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February 4, 2004

The Honorable Richard T. Moore
Commonwealth of Massachusetts
Massachusetts Senate
State House, Room 312D
Boston, MA 02133-1053

Dear Chairman Moore:

As requested, enclosed is the Division of Health Care Finance and Policy's review and evaluation of proposed legislation, SB 623 *An Act to Provide Senior Citizen Hearing Tests.* The analysis was completed with information from some Massachusetts organizations and insurers, in addition to contracted actuarial services from The Lewin Group.

Please do not hesitate to contact me at 617-988-3158, if you have any questions. We hope this information is helpful to your Committee.

Sincerely,

Amy M. Lischko

Enclosure

Commonwealth of Massachusetts
Mandated Benefit Review

Review and Evaluation of Proposed Legislation Entitled: "An Act to Provide Senior Citizen Hearing Tests" Senate Bill No. 623

Provided for:

The Joint Committee on Health Care

Division of Health Care Finance and Policy
Commonwealth of Massachusetts
February 3, 2004

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According to M.G.L. c. 3, s. 38c: "Joint committees of the General Court and the House and Senate Committees on Ways and Means when reporting favorably on mandated health benefits bills referred to them shall include a review and evaluation conducted by the Division of Health Care Finance and Policy pursuant to this section. The Division shall report to the committee within 90 days of the request. If the Division fails to report to the appropriate committee within 45 days, said committee may report favorably on the mandated health benefit bill without including a review and evaluation from the Division."

INTRODUCTION

On November 3, 2003, the Joint Committee on Health Care referred proposed Senate Bill 623, named "*An Act to Provide Senior Citizen Hearing Tests,"* to the Division of Health Care Finance and Policy for a review and evaluation. The bill's lead sponsor is Senator Richard T. Moore, Chair of the Committee on Health Care.

OVERVIEW OF PROPOSED LEGISLATION [i]

Proposed Senate bill 623 would require "all health insurers" except supplemental policies only providing coverage for specific diseases, Medicare supplement, hospital indemnity or other supplemental policies to cover the cost for one "hearing screening test" per year, upon request, for all enrollees who are Massachusetts residents and are over the age of 60. The legislation specifies that the test may be performed by a hospital, community health center or licensed audiologist. The legislation is unclear regarding the specific type of hearing screening test to be covered; therefore, since many types of hearing tests exist, this analysis focuses on a very basic screening test, "pure tone, air only."

Further, the bill states that "in the absence of a third party payer, the charges for the senior citizen hearing screening test shall be borne by the Commonwealth." It is unclear how the Commonwealth would pay for these screening tests because the Uncompensated Care Pool, which pays for free health care, is primarily funded by insurers and hospitals. The actuarial analysis of the cost impact of this mandate estimates premium increases as well as a total dollar figure of the cost for the Commonwealth to provide this benefit to the uninsured.

EXECUTIVE SUMMARY

Studies have shown that hearing loss in older adults is often under-diagnosed and under-treated and that internists rarely perform hearing screening examinations even on patients age 65 and older, although screening may find hