 896 with WHCRA and current coverage.

Table 1: Comparison of S.B. 896 with WHCRA and Market Coverage

S.B. 896 Mandate	Federal WHCRA Mandate	Typical Market Coverage
A minimum hospital stay, determined by the physician to be appropriate for a lymph node dissection, lumpectomy, or mastectomy	Not mandated	Payer surveys report no grievances regarding length of stay following breast cancer procedures. Provider interviews revealed no complaints.
A second medical opinion by a specialist, including a specialist affiliated with a specialty cancer care center	Not mandated	Almost all policies cover second opinions. At least one large insurer, and some plans under other insurers, does not cover them out of network. Payer surveys report no grievances regarding second opinions. Interviews with breast cancer treatment providers revealed no complaints about coverage.
Breast reconstruction surgery after mastectomy, including reconstruction of the removed breast and of the other breast, and prostheses and reconstruction to treat physical complications, including lymphedema	Reconstruction of the removed breast and of the other breast. Breast prostheses before or during reconstruction. Treatment for physical complications of mastectomy, including lymphedema.	Insurers cover reconstruction. No evidence was observed that commercial policies do not generally meet the terms of the federal mandate, with the possible exception of lymphedema treatments (see below).
Equipment, supplies, complex decongestive therapy, and self-management training for treatment of lymphedema	General treatment for complications of mastectomy, including lymphedema, but no listing of treatment components such as therapy and supplies	Insurers cover treatment of active lymphedema. Coverage for extended physical therapy and equipment/supplies for maintenance may be limited.

Comparing S.B. 896 with WHCRA and current coverage leads us to make the following assumptions for the purposes of this analysis:

- Coverage for mastectomies, lumpectomies, and related procedures is available through all plans. While no current state or federal law requires a minimum length of stay, we have no evidence of grievances against fully-insured commercial plans regarding length-of-stay issues. Furthermore an interview with a supervising breast cancer practitioner[5] revealed few problems with negotiating inpatient stays with payers. Therefore we assume length of stay conflicts occur infrequently enough to have a negligible effect on the cost of the bill.
- Coverage for breast reconstruction is available through all plans. It is mandated by WHCRA, and we have no evidence of the failure or payers to meet WHCRA's requirement in this area. Therefore we assume conflicts over coverage for reconstruction occur infrequently enough to have a negligible effect on the cost of the bill.

In contrast, the following requirements of S.B. 896 appear to have a marginal impact on cost and require more extensive analysis:

- Coverage for second opinions is generally provided by commercial payers. However, at least one large payer reports that it does not cover second opinions from out-of-network providers, nor do some plans under other smaller payers. While insurer surveys showed no grievances regarding coverage for second opinions and our interview with a supervisory breast cancer practitioner revealed no issues regarding second opinion coverage[6], we have to consider the possibility that second opinion costs might rise.
- Coverage for lymphedema, at least coverage for treatment of lymphedema actively presenting symptoms, is provided by all payers. However, breast cancer recovery advocates have pointed out the limits of most plans in covering extended therapy and devices and supplies particularly useful in maintaining improvements. Payer surveys identified limitations in coverage for therapy visits and devices, and reported a few grievances related thereto.

Because coverage for most treatments mandated by S.B. 896 is largely in place, the incremental effect of the bill on the procedures for which insurers will pay will be limited to costs of covering second opinions and lymphedema treatment. The following two

---

[5] Interview with Mehra Golshan, MD, Director of Breast Surgical Services, Dana-Farber/Brigham and Women's Cancer Center, May 20, 2010.
[6] Interview with Mehra Golshan, MD, Director of Breast Surgical Services, Dana-Farber/Brigham and Women's Cancer Center, May 20, 2010.

sections address issues related to estimating the potential incremental costs of those provisions.

3.3. Estimating the cost of second opinion coverage

In general, insurers cover second opinions and our discussions with practitioners did not uncover anecdotal evidence of problems. However, at least one large insurer, Blue Cross Blue Shield of Massachusetts, covers second opinions only from providers within its network, and S.B. 896 would require it to change its practice. A few plans under other smaller insurers would also be affected.

Quantifying the effect of this change is difficult.

- Data for estimating the number and cost of second opinions is sketchy at best. Claim data, including the Division's all-payer claim data, do not distinguish consultations and office visits for second opinions from other consultations and visits. At best, we can assume it is safe to eliminate procedure codes for consultations for "established" patients and in settings, such as emergency rooms, unlikely to be connected to second opinions, but even then we need to isolate second opinion visits from run-of-the-mill new patient visits.
- BCBS has a large provider network including well-known cancer specialty centers in Massachusetts, and the proportion of requested second opinions that would fall outside of that network is probably small, possibly consisting of opinions obtained at specialty cancer centers in other states.
- The analysis requires an estimate of the extent to which out-of-network consultation fees would exceed in-network consultation fees. The networks of Massachusetts insurers include high-profile centers of specialists in a relatively high-priced market, suggesting that in-network rates will not be unusually low, limiting the difference.

3.4. Estimating the cost of lymphedema treatment

As noted, S.B. 896 requires coverage for treatment for physical complications of mastectomy, including lymphedema, provided in the manner determined by the attending physician and the patient to be medically appropriate. Coverage includes benefits for equipment, supplies, complex decongestive therapy (most often delivered by a physical

therapist), and self-management training. All plans provide coverage for treatment for active lymphedema, but many, if not most, policies have limitations on the number of therapy visits (20 to 24 per year) and limits on reimbursements for supplies and devices such as compression garments and pneumatic compressors and related appliances. In particular some of the garments are regarded, according to responses to the Division's survey, as durable medical equipment (DME) and subject to policy DME limits.

Lymphedema coverage in WHCRA

WHCRA requires insurers to cover treatment for lymphedema due to breast cancer treatment. However, responses to the Division's survey state that coverage for therapy and devices is limited, and confirmed by discussions with advocates and practitioners. If we interpret WHCRA's provisions as requiring full coverage for all aspects of lymphedema treatment, then arguably they are not fully enforced. However, for purposes of this analysis we will assume that commercial payers are in compliance with WHCRA, and the language allows the payers to limit the coverage as described.

S.B. 896 lymphedema language

S.B. 896 mandates coverage including "benefits for equipment, supplies, complex decongestive therapy, and outpatient self-management training and education for the treatment of lymphedema." It further provides that such coverage "may be subject to annual deductibles and coinsurance provisions as may be deemed appropriate by the division and as are consistent with those established for other benefits within a given policy."

While S.B. 896 allows lymphedema benefits to be subject to cost-sharing requirements, consistent with those for other benefits within the policy, the bill says nothing about whether procedure caps or DME limits may constrain lymphedema coverage. A narrow reading of S.B. 896 would find that the bill merely requires payers provide the listed benefits for lymphedema (which all payers do to some extent) but does not override the

constraints on therapy or DME – which apply (as does cost-sharing) to benefits for all conditions, not just lymphedema – because it does not address them explicitly. Under this interpretation, these more general policy limits would still be in effect, and the lymphedema provision of S.B. 896 would have little effect on payer costs.

However, for purposes of this analysis, we assume the authors of S.B. 896 intended to remove the procedure count and DME constraints on lymphedema benefits.

- The authors emphasized these benefits by identifying specific components of lymphedema therapy.
- They stated that coverage for lymphedema treatment must be provided "in the manner determined by the attending physician and the patient to be medically appropriate", and we assume this language reduces the insurer's ability to limit service.
- The authors did not explicitly allow DME or other general benefit limits to override the language granting treatment decision-making discretion to practitioners and providers.

Indirect savings

Several advocates for cancer recovery care have pointed out that, left untreated, patients with lymphedema are at increased risk for more dangerous conditions, notably cellulitis, that often require expensive inpatient stays. Avoiding expenses associated with treating these complications could, in theory, offset some of the cost of the bill.

Estimates of indirect costs of S.B. 896 are outside the scope of this analysis. In addition, estimating the potential savings, due to coverage mandated by S.B. 896, from preventing cellulitis and other complications would be difficult. Insurers currently provide substantial coverage for lymphedema treatment, and we have no data on how much more effective in preventing these complications the incremental coverage mandated by S.B. 896 would be, compared to the value of existing lymphedema coverage.

3.5. Cost-sharing provisions

For each set of mandated services, S.B. 896 provides that coverage may be subject to "annual deductibles and coinsurance provisions as may be deemed appropriate by the Division of Insurance" and "as are consistent with those established for other benefits within a given policy." Assuming common definitions for "deductible" (an annual amount of money patients pay for services, before any amount is paid by the insurer) and coinsurance (the percentage of provider reimbursement paid by the patient, e.g., 20 percent, typically up to a plan-year out-of-pocket dollar limit), the bill makes no mention of the third common component of patient cost-sharing: copayments (per-visit or per-procedure payments the patient makes to the provider).

In its response to the Divisions of Health Care Finance and Policy's survey, one (and only one) insurer interpreted this cost-sharing language as allowing deductibles and coinsurance for the mandated services, but forbidding copayments because they were not included explicitly in this brief list of cost-sharing components. Such an interpretation would raise the impact of this bill on premium costs.

For the purposes of this analysis we assume the bill's authors did not mean to forbid copayments for the mandated services. Legislative staff members, during an interview about this bill[7] and in response to a question about the absence of any mention of copayments, did not indicate copayments were forbidden. This was later confirmed by other staff.[8] Furthermore, we assume the authors would not explicitly allow some components of cost-sharing yet forbid the component typically associated with office visits, and perhaps most visible to the patient, without explicitly saying so.

Finally, WHCRA's language on cost-sharing is very similar to the language in S.B. 896. Therefore, insurers who have been charging copayments for these services have been presumably doing so in compliance with the federal law and could continue to do so under S.B. 896. And however S.B. 896's cost-sharing language is interpreted, it

[7] Interview with Amaru Sanchez and other legislative staff, April 7, 2010.
[8] Email from Colby Dillon, Legislative Aide to sponsor Senator Karen E. Spilka, May 28, 2010.

represents no change from the language under the existing federal mandate, and therefore will have no effect on the cost of the bill as estimated by this analysis.

3.6. Time-dependent factors

This analysis provides an estimate of the cost of this mandate for five years, 2011 to 2015. Our analysis will account for:

- Membership trends
- Cost inflation: We assume an annual per-service cost increase of three percent, measured from 2008 and raising the value for 2011 and on.[9]

Because the coverage mandated by S.B. 896 generally consists of enhancements to coverage already in place and is not related to new procedures or provider relationships, if the bill is enacted we expect little lag between enactment and when the benefits begin to affect insurer reimbursement.

4. METHODOLOGY

4.1. Analysis steps

Compass estimated the impact of S.B. 896 with the following steps:

- Estimate the populations covered by the mandate; i.e., identify the types of policies affected and estimate the number of covered individuals
- Measure past use and insurers' expenditures for second opinions and lymphedema treatment
- Estimate (ranges for) the additional cost for second opinions if the bill passes
- Estimate (ranges for) the additional cost for lymphedema treatment if the bill passes
- Estimate changes in per member cost over the next 5 years
- Estimate the impact on premiums by accounting for insurers' retention

[9] Roughly the 3.5 percent trend reported for HMO's in www.mass.gov/Ihqcc/.../2009_04_01_Trends_for_Fully-Insured_HMOs.doc and http://www.mass.gov/Eoca/docs/doi/Consumer/MAHMOTrendReport.pdf

4.2. Data sources

The primary data sources used in the analysis were:

- Interviews with legislative and Division staff
- Interviews with providers and treatment advocates
- Responses to a survey presented by the Division to insurers regarding existing coverage for mandated services
- Government reports and data and academic literature, cited as appropriate
- Claims: The Division provided Massachusetts data from its all-payer claim database for claims containing procedures related to second opinions and lymphedema treatment and diagnoses related to breast cancer or lymphedema for most private plans
- Membership data: The Division provided membership data for the plans represented in the all-payer claim data. We also used other studies prepared for the Division, supplemented with U.S. Census data

The step-by-step description of the estimation process below addresses limitations in some of these sources.

5. ANALYSIS

5.1. Insured population affected by the mandate

Table 2 shows the number of people potentially affected by the mandate. Self-insured populations not subject to the mandate are included only for reference. Estimates of the impact of the bill are derived below by applying the fully insured population membership numbers to estimated PMPM values derived in part from the Division's claim database.[10]

[10] The Division's membership data, representing most of the plans contributing to its all-payer claim database, contains approximately 2.9 million, of which 1.7 million are fully-insured and 1.2 million self-insured. Non-residents who work in Massachusetts and are insured by policies issued in Massachusetts are not included in the Division's count. They may, however, be present in some of the membership numbers gathered from insurance data, and so the member counts in the analysis may include insured non-residents. S.B. 896 effectively applies to insurance regulated by (issued in) Massachusetts, and Massachusetts residents who commute to other states and are insured in those states are generally not included in insurance roles. As a cross-reference, according to the Kaiser Family Foundation, approximately 4.1

Table 2: Projected Membership

	2011	2012	2013	2014	2015
Fully Insured	2,402,000	2,399,000	2,398,000	2,396,000	2,395,000
Self Insured GIC	205,000	205,000	205,000	205,000	205,000
Other Self Insured	1,971,000	1,969,000	1,967,000	1,966,000	1,965,000
Commercial Total	4,578,000	4,573,000	4,570,000	4,567,000	4,565,000

5.2. Current claim costs for second opinions and lymphedema treatment

Using carrier claim data, provided by the Division, we estimated the amount paid per member for 2008 claims for second opinions and lymphedema treatment. Because treatments for lymphedema can involve physical therapy, which carries the same procedure code whether it is performed for lymphedema or other conditions, we limited the claim records to those carrying a diagnosis of breast cancer or lymphedema. Therefore, the claim data we examined will not include claims for therapy for lymphedema with no, or incorrect, diagnoses; the data might understate payments for genuine lymphedema treatment.

Likewise, consultations and office visits are very common, and again we relied on a diagnosis code showing breast cancer or lymphedema to limit the claims. Furthermore, we omitted procedure codes for evaluations associated with specific routine processing, such as emergency room admittance, and most significantly, for established patients.

million Massachusetts residents were covered under non-government health plans in '07-'08. Kaiser Family Foundation, "Massachusetts: Health Insurance Coverage of the Total Population, states (2007-2008)", accessed 1/26/10, <http://www.statehealthfacts.org/profileind.jsp?ind=125&cat=3&rgn=23>. Note the Kaiser Foundation counts might include residents insured in other states.

Table 3: 2008 Cost of Lymphedema Treatment and Second Opinions per Member per Month

	---------- Lymphedema ---------- Therapy	Devices	- 2nd Opnion - Evaluation
Fully Insured	$ 0.006	$ 0.006	$ 0.109
Self Insured (GIC proxy)	$ 0.012	$ 0.015	$ 0.136

Table 3 provides a brief summary of 2008 dollars paid, per-member-per-month. Reimbursements for these procedures, as recorded in the Division's claim data, are relatively low on a PMPM basis. As noted, self-insured plans are, in general, not subject to S.B. 896; however we will use the PMPM costs for self-insured plans to estimate part of the effect of the bill on GIC plans since the Division's claim data does not allow us to isolate the GIC population directly. The table displays costs to the tenth of a cent to illustrate the overall low cost, and the difference between fully-insured and self-insured plans, which often have richer benefits.

5.3. Changes in second opinion costs due to S.B. 896

S.B. 896 requires insurers to cover second opinions, including those from out-of-network providers. Most insurers cover second opinions, but rates for out-of-network opinions could be higher. Using the same procedure codes, roughly identified as procedures that might include second opinions, which we used to create Table 3, we found the billed amounts to be some 60% higher than allowed amounts. Taking this as the high end of the range we assume charges will be 20 to 60 percent higher. We will assume this is a rough proxy for the additional cost of an out-of network consultation.

As noted in Section 3, estimating actual expenses for second opinions regarding breast cancer treatment is difficult because of the need for accurate diagnoses and the lack of evaluation procedure codes that distinguish first and subsequent opinions.

We will make a set of assumptions, that might overstate costs somewhat, but which meet our need to be conservative:

- 10 to 40 percent of the reimbursement, measured for codes that might reflect second opinions, is for second opinion consultations.
- As noted above, costs for out-of-network consultations would be 20 to 60 percent higher than in-network charges.
- 65 percent of the insured population (BCBS's share of 2008 fully-insured membership, plus a portion of other plans) is covered by plans where the fee differential might come into play. Whether the rates at which all the remaining plans pay for second opinions meet the usual and customary standard (as required by the mandate) is not clear from the Division's survey data, but at least some do. Given the uncertainty, we assume these remaining plans do not contribute to the cost.

The cost of the mandate to cover second opinions from out-of-network providers has two components:

- Some out-of-network second opinions are currently paid out-of-pocket or skipped entirely. With improved coverage, we assume the number of second opinions for which affected insurers would pay will increase by 20 percent (and be paid at the higher rates).
- Insurers currently pay for some second opinions for which the patient might prefer to go out-of-network and for which the insurer will have to pay a higher rate. We assume a (conservatively large) 50 percent of the current second opinion consultations would use out-of-network resources, at the higher rates.

The calculations yield the rough estimate of the incremental PMPM cost of the second opinion provisions shown in Table 4.

Table 4: Second Opinion Contribution to Mandate Cost per Member per Month (2008 dollars)

	Low	Mid	High
Fully Insured	$ 0.002	$ 0.008	$ 0.018
Self Insured (GIC proxy)	$ 0.003	$ 0.011	$ 0.022

5.4. Changes in lymphedema treatment costs due to S.B. 896

As noted, commercial insurers generally cover treatment for lymphedema, and we found no evidence that they do not cover medical treatment for lymphedema actively exhibiting symptoms. However, anecdotal evidence was presented that some patients covered under fully-insured commercial plans encountered limits in coverage for the physical therapy and supplies/equipment needed for sustained, "maintenance" treatment of lymphedema. Therefore any cost attributable to the proposed bill's mandate for coverage of lymphedema treatment will arise from patients who are currently encountering caps on coverage and who would use more services/devices if the caps are removed.

The per-member-per-month costs for therapy and devices measured from the Division's claim data (shown in Table 3) are lower than the amount even modest use of the benefit should generate. The following hypothetical example illustrates modest use.

- The Massachusetts incidence rate for breast cancer is 132 per 100 thousand.[11]
- Assume 80 percent of breast cancer patients have surgery that increases the risk of lymphedema. Estimates of the portion of breast cancer surgery patients who develop lymphedema range from 15 to 50 percent. For this example, assume 20 percent.
- Assume the average patient uses only 5 therapy sessions per year, well below the typical policy cap, at $120 per session.
- Assume the patient purchases two sets of bandages at $100 per set, and not more expensive night garments or other devices.

In this example the per patient cost is $800 per year, the cost per 100 thousand members is $17,000 (132 times 80% times 20% times $800), translating to a PMPM of $0.014 or roughly the sum of the therapy and device PMPMs measured in the Division's data for fully-insured plans shown in Table 3. (Values in Table 3 for self-insured plans are greater.) Furthermore the above example only covers lymphedema due to new cases of breast cancer. Some treatments continue well over a year.

[11] American Cancer Society, "Cancer Facts and Figures 2010", <http://www.cancer.org/downloads/STT/Cancer_Facts_and_Figures_2010.pdf>.

As noted, we must allow that the Division's claim data might undercount somewhat services, particularly physical therapy, for lymphedema, because a correct diagnosis is required for us to identify them. Nonetheless, the order of magnitude of the resulting PMPM in the hypothetical, suggests actual usage of the benefit is relatively low – i.e., few users test the limits – and suggests removing the limits will have at most a modest effect.

To estimate the effect of removing limits on therapy and DME, we extended the hypothetical, assuming a distribution of lymphedema severity and treatment costs based on data from providers,[12] and varying those assumptions to obtain a range of estimates. The model's assumptions, particularly about the severity distribution, were conservatively high. The net effect of removing the limits is shown in Table 5. Appendix A shows the model.[13]

Table 5: Net Effect of Changes in Lymphedema Treatment Cost per Member per Month

	Low	Mid	High
Net change in PMPM	$ 0.006	$ 0.028	$ 0.073

We assume the same PMPM increases for fully- and self-insured plans.

[12] Interview with Nancy Roberge, DPT, Director, Chestnut Hill Physical Therapy Associates, May 28, 2010. Email from Nancy Roberge, June 10, 2010. Interview with Roya Ghazinouri, DPT, MS, Inpatient Clinical Supervisor, Department of Rehabilitation Services, Brigham and Women's Hospital, May 28, 2010.

[13] For an additional perspective on an earlier bill mandating coverage for lymphedema, see the July 2004 report of the Massachusetts Division of Health Care Finance and Policy on S.B. 848/H.B. 1309: "An Act Providing Coverage for Lymphedema Treatments". That study identified costs affecting fully-insured plans arising from the proposed mandate to cover massage therapy, a previously uncovered service. The analysis did not estimate costs due to the removal of limits on physical therapy and supplies/equipment, arguing that the average use of the benefits, without the mandate, was so low that very few patients would use many more units of service once the mandate removed the limits, and that the resulting costs would be very small compared with other costs of the bill. See the Publications section of the Division's website for how to obtain archived reports. <http://www.mass.gov/?pageID=eohhs2agencylanding&L=4&L0=Home&L1=Government&L2=Departments+and+Divisions&L3=Division+of+Health+Care+Finance+%26+Policy&sid=Eeohhs2>.

5.5. Increase in covered costs to be paid by health insurers

Applying the estimated increase in per-member per-month costs, combining Tables 4 and 5, to the projected annual insured membership for the next five years yields the range of estimates in Tables 5A for fully-insured plans. The table reflects changes in projected membership and an assumption of three percent per year[14] for inflation in service cost (over the 2008 base year).

Table 5A: Estimated Cost of Mandated Services – Fully-insured Plans

	-2011 -	-2012 -	-2013 -	-2014 -	-2015 -	- Total -
Members (K)	2,402	2,399	2,398	2,396	2,395	
Low estimate ($K)	$ 270	$ 278	$ 286	$ 294	$ 303	$ 1,430
Mid estimate ($K)	1,163	1,196	1,231	1,267	1,305	6,162
High estimate ($K)	2,860	2,942	3,029	3,118	3,210	15,159

Applying the PMPM changes to the fully- and self-insured membership components of the GIC plans, we derive a similar set of values, shown below in Table 5B. Note the small GIC fully-insured membership is also included in the general fully-insured results.

Table 5B: Estimated Cost of Mandated Services – GIC Plans

	-2011 -	-2012 -	-2013 -	-2014 -	-2015 -	- Total -
Members (K)	231	231	231	230	230	
Low estimate ($K)	$ 28	$ 28	$ 29	$ 30	$ 31	$ 146
Mid estimate ($K)	117	121	125	128	132	622
High estimate ($K)	287	295	304	312	321	1,520

5.6. Effect of the mandate on health insurance premiums

To convert medical cost estimates to premiums, we added insurer retention (i.e., the portion of premiums that represent administrative costs and profit for bearing risk on covered members). Using historical data, we estimated a retention ratio of approximately

[14] Roughly the 3.5 percent trend reported for HMO's in <www.mass.gov/Ihqcc/.../2009_04_01_Trends_for_Fully-Insured_HMOs.doc> and <http://www.mass.gov/Eoca/docs/doi/Consumer/MAHMOTrendReport.pdf>.

12 percent. Table 6 displays the resulting net effect on premiums for fully-insured plans (including the small fully-insured GIC membership), showing the net increase measured on a per-member per-month (PMPM) basis and as a percentage of estimated premiums.

Table 6: Estimated Incremental Impact of S.B. 896 on Fully-Insured Plan Premiums

	-2011 -	-2012 -	-2013 -	-2014 -	-2015 -	- Mean -
Members (K)	2,402	2,399	2,398	2,396	2,395	
Med Exp Low ($K)	$ 270	$ 278	$ 286	$ 294	$ 303	$ 286
Med Exp Mid ($K)	1,163	1,196	1,231	1,267	1,305	1,232
Med Exp High ($K)	2,860	2,942	3,029	3,118	3,210	3,032
Premium Low ($K)	$ 307	$ 315	$ 325	$ 334	$ 344	$ 325
Premium Mid ($K)	1,321	1,359	1,399	1,440	1,483	1,401
Premium High ($K)	3,250	3,343	3,442	3,543	3,647	3,445
Low PMPM	$ 0.01	$ 0.01	$ 0.01	$ 0.01	$ 0.01	$ 0.01
Mid PMPM	0.05	0.05	0.05	0.05	0.05	0.05
High PMPM	0.11	0.12	0.12	0.12	0.13	0.12
Est Mo. Premium	$ 442	$ 468	$ 496	$ 526	$ 558	$ 498
Premium % Rise Low	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Premium % Rise Mid	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Premium % Rise High	0.03%	0.02%	0.02%	0.02%	0.02%	0.02%

CONCLUSION

For fully-insured plans, the estimated mean PMPM cost of the mandate provision of S.B. 896 over five years is $0.01 in the low scenario to $0.12 in the high scenario. We estimate that S.B. 896 would increase premiums by up to 0.02 percent on average over the five-year period. Analysis of the cost-effectiveness of the mandated treatment is beyond the scope of this analysis, but to the extent that treatment prevents additional medical expense down the road, this cost increase would be balanced by benefits in preventing that expense.

Because S.B. 896 addresses procedures already largely covered by insurers, the effect of the bill is limited, especially compared to the large amount of money spent on breast cancer treatment in general.

APPENDICES

Appendix A: Estimating the Costs of Lymphedema Treatment in Excess of Current Limits

Appendix A: Estimating the Costs of Lymphedema Treatment in Excess of Current Limits[15]

Low Range Assumptions

Mass breast cancer incidence/100K	132
Surgery rate	80%
PT annual visit limit	26
PT cost per session	$ 100
DME limit	$ 1,500
Cost per bandage set	$ 100

Severity	**None**	**Mild**	**Moderate**	**Severe**	**Total**
Severity distribution	75%	10%	10%	5%	100%
Lymphedema patients/100K	79	11	11	5	106
Costs without limits					
PT sessions per year	-	5	20	40	
Sets of bandages	-	2	3	6	
Cost of other devices	$ -	$ -	$ 200	$ 400	
Equipment, after limit	$ -	$ 200	$ 500	$ 1,000	
Total per patient	$ -	$ 700	$ 2,500	$ 5,000	
Total/100K	$ -	$ 7,392	$ 26,400	$ 26,400	$ 60,192
PMPM					$ 0.05
Costs with limits					
PT sessions after limit	-	5	20	26	
Equipment, after limit	$ -	$ 200	$ 500	$ 1,000	
Total per patient	$ -	$ 700	$ 2,500	$ 3,600	
Total/100K	$ -	$ 7,392	$ 26,400	$ 19,008	$ 52,800
PMPM					$ 0.04
PMPM Difference					$ 0.01

[15] Incidence from the American Cancer Society. Benefit elements from insurer surveys. Rough estimates of severity distribution, treatment needs/frequencies, and rates for the mid-level case came from providers. Severity assumptions (percent of cases developing lymphedema) assume a higher, narrower range than the 15% to 50% mentioned in the body. Interview with Nancy Roberge, DPT, Director, Chestnut Hill Physical Therapy Associates, May 28, 2010. Email from Nancy Roberge, June 10, 2010. Interview with Roya Ghazinouri, DPT, MS, Inpatient Clinical Supervisor, Dept. of Rehabilitation Services, Brigham and Women's Hospital, May 28, 2010.

Mid-Range Assumptions

Mass breast cancer incidence/100K	132
Surgery rate	80%
PT annual visit limit	26
PT cost per session	$ 120
DME limit	$ 750
Cost per bandage set	$ 100

Severity	**None**	**Mild**	**Moderate**	**Severe**	**Total**
Severity distribution	65%	15%	10%	10%	100%
Lymphedema patients/100K	69	16	11	11	106
Costs without limits					
PT sessions per year	-	5	20	50	
Sets of bandages	-	2	3	6	
Cost of other devices	$ -	$ -	$ 200	$ 500	
Equipment, after limit	$ -	$ 200	$ 500	$ 1,100	
Total per patient	$ -	$ 800	$ 2,900	$ 7,100	
Total/100K	$ -	$ 12,672	$ 30,624	$ 74,976	$ 118,272
PMPM					$ 0.10
Costs with limits					
PT sessions after limit	-	5	20	26	
Equipment, after limit	$ -	$ 200	$ 500	$ 750	
Total per patient	$ -	$ 800	$ 2,900	$ 3,870	
Total/100K	$ -	$ 12,672	$ 30,624	$ 40,867	$ 84,163
PMPM					$ 0.07
PMPM Difference					$ 0.03

Upper Range Assumptions

Mass breast cancer incidence/100K	132
Surgery rate	80%
PT annual visit limit	26
PT cost per session	$ 150
DME limit	$ 750
Cost per bandage set	$ 100

Severity	**None**	**Mild**	**Moderate**	**Severe**	**Total**
Severity distribution	55%	15%	15%	15%	100%
Lymphedema patients/100K	58	16	16	16	106
Costs without limits					
PT sessions per year	-	5	25	60	
Sets of bandages	-	2	4	6	
Cost of other devices	$ -	$ -	$ 300	$ 600	
Equipment, after limit	$ -	$ 200	$ 700	$ 1,200	
Total per patient	$ -	$ 950	$ 4,450	$ 10,200	
Total/100K	$ -	$ 15,048	$ 70,488	$ 161,568	$ 247,104
PMPM					$ 0.21
Costs with limits					
PT sessions after limit	-	5	25	26	
Equipment, after limit	$ -	$ 200	$ 700	$ 750	
Total per patient	$ -	$ 950	$ 4,450	$ 4,650	
Total/100K	$ -	$ 15,048	$ 70,488	$ 73,656	$ 159,192
PMPM					$ 0.13
PMPM Difference					$ 0.07

Blank page

Actuarial Assessment of Senate Bill 896:
An Act Relative to Women's Health
and Cancer Recovery

Prepared for

Commonwealth of Massachusetts
Division of Health Care Finance and Policy

Prepared by

Compass Health Analytics, Inc.

June 18, 2010

Actuarial Assessment of Senate Bill 896:
An Act Relative to Women's Health
and Cancer Recovery

Table of Contents

Executive Summary ..... ***i***

1. Introduction ***1***

2. Provisions of S.B. 896 ..... ***1***

2.1. Insured populations affected by S.B. 896 ..... *2*

2.2. Services mandated by S.B. 896 ..... *3*

2.3. Reimbursement for second opinions *4*

2.4. Incentives to reduce care *4*

2.5. Services already covered under existing mandates *5*

3. Factors Affecting the Analysis ***6***

3.1. Conditions included in S.B. 896 ..... *6*

3.2. Mandated procedures vs. federal mandate and current coverage *7*

3.3. Estimating the cost of second opinion coverage *9*

3.4. Estimating the cost of lymphedema treatment *9*

3.5. Cost-sharing provisions *12*

3.6. Time-dependent factors *13*

4. Methodology ***13***

4.1. Analysis steps *13*

4.2. Data sources *14*

5. Analysis ***14***

5.1. Insured population affected by the mandate *14*

5.2. Current claim costs for second opinions and lymphedema treatment *15*

5.3. Changes in second opinion costs due to S.B. 896 ..... *16*

5.4. Changes in lymphedema treatment costs due to S.B. 896 ..... *18*

5.5. Increase in covered costs to be paid by health insurers *20*

5.6. Effect of the mandate on health insurance premiums *20*

Conclusion ***21***

Appendices ***22***

Appendix A: Estimating the Costs of Lymphedema Treatment in Excess of Current Limits *23*

This report was prepared by Lars Loren, JD, James Highland, PhD, MHSA, Lisa Manderson, ASA, MAAA, and Joshua Roberts.

compass
Health Analytics

Actuarial Assessment of Senate Bill 896:
An Act Relative to Women's Health
and Cancer Recovery

EXECUTIVE SUMMARY

Senate Bill 896, before the 2009-2010 session of the Massachusetts Legislature, mandates coverage, by health insurance plans regulated by the Commonwealth, for minimum hospital stays and breast reconstruction for breast cancer patients, second opinions on proposed cancer diagnoses or treatment, and treatment for lymphedema. The Massachusetts Division of Health Care Finance and Policy (the Division) engaged Compass Health Analytics, Inc. to provide an actuarial estimate of the effect that enactment of the bill would have on the cost of health care insurance in Massachusetts.

Background

S.B. 896 requires fully-insured health plans and plans operated for state employees to cover.

- A minimum hospital stay, for a period determined by the physician and the patient to be medically appropriate, for a lymph node dissection, lumpectomy, or mastectomy
- A second medical opinion by an appropriate cancer specialist, including a specialist affiliated with a specialty cancer treatment center, in the event of a positive or negative diagnosis, a recurrence, or a recommendation of a course of treatment
- Breast reconstruction surgery after a mastectomy, including all stages of reconstruction of the removed breast, reconstruction of the other breast to produce a symmetrical appearance, and prostheses and reconstruction to treat physical complications of mastectomy, including lymphedema
- Equipment, supplies, complex decongestive therapy, and outpatient self-management training and education for the treatment of lymphedema

In addition, the bill:

- Provides, for each set of mandated services, that coverage may be subject to cost sharing "consistent with those established for other benefits within a given policy"
- Forbids an insurer from providing an incentive to providers to provide care that does not meet the requirements of the bill

Discussion and correspondence with the Division and legislative staff served to clarify the intent of language in the bill permitting cost-sharing and language limiting the bill to the treatment of breast cancer and related complications.

Analysis

Compass estimated the impact of the mandate using the following steps:

- Analyze the provisions of the bill and compare the requirements of each to existing statutes and current generally-available benefit plan features.
- Estimate insurers' current expenditures on services mandated by the bill but not already mandated by existing statutes or covered under generally-available plans, drawing upon the Division's health care claims database.
- Estimate a range for the cost of complying with the provisions of S.B. 896 requiring coverage for procedures currently not covered.
- Estimate the impact on premiums for fully-insured commercial plans by accounting for insurers' retention for administrative expense and risk/profit.

Summary Results

The analysis compares the services mandated in S.B. 896 to current coverage levels and existing mandates. Most procedures related to breast cancer treatment are already covered by insurers. In addition, the existing federal Women's Health and Cancer Rights Act of 1998 (WHCRA) requires health plans that provide benefits for mastectomies to also cover breast reconstruction, external breast prostheses needed before or during reconstruction, and treatment for any physical complications at all stages of mastectomy, including lymphedema. As a result, S.B. 896's provisions for these services would not

have an incremental effect on insurers' costs, as they are redundant to current coverage and mandates.

Only two of the bill's provisions would have a net effect on coverage.

- The bill requires insurers to pay for second opinions, even those from out-of-network providers. If the providers are out-of-network, it requires insurers to pay them at the usual and customary rate, which may exceed the in-network rate. While most insurers currently cover second opinions, some do not cover them for out-of-network providers.
- The bill requires insurers to pay for physical therapy, supplies, and equipment to treat lymphedema. Most insurers already cover basic medical treatment for lymphedema, and most currently cover therapy and supplies/equipment. But most have caps on the number of visits or the amount reimbursed for equipment. This analysis assumes the intent of the bill is to remove these caps.

Isolating second opinion charges from primary consultations in the Division's claim data is difficult; however, the analysis makes some reasonable assumptions about what portion of claims are attributable to second opinions and what effect the bill would have on pricing. To estimate additional lymphedema treatment costs mandated under the bill, the analysis uses a simple model, shown in Appendix A. Tables ES-1 and ES-2 show the range of the estimated impact on per-member-per-month medical costs.

Table ES-1: Second Opinion Contribution to Mandate Cost per Member per Month (2008 dollars)

Low	Mid	High
$ 0.00	$ 0.01	$ 0.02

Table ES-2: Net Effect of Changes in Lymphedema Treatment Cost per Member per Month

Low	Mid	High
$ 0.01	$ 0.03	$ 0.07

The primary focus of our work is estimating the bill's impact on premiums for fully-insured private plans. The average net premium cost of S.B. 896 over the next five years

for those plans ranges from well under a million to approximately $3.4 million per year. Accounting for administrative expenses, the estimated mean PMPM cost over five years is $0.01 to $0.12. We estimate that S.B. 896 would increase fully-insured premiums up to 0.02 percent on average over five years.

Table ES-3 summarizes the effect on premium costs for fully-insured plans, averaged over five years.

Table ES-3: Estimated Incremental Impact of S.B. 896 on Premium Costs for Fully-insured Plans

	-2011 -	-2012 -	-2013 -	-2014 -	-2015 -	- Mean -
Members (K)	2,402	2,399	2,398	2,396	2,395	
Med Exp Low ($K)	$ 270	$ 278	$ 286	$ 294	$ 303	$ 286
Med Exp Mid ($K)	1,163	1,196	1,231	1,267	1,305	1,232
Med Exp High ($K)	2,860	2,942	3,029	3,118	3,210	3,032
Premium Low ($K)	$ 307	$ 315	$ 325	$ 334	$ 344	$ 325
Premium Mid ($K)	1,321	1,359	1,399	1,440	1,483	1,401
Premium High ($K)	3,250	3,343	3,442	3,543	3,647	3,445
Low PMPM	$ 0.01	$ 0.01	$ 0.01	$ 0.01	$ 0.01	$ 0.01
Mid PMPM	0.05	0.05	0.05	0.05	0.05	0.05
High PMPM	0.11	0.12	0.12	0.12	0.13	0.12
Est Mo. Premium	$ 442	$ 468	$ 496	$ 526	$ 558	$ 498
Premium % Rise Low	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Premium % Rise Mid	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Premium % Rise High	0.03%	0.02%	0.02%	0.02%	0.02%	0.02%

Actuarial Assessment of Senate Bill 896:
An Act Relative to Women's Health
and Cancer Recovery

1. INTRODUCTION

Senate Bill 896, before the 2009-2010 session of the Massachusetts Legislature, mandates coverage, by health insurance plans regulated by the Commonwealth, for minimum hospital stays and breast reconstruction for breast cancer patients, second opinions on proposed cancer diagnoses or treatment, and treatment for lymphedema. The Massachusetts Division of Health Care Finance and Policy (the Division) engaged Compass Health Analytics, Inc. to provide an actuarial estimate of the effect that enactment of the bill would have on the cost of health care insurance in Massachusetts.

Assessing the cost impact entails analyzing the incremental effect of the bill on spending for insurance plans subject to the proposed law. This requires determining if the bill sets a standard for coverage higher than either the standard for coverage under existing mandates or coverage already generally provided by insurers. The analysis then turns to estimating the cost of services under the coverage requirements incremental under the bill.

Section 2 of this analysis outlines the provisions of the bill. Section 3 discusses important considerations in translating S.B. 896's language into estimates of its incremental impact on health care costs. Section 4 describes the basic methodology used for the calculations in Section 5, which steps through the analysis and its results.

2. PROVISIONS OF S.B. 896

Interpreting S.B. 896 entails identifying the insured populations it covers and the benefit requirements it adds, beyond existing mandates and coverage already offered voluntarily by insurers. The Division's report, to which this actuarial analysis is attached, contains

more detailed descriptions of the provisions and an analysis of the efficacy of the proposed procedures. This analysis will focus on the financial implications of the mandate.

2.1. Insured populations affected by S.B. 896

The structure of S.B. 896 differs from the structure typical of most of the health benefit mandate bills that come before the Legislature. Rather than amending directly the statute chapters that govern various types of health plans (health insurance companies, medical service corporations, HMOs, etc., governed by General Laws chapters 175, 176A, 176B, and 176G), the bill identifies the categories of affected plans.[1] Included in the affected plans are fully-insured commercial plans. Health insurance plans, operating as self-insured entities (i.e., the employer policy holder retains the risk for medical expenditures and uses the insurer to provide administrative functions), are subject to federal law, and not to state-level mandates, and are excluded from this analysis. However, the mandate does apply to self-insured plans operated by the Group Insurance Commission (GIC) for the benefit of state, and participating county and local, employees (G.L. c. 32A), since the Legislature can require the commissioners of the GIC to follow the mandate.

The bill does not limit its effect to residents of the Commonwealth. Therefore the proposed mandate would apply to a nonresident, insured by a fully-insured plan regulated by Massachusetts (e.g., someone working for a Massachusetts employer but in another state), although such a person will not be in the Division's claim data.

The bill specifically excludes Medicare supplemental policies governed under federal or state law; Medicare and federally-regulated "medigap" policies are not subject to state

[1] It provides "any insurer proposing to issue individual or group accident and sickness insurance policies providing hospital, medical and surgical, or major medical coverage on an expense-incurred basis; any corporation providing individual or group accident and sickness insurance policies providing hospital, medical and surgical, or major medical coverage on an expense-incurred basis; any health maintenance organization contract providing a health care plan for health care services; and any group blanket policy of accident and sickness insurance, including the contributory group insurance for persons in the active or retired service of the Commonwealth, that covers medical and surgical benefits, shall provide coverage consistent with all of the provisions of this section".

law, regardless. The bill does not limit coverage to persons under 65; note, however, that the portion of the membership of plans affected by the mandate that is over 65 is small (less than two percent).

Finally, despite the bill's title, it contains no provisions limiting the mandated coverage to women. Female and male patients alike are within the scope of the bill.

2.2. Services mandated by S.B. 896

S.B. 896 requires coverage for a specified set of services, including:

- A minimum hospital stay, for a period determined by the attending physician and the patient to be medically appropriate, for a lymph node dissection, lumpectomy, or mastectomy;
- A second medical opinion by an appropriate specialist, including but not limited to a specialist affiliated with a specialty cancer treatment center, in the event of a positive or negative diagnosis of cancer, a recurrence of cancer, or a recommendation of a course of treatment for cancer;
- Breast reconstruction surgery after a mastectomy, provided in the manner determined by the attending physician and the patient to be medically appropriate, and including all stages of reconstruction of the breast removed by mastectomy, reconstruction of the other breast to produce a symmetrical appearance, and prostheses and reconstruction to treat physical complications of mastectomy, including lymphedema; and
- Equipment, supplies, complex decongestive therapy, and outpatient self-management training and education for the treatment of lymphedema, if prescribed by a health care professional legally authorized to prescribe or provide such items under law.

For each set of mandated services, S.B. 896 provides that coverage may be subject to "annual deductibles and coinsurance provisions as may be deemed appropriate by the Division of Insurance" and "as are consistent with those established for other benefits within a given policy".

2.3. Reimbursement for second opinions

S.B. 896 provides that insurers must reimburse members contemplating or undergoing treatment for cancer for a second medical opinion from a specialist at no additional cost to the insured beyond what the insured would have paid "for comparable services covered under the policy", i.e., for the first opinion or a standard medical consultation.

Special rules apply for a policy that "requires, or provides financial incentives for, the insured to receive covered services from health care providers participating in a provider network". Such a policy must include coverage for a second medical opinion from a non-participating specialist, including a specialist affiliated with a specialty cancer care center, when the attending physician provides a written referral, at no additional cost to the insured beyond what the insured would have paid for services from a participating specialist. The insurer must compensate the non-participating specialist at the usual, customary, and reasonable rate, or at a rate listed on a fee schedule filed and approved by the Division of Insurance.

Note that for the purposes of this analysis we assume that coverage for a second medical opinion from a specialist affiliated with a specialty cancer care center does not include travel to a distant center and other incidental costs, unless reimbursement for such expenses would be made for a visit to an appropriate specialist participating in the network.

2.4. Incentives to reduce care

S.B. 896 forbids an insurer from providing a negative or positive incentive, monetary or otherwise, to providers (or patients) to provide (or accept) care that does not meet the requirements of the bill.

Some forms and systems of provider reimbursement might be interpreted as giving a provider an incentive to cut costs. For example, when an insurer pays for an inpatient

mastectomy procedure using a fixed fee based on a diagnosis-related group (DRG), in theory, the provider could increase its profit by reducing the cost of services. Likewise, a provider paid on a global or capitated (per-member-per-month) basis under a program in which the provider manages the patient's total care would also, in theory, have an incentive for cutting costs.

Based on an interview with legislative staff,[2] we assume the bill's authors do not intend to alter these arrangements or impede payment reform efforts attempting to move beyond fee-for-service systems.

2.5. Services already covered under existing mandates

The federal Women's Health and Cancer Rights Act of 1998 (WHCRA) requires health plans, including self-insured and fully-insured commercial plans, that provide benefits for mastectomies, to also cover:

- Reconstruction of the breast removed by mastectomy and of the other breast to produce a symmetrical appearance
- External breast prostheses (e.g., breast forms) needed before or during reconstruction
- Treatment for any physical complications at all stages of mastectomy, including lymphedema

WHCRA also addresses cost-sharing, providing that "coverage may be subject to annual deductibles and coinsurance provisions as may be deemed appropriate and as are consistent with those established for other benefits under the plan or coverage."

The provisions of S.B. 896 parallel to WHCRA's provisions are redundant, and therefore do not imply increased spending for the services described.

[2] Interview with Amaru Sanchez and other legislative staff, April 7, 2010.

3. Factors Affecting the Analysis

Several issues arise in translating the provisions of S.B. 896 and existing law discussed in Section 2 into an analysis of incremental cost.

3.1. Conditions included in S.B. 896

The provisions in S.B. 896 that set coverage standards for inpatient stays and breast reconstruction apply to breast cancer patients. However, the provision requiring coverage for second opinions (Section C in the bill) refers only to "cancer", not "breast cancer" in identifying the conditions for which second opinions are covered. Likewise, the section requiring coverage for lymphedema therapy and devices (Section E) does not limit coverage to patients with any given condition.

For purposes of this analysis, and consistent with the assumptions of the report to which this analysis is an appendix, we assume the provisions focused specifically on breast cancer treatment set the scope for the remainder of the bill, and therefore the bill requires coverage for second opinions regarding diagnoses and treatments for breast cancer only, as opposed to all cancers. Furthermore we assume the bill is requiring coverage for lymphedema therapy and devices for treatment of lymphedema resulting from breast cancer treatment.[3]

Without these assumptions, the cost of the bill would be greater. The cost of expanding second opinion coverage would be approximately seven times larger for all cancer patients, assuming the rate of second opinions per breast cancer case was roughly the same as that for cancer in general.[4] Firm statistics on what portion of lymphedema treatments are necessitated by cancer treatment are less readily available, but informal estimates state that breast cancer related lymphedema makes up anywhere from a quarter

---

[3] Assuming otherwise would also introduce the unlikely possibility that the bill mandates coverage for devices and physical therapy for lymphedema resulting from conditions other than breast cancer, but does not mandate coverage for basic medical treatment for those conditions.

[4] Based on counts of new cancer cases from the American Cancer Society, Estimated New Cancer Cases for Selected Cancer Sites by State, US, 2010, <http://www.cancer.org/docroot/stt/stt_0.asp?from=fast>.

to a half of all cases, meaning costs for lymphedema from any cause would be two to four times higher.

3.2. Mandated procedures vs. federal mandate and current coverage

Even without considering the effect of S.B. 896, coverage for most services mandated by the bill are already either mandated by the federal mandate (WHCRA) or covered in the insurance marketplace. Determining the net effect of S.B. 896 requires identifying the bill's limited incremental effects. Table 1 provides a summary comparison of the provisions of S.B. 896 with WHCRA and current coverage.

Table 1: Comparison of S.B. 896 with WHCRA and Market Coverage

S.B. 896 Mandate	Federal WHCRA Mandate	Typical Market Coverage
A minimum hospital stay, determined by the physician to be appropriate for a lymph node dissection, lumpectomy, or mastectomy	Not mandated	Payer surveys report no grievances regarding length of stay following breast cancer procedures. Provider interviews revealed no complaints.
A second medical opinion by a specialist, including a specialist affiliated with a specialty cancer care center	Not mandated	Almost all policies cover second opinions. At least one large insurer, and some plans under other insurers, does not cover them out of network. Payer surveys report no grievances regarding second opinions. Interviews with breast cancer treatment providers revealed no complaints about coverage.
Breast reconstruction surgery after mastectomy, including reconstruction of the removed breast and of the other breast, and prostheses and reconstruction to treat physical complications, including lymphedema	Reconstruction of the removed breast and of the other breast. Breast prostheses before or during reconstruction. Treatment for physical complications of mastectomy, including lymphedema.	Insurers cover reconstruction. No evidence was observed that commercial policies do not generally meet the terms of the federal mandate, with the possible exception of lymphedema treatments (see below).
Equipment, supplies, complex decongestive therapy, and self-management training for treatment of lymphedema	General treatment for complications of mastectomy, including lymphedema, but no listing of treatment components such as therapy and supplies	Insurers cover treatment of active lymphedema. Coverage for extended physical therapy and equipment/supplies for maintenance may be limited.

Comparing S.B. 896 with WHCRA and current coverage leads us to make the following assumptions for the purposes of this analysis:

- Coverage for mastectomies, lumpectomies, and related procedures is available through all plans. While no current state or federal law requires a minimum length of stay, we have no evidence of grievances against fully-insured commercial plans regarding length-of-stay issues. Furthermore an interview with a supervising breast cancer practitioner[5] revealed few problems with negotiating inpatient stays with payers. Therefore we assume length of stay conflicts occur infrequently enough to have a negligible effect on the cost of the bill.
- Coverage for breast reconstruction is available through all plans. It is mandated by WHCRA, and we have no evidence of the failure or payers to meet WHCRA's requirement in this area. Therefore we assume conflicts over coverage for reconstruction occur infrequently enough to have a negligible effect on the cost of the bill.

In contrast, the following requirements of S.B. 896 appear to have a marginal impact on cost and require more extensive analysis:

- Coverage for second opinions is generally provided by commercial payers. However, at least one large payer reports that it does not cover second opinions from out-of-network providers, nor do some plans under other smaller payers. While insurer surveys showed no grievances regarding coverage for second opinions and our interview with a supervisory breast cancer practitioner revealed no issues regarding second opinion coverage[6], we have to consider the possibility that second opinion costs might rise.
- Coverage for lymphedema, at least coverage for treatment of lymphedema actively presenting symptoms, is provided by all payers. However, breast cancer recovery advocates have pointed out the limits of most plans in covering extended therapy and devices and supplies particularly useful in maintaining improvements. Payer surveys identified limitations in coverage for therapy visits and devices, and reported a few grievances related thereto.

Because coverage for most treatments mandated by S.B. 896 is largely in place, the incremental effect of the bill on the procedures for which insurers will pay will be limited to costs of covering second opinions and lymphedema treatment. The following two

---

[5] Interview with Mehra Golshan, MD, Director of Breast Surgical Services, Dana-Farber/Brigham and Women's Cancer Center, May 20, 2010.
[6] Interview with Mehra Golshan, MD, Director of Breast Surgical Services, Dana-Farber/Brigham and Women's Cancer Center, May 20, 2010.

sections address issues related to estimating the potential incremental costs of those provisions.

3.3. Estimating the cost of second opinion coverage

In general, insurers cover second opinions and our discussions with practitioners did not uncover anecdotal evidence of problems. However, at least one large insurer, Blue Cross Blue Shield of Massachusetts, covers second opinions only from providers within its network, and S.B. 896 would require it to change its practice. A few plans under other smaller insurers would also be affected.

Quantifying the effect of this change is difficult.

- Data for estimating the number and cost of second opinions is sketchy at best. Claim data, including the Division's all-payer claim data, do not distinguish consultations and office visits for second opinions from other consultations and visits. At best, we can assume it is safe to eliminate procedure codes for consultations for "established" patients and in settings, such as emergency rooms, unlikely to be connected to second opinions, but even then we need to isolate second opinion visits from run-of-the-mill new patient visits.
- BCBS has a large provider network including well-known cancer specialty centers in Massachusetts, and the proportion of requested second opinions that would fall outside of that network is probably small, possibly consisting of opinions obtained at specialty cancer centers in other states.
- The analysis requires an estimate of the extent to which out-of-network consultation fees would exceed in-network consultation fees. The networks of Massachusetts insurers include high-profile centers of specialists in a relatively high-priced market, suggesting that in-network rates will not be unusually low, limiting the difference.

3.4. Estimating the cost of lymphedema treatment

As noted, S.B. 896 requires coverage for treatment for physical complications of mastectomy, including lymphedema, provided in the manner determined by the attending physician and the patient to be medically appropriate. Coverage includes benefits for equipment, supplies, complex decongestive therapy (most often delivered by a physical

therapist), and self-management training. All plans provide coverage for treatment for active lymphedema, but many, if not most, policies have limitations on the number of therapy visits (20 to 24 per year) and limits on reimbursements for supplies and devices such as compression garments and pneumatic compressors and related appliances. In particular some of the garments are regarded, according to responses to the Division's survey, as durable medical equipment (DME) and subject to policy DME limits.

Lymphedema coverage in WHCRA

WHCRA requires insurers to cover treatment for lymphedema due to breast cancer treatment. However, responses to the Division's survey state that coverage for therapy and devices is limited, and confirmed by discussions with advocates and practitioners. If we interpret WHCRA's provisions as requiring full coverage for all aspects of lymphedema treatment, then arguably they are not fully enforced. However, for purposes of this analysis we will assume that commercial payers are in compliance with WHCRA, and the language allows the payers to limit the coverage as described.

S.B. 896 lymphedema language

S.B. 896 mandates coverage including "benefits for equipment, supplies, complex decongestive therapy, and outpatient self-management training and education for the treatment of lymphedema." It further provides that such coverage "may be subject to annual deductibles and coinsurance provisions as may be deemed appropriate by the division and as are consistent with those established for other benefits within a given policy."

While S.B. 896 allows lymphedema benefits to be subject to cost-sharing requirements, consistent with those for other benefits within the policy, the bill says nothing about whether procedure caps or DME limits may constrain lymphedema coverage. A narrow reading of S.B. 896 would find that the bill merely requires payers provide the listed benefits for lymphedema (which all payers do to some extent) but does not override the

constraints on therapy or DME – which apply (as does cost-sharing) to benefits for all conditions, not just lymphedema – because it does not address them explicitly. Under this interpretation, these more general policy limits would still be in effect, and the lymphedema provision of S.B. 896 would have little effect on payer costs.

However, for purposes of this analysis, we assume the authors of S.B. 896 intended to remove the procedure count and DME constraints on lymphedema benefits.

- The authors emphasized these benefits by identifying specific components of lymphedema therapy.
- They stated that coverage for lymphedema treatment must be provided "in the manner determined by the attending physician and the patient to be medically appropriate", and we assume this language reduces the insurer's ability to limit service.
- The authors did not explicitly allow DME or other general benefit limits to override the language granting treatment decision-making discretion to practitioners and providers.

Indirect savings

Several advocates for cancer recovery care have pointed out that, left untreated, patients with lymphedema are at increased risk for more dangerous conditions, notably cellulitis, that often require expensive inpatient stays. Avoiding expenses associated with treating these complications could, in theory, offset some of the cost of the bill.

Estimates of indirect costs of S.B. 896 are outside the scope of this analysis. In addition, estimating the potential savings, due to coverage mandated by S.B. 896, from preventing cellulitis and other complications would be difficult. Insurers currently provide substantial coverage for lymphedema treatment, and we have no data on how much more effective in preventing these complications the incremental coverage mandated by S.B. 896 would be, compared to the value of existing lymphedema coverage.

3.5. Cost-sharing provisions

For each set of mandated services, S.B. 896 provides that coverage may be subject to "annual deductibles and coinsurance provisions as may be deemed appropriate by the Division of Insurance" and "as are consistent with those established for other benefits within a given policy." Assuming common definitions for "deductible" (an annual amount of money patients pay for services, before any amount is paid by the insurer) and coinsurance (the percentage of provider reimbursement paid by the patient, e.g., 20 percent, typically up to a plan-year out-of-pocket dollar limit), the bill makes no mention of the third common component of patient cost-sharing: copayments (per-visit or per-procedure payments the patient makes to the provider).

In its response to the Divisions of Health Care Finance and Policy's survey, one (and only one) insurer interpreted this cost-sharing language as allowing deductibles and coinsurance for the mandated services, but forbidding copayments because they were not included explicitly in this brief list of cost-sharing components. Such an interpretation would raise the impact of this bill on premium costs.

For the purposes of this analysis we assume the bill's authors did not mean to forbid copayments for the mandated services. Legislative staff members, during an interview about this bill[7] and in response to a question about the absence of any mention of copayments, did not indicate copayments were forbidden. This was later confirmed by other staff.[8] Furthermore, we assume the authors would not explicitly allow some components of cost-sharing yet forbid the component typically associated with office visits, and perhaps most visible to the patient, without explicitly saying so.

Finally, WHCRA's language on cost-sharing is very similar to the language in S.B. 896. Therefore, insurers who have been charging copayments for these services have been presumably doing so in compliance with the federal law and could continue to do so under S.B. 896. And however S.B. 896's cost-sharing language is interpreted, it

[7] Interview with Amaru Sanchez and other legislative staff, April 7, 2010.
[8] Email from Colby Dillon, Legislative Aide to sponsor Senator Karen E. Spilka, May 28, 2010.

represents no change from the language under the existing federal mandate, and therefore will have no effect on the cost of the bill as estimated by this analysis.

3.6. Time-dependent factors

This analysis provides an estimate of the cost of this mandate for five years, 2011 to 2015. Our analysis will account for:

- Membership trends
- Cost inflation: We assume an annual per-service cost increase of three percent, measured from 2008 and raising the value for 2011 and on.[9]

Because the coverage mandated by S.B. 896 generally consists of enhancements to coverage already in place and is not related to new procedures or provider relationships, if the bill is enacted we expect little lag between enactment and when the benefits begin to affect insurer reimbursement.

4. METHODOLOGY

4.1. Analysis steps

Compass estimated the impact of S.B. 896 with the following steps:

- Estimate the populations covered by the mandate; i.e., identify the types of policies affected and estimate the number of covered individuals
- Measure past use and insurers' expenditures for second opinions and lymphedema treatment
- Estimate (ranges for) the additional cost for second opinions if the bill passes
- Estimate (ranges for) the additional cost for lymphedema treatment if the bill passes
- Estimate changes in per member cost over the next 5 years
- Estimate the impact on premiums by accounting for insurers' retention

---

[9] Roughly the 3.5 percent trend reported for HMO's in www.mass.gov/Ihqcc/.../2009_04_01_Trends_for_Fully-Insured_HMOs.doc and http://www.mass.gov/Eoca/docs/doi/Consumer/MAHMOTrendReport.pdf

4.2. Data sources

The primary data sources used in the analysis were:

- Interviews with legislative and Division staff
- Interviews with providers and treatment advocates
- Responses to a survey presented by the Division to insurers regarding existing coverage for mandated services
- Government reports and data and academic literature, cited as appropriate
- Claims: The Division provided Massachusetts data from its all-payer claim database for claims containing procedures related to second opinions and lymphedema treatment and diagnoses related to breast cancer or lymphedema for most private plans
- Membership data: The Division provided membership data for the plans represented in the all-payer claim data. We also used other studies prepared for the Division, supplemented with U.S. Census data

The step-by-step description of the estimation process below addresses limitations in some of these sources.

5. Analysis

5.1. Insured population affected by the mandate

Table 2 shows the number of people potentially affected by the mandate. Self-insured populations not subject to the mandate are included only for reference. Estimates of the impact of the bill are derived below by applying the fully insured population membership numbers to estimated PMPM values derived in part from the Division's claim database.[10]

[10] The Division's membership data, representing most of the plans contributing to its all-payer claim database, contains approximately 2.9 million, of which 1.7 million are fully-insured and 1.2 million self-insured. Non-residents who work in Massachusetts and are insured by policies issued in Massachusetts are not included in the Division's count. They may, however, be present in some of the membership numbers gathered from insurance data, and so the member counts in the analysis may include insured non-residents. S.B. 896 effectively applies to insurance regulated by (issued in) Massachusetts, and Massachusetts residents who commute to other states and are insured in those states are generally not included in insurance roles. As a cross-reference, according to the Kaiser Family Foundation, approximately 4.1

Table 2: Projected Membership

	2011	2012	2013	2014	2015
Fully Insured	2,402,000	2,399,000	2,398,000	2,396,000	2,395,000
Self Insured GIC	205,000	205,000	205,000	205,000	205,000
Other Self Insured	1,971,000	1,969,000	1,967,000	1,966,000	1,965,000
Commercial Total	4,578,000	4,573,000	4,570,000	4,567,000	4,565,000

5.2. Current claim costs for second opinions and lymphedema treatment

Using carrier claim data, provided by the Division, we estimated the amount paid per member for 2008 claims for second opinions and lymphedema treatment. Because treatments for lymphedema can involve physical therapy, which carries the same procedure code whether it is performed for lymphedema or other conditions, we limited the claim records to those carrying a diagnosis of breast cancer or lymphedema. Therefore, the claim data we examined will not include claims for therapy for lymphedema with no, or incorrect, diagnoses; the data might understate payments for genuine lymphedema treatment.

Likewise, consultations and office visits are very common, and again we relied on a diagnosis code showing breast cancer or lymphedema to limit the claims. Furthermore, we omitted procedure codes for evaluations associated with specific routine processing, such as emergency room admittance, and most significantly, for established patients.

---

million Massachusetts residents were covered under non-government health plans in '07-'08. Kaiser Family Foundation, "Massachusetts: Health Insurance Coverage of the Total Population, states (2007-2008)", accessed 1/26/10, <http://www.statehealthfacts.org/profileind.jsp?ind=125&cat=3&rgn=23>. Note the Kaiser Foundation counts might include residents insured in other states.

Table 3: 2008 Cost of Lymphedema Treatment and Second Opinions per Member per Month

	---------- Lymphedema ----------		- 2nd Opnion -
	Therapy	Devices	Evaluation
Fully Insured	$ 0.006	$ 0.006	$ 0.109
Self Insured (GIC proxy)	$ 0.012	$ 0.015	$ 0.136

Table 3 provides a brief summary of 2008 dollars paid, per-member-per-month. Reimbursements for these procedures, as recorded in the Division's claim data, are relatively low on a PMPM basis. As noted, self-insured plans are, in general, not subject to S.B. 896; however we will use the PMPM costs for self-insured plans to estimate part of the effect of the bill on GIC plans since the Division's claim data does not allow us to isolate the GIC population directly. The table displays costs to the tenth of a cent to illustrate the overall low cost, and the difference between fully-insured and self-insured plans, which often have richer benefits.

5.3. Changes in second opinion costs due to S.B. 896

S.B. 896 requires insurers to cover second opinions, including those from out-of-network providers. Most insurers cover second opinions, but rates for out-of-network opinions could be higher. Using the same procedure codes, roughly identified as procedures that might include second opinions, which we used to create Table 3, we found the billed amounts to be some 60% higher than allowed amounts. Taking this as the high end of the range we assume charges will be 20 to 60 percent higher. We will assume this is a rough proxy for the additional cost of an out-of network consultation.

As noted in Section 3, estimating actual expenses for second opinions regarding breast cancer treatment is difficult because of the need for accurate diagnoses and the lack of evaluation procedure codes that distinguish first and subsequent opinions.

We will make a set of assumptions, that might overstate costs somewhat, but which meet our need to be conservative:

- 10 to 40 percent of the reimbursement, measured for codes that might reflect second opinions, is for second opinion consultations.
- As noted above, costs for out-of-network consultations would be 20 to 60 percent higher than in-network charges.
- 65 percent of the insured population (BCBS's share of 2008 fully-insured membership, plus a portion of other plans) is covered by plans where the fee differential might come into play. Whether the rates at which all the remaining plans pay for second opinions meet the usual and customary standard (as required by the mandate) is not clear from the Division's survey data, but at least some do. Given the uncertainty, we assume these remaining plans do not contribute to the cost.

The cost of the mandate to cover second opinions from out-of-network providers has two components:

- Some out-of-network second opinions are currently paid out-of-pocket or skipped entirely. With improved coverage, we assume the number of second opinions for which affected insurers would pay will increase by 20 percent (and be paid at the higher rates).
- Insurers currently pay for some second opinions for which the patient might prefer to go out-of-network and for which the insurer will have to pay a higher rate. We assume a (conservatively large) 50 percent of the current second opinion consultations would use out-of-network resources, at the higher rates.

The calculations yield the rough estimate of the incremental PMPM cost of the second opinion provisions shown in Table 4.

Table 4: Second Opinion Contribution to Mandate Cost per Member per Month (2008 dollars)

	Low	Mid	High
Fully Insured	$ 0.002	$ 0.008	$ 0.018
Self Insured (GIC proxy)	$ 0.003	$ 0.011	$ 0.022

5.4. Changes in lymphedema treatment costs due to S.B. 896

As noted, commercial insurers generally cover treatment for lymphedema, and we found no evidence that they do not cover medical treatment for lymphedema actively exhibiting symptoms. However, anecdotal evidence was presented that some patients covered under fully-insured commercial plans encountered limits in coverage for the physical therapy and supplies/equipment needed for sustained, "maintenance" treatment of lymphedema. Therefore any cost attributable to the proposed bill's mandate for coverage of lymphedema treatment will arise from patients who are currently encountering caps on coverage and who would use more services/devices if the caps are removed.

The per-member-per-month costs for therapy and devices measured from the Division's claim data (shown in Table 3) are lower than the amount even modest use of the benefit should generate. The following hypothetical example illustrates modest use.

- The Massachusetts incidence rate for breast cancer is 132 per 100 thousand.[11]
- Assume 80 percent of breast cancer patients have surgery that increases the risk of lymphedema. Estimates of the portion of breast cancer surgery patients who develop lymphedema range from 15 to 50 percent. For this example, assume 20 percent.
- Assume the average patient uses only 5 therapy sessions per year, well below the typical policy cap, at $120 per session.
- Assume the patient purchases two sets of bandages at $100 per set, and not more expensive night garments or other devices.

In this example the per patient cost is $800 per year, the cost per 100 thousand members is $17,000 (132 times 80% times 20% times $800), translating to a PMPM of $0.014 or roughly the sum of the therapy and device PMPMs measured in the Division's data for fully-insured plans shown in Table 3. (Values in Table 3 for self-insured plans are greater.) Furthermore the above example only covers lymphedema due to new cases of breast cancer. Some treatments continue well over a year.

[11] American Cancer Society, "Cancer Facts and Figures 2010", <http://www.cancer.org/downloads/STT/Cancer_Facts_and_Figures_2010.pdf>.

As noted, we must allow that the Division's claim data might undercount somewhat services, particularly physical therapy, for lymphedema, because a correct diagnosis is required for us to identify them. Nonetheless, the order of magnitude of the resulting PMPM in the hypothetical, suggests actual usage of the benefit is relatively low – i.e., few users test the limits – and suggests removing the limits will have at most a modest effect.

To estimate the effect of removing limits on therapy and DME, we extended the hypothetical, assuming a distribution of lymphedema severity and treatment costs based on data from providers,[12] and varying those assumptions to obtain a range of estimates. The model's assumptions, particularly about the severity distribution, were conservatively high. The net effect of removing the limits is shown in Table 5. Appendix A shows the model.[13]

Table 5: Net Effect of Changes in Lymphedema Treatment Cost per Member per Month

	Low	Mid	High
Net change in PMPM	$ 0.006	$ 0.028	$ 0.073

We assume the same PMPM increases for fully- and self-insured plans.

[12] Interview with Nancy Roberge, DPT, Director, Chestnut Hill Physical Therapy Associates, May 28, 2010. Email from Nancy Roberge, June 10, 2010. Interview with Roya Ghazinouri, DPT, MS, Inpatient Clinical Supervisor, Department of Rehabilitation Services, Brigham and Women's Hospital, May 28, 2010.

[13] For an additional perspective on an earlier bill mandating coverage for lymphedema, see the July 2004 report of the Massachusetts Division of Health Care Finance and Policy on S.B. 848/H.B. 1309: "An Act Providing Coverage for Lymphedema Treatments". That study identified costs affecting fully-insured plans arising from the proposed mandate to cover massage therapy, a previously uncovered service. The analysis did not estimate costs due to the removal of limits on physical therapy and supplies/equipment, arguing that the average use of the benefits, without the mandate, was so low that very few patients would use many more units of service once the mandate removed the limits, and that the resulting costs would be very small compared with other costs of the bill. See the Publications section of the Division's website for how to obtain archived reports. <http://www.mass.gov/?pageID=eohhs2agencylanding&L=4&L0=Home&L1=Government&L2=Departments+and+Divisions&L3=Division+of+Health+Care+Finance+%26+Policy&sid=Eeohhs2>.

5.5. Increase in covered costs to be paid by health insurers

Applying the estimated increase in per-member per-month costs, combining Tables 4 and 5, to the projected annual insured membership for the next five years yields the range of estimates in Tables 5A for fully-insured plans. The table reflects changes in projected membership and an assumption of three percent per year[14] for inflation in service cost (over the 2008 base year).

Table 5A: Estimated Cost of Mandated Services – Fully-insured Plans

	-2011 -	-2012 -	-2013 -	-2014 -	-2015 -	- Total -
Members (K)	2,402	2,399	2,398	2,396	2,395	
Low estimate ($K)	$ 270	$ 278	$ 286	$ 294	$ 303	$ 1,430
Mid estimate ($K)	1,163	1,196	1,231	1,267	1,305	6,162
High estimate ($K)	2,860	2,942	3,029	3,118	3,210	15,159

Applying the PMPM changes to the fully- and self-insured membership components of the GIC plans, we derive a similar set of values, shown below in Table 5B. Note the small GIC fully-insured membership is also included in the general fully-insured results.

Table 5B: Estimated Cost of Mandated Services – GIC Plans

	-2011 -	-2012 -	-2013 -	-2014 -	-2015 -	- Total -
Members (K)	231	231	231	230	230	
Low estimate ($K)	$ 28	$ 28	$ 29	$ 30	$ 31	$ 146
Mid estimate ($K)	117	121	125	128	132	622
High estimate ($K)	287	295	304	312	321	1,520

5.6. Effect of the mandate on health insurance premiums

To convert medical cost estimates to premiums, we added insurer retention (i.e., the portion of premiums that represent administrative costs and profit for bearing risk on covered members). Using historical data, we estimated a retention ratio of approximately

[14] Roughly the 3.5 percent trend reported for HMO's in <www.mass.gov/Ihqcc/.../2009_04_01_Trends_for_Fully-Insured_HMOs.doc> and <http://www.mass.gov/Eoca/docs/doi/Consumer/MAHMOTrendReport.pdf>.

12 percent. Table 6 displays the resulting net effect on premiums for fully-insured plans (including the small fully-insured GIC membership), showing the net increase measured on a per-member per-month (PMPM) basis and as a percentage of estimated premiums.

Table 6: Estimated Incremental Impact of S.B. 896 on Fully-Insured Plan Premiums

	-2011 -	-2012 -	-2013 -	-2014 -	-2015 -	- Mean -
Members (K)	2,402	2,399	2,398	2,396	2,395	
Med Exp Low ($K)	$ 270	$ 278	$ 286	$ 294	$ 303	$ 286
Med Exp Mid ($K)	1,163	1,196	1,231	1,267	1,305	1,232
Med Exp High ($K)	2,860	2,942	3,029	3,118	3,210	3,032
Premium Low ($K)	$ 307	$ 315	$ 325	$ 334	$ 344	$ 325
Premium Mid ($K)	1,321	1,359	1,399	1,440	1,483	1,401
Premium High ($K)	3,250	3,343	3,442	3,543	3,647	3,445
Low PMPM	$ 0.01	$ 0.01	$ 0.01	$ 0.01	$ 0.01	$ 0.01
Mid PMPM	0.05	0.05	0.05	0.05	0.05	0.05
High PMPM	0.11	0.12	0.12	0.12	0.13	0.12
Est Mo. Premium	$ 442	$ 468	$ 496	$ 526	$ 558	$ 498
Premium % Rise Low	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Premium % Rise Mid	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Premium % Rise High	0.03%	0.02%	0.02%	0.02%	0.02%	0.02%

CONCLUSION

For fully-insured plans, the estimated mean PMPM cost of the mandate provision of S.B. 896 over five years is $0.01 in the low scenario to $0.12 in the high scenario. We estimate that S.B. 896 would increase premiums by up to 0.02 percent on average over the five-year period. Analysis of the cost-effectiveness of the mandated treatment is beyond the scope of this analysis, but to the extent that treatment prevents additional medical expense down the road, this cost increase would be balanced by benefits in preventing that expense.

Because S.B. 896 addresses procedures already largely covered by insurers, the effect of the bill is limited, especially compared to the large amount of money spent on breast cancer treatment in general.

APPENDICES

Appendix A: Estimating the Costs of Lymphedema Treatment in Excess of Current Limits

Appendix A: Estimating the Costs of Lymphedema Treatment in Excess of Current Limits[15]

Low Range Assumptions	
Mass breast cancer incidence/100K	132
Surgery rate	80%
PT annual visit limit	26
PT cost per session	$ 100
DME limit	$ 1,500
Cost per bandage set	$ 100

Severity	**None**	**Mild**	**Moderate**	**Severe**	**Total**
Severity distribution	75%	10%	10%	5%	100%
Lymphedema patients/100K	79	11	11	5	106
Costs without limits					
PT sessions per year	-	5	20	40	
Sets of bandages	-	2	3	6	
Cost of other devices	$ -	$ -	$ 200	$ 400	
Equipment, after limit	$ -	$ 200	$ 500	$ 1,000	
Total per patient	$ -	$ 700	$ 2,500	$ 5,000	
Total/100K	$ -	$ 7,392	$ 26,400	$ 26,400	$ 60,192
PMPM					$ 0.05
Costs with limits					
PT sessions after limit	-	5	20	26	
Equipment, after limit	$ -	$ 200	$ 500	$ 1,000	
Total per patient	$ -	$ 700	$ 2,500	$ 3,600	
Total/100K	$ -	$ 7,392	$ 26,400	$ 19,008	$ 52,800
PMPM					$ 0.04
PMPM Difference					$ 0.01

[15] Incidence from the American Cancer Society. Benefit elements from insurer surveys. Rough estimates of severity distribution, treatment needs/frequencies, and rates

Mid-Range Assumptions	
Mass breast cancer incidence/100K	132
Surgery rate	80%
PT annual visit limit	26
PT cost per session	$ 120
DME limit	$ 750
Cost per bandage set	$ 100

Severity	None	Mild	Moderate	Severe	Total
Severity distribution	65%	15%	10%	10%	100%
Lymphedema patients/100K	69	16	11	11	106
Costs without limits					
PT sessions per year	-	5	20	50	
Sets of bandages	-	2	3	6	
Cost of other devices	$ -	$ -	$ 200	$ 500	
Equipment, after limit	$ -	$ 200	$ 500	$ 1,100	
Total per patient	$ -	$ 800	$ 2,900	$ 7,100	
Total/100K	$ -	$ 12,672	$ 30,624	$ 74,976	$ 118,272
PMPM					$ 0.10
Costs with limits					
PT sessions after limit	-	5	20	26	
Equipment, after limit	$ -	$ 200	$ 500	$ 750	
Total per patient	$ -	$ 800	$ 2,900	$ 3,870	
Total/100K	$ -	$ 12,672	$ 30,624	$ 40,867	$ 84,163
PMPM					$ 0.07
PMPM Difference					$ 0.03

Upper Range Assumptions

Mass breast cancer incidence/100K	132
Surgery rate	80%
PT annual visit limit	26
PT cost per session	$ 150
DME limit	$ 750
Cost per bandage set	$ 100

Severity	**None**	**Mild**	**Moderate**	**Severe**	**Total**
Severity distribution	55%	15%	15%	15%	100%
Lymphedema patients/100K	58	16	16	16	106
Costs without limits					
PT sessions per year	-	5	25	60	
Sets of bandages	-	2	4	6	
Cost of other devices	$ -	$ -	$ 300	$ 600	
Equipment, after limit	$ -	$ 200	$ 700	$ 1,200	
Total per patient	$ -	$ 950	$ 4,450	$ 10,200	
Total/100K	$ -	$ 15,048	$ 70,488	$ 161,568	$ 247,104
PMPM					$ 0.21
Costs with limits					
PT sessions after limit	-	5	25	26	
Equipment, after limit	$ -	$ 200	$ 700	$ 750	
Total per patient	$ -	$ 950	$ 4,450	$ 4,650	
Total/100K	$ -	$ 15,048	$ 70,488	$ 73,656	$ 159,192
PMPM					$ 0.13
PMPM Difference					$ 0.07

Blank page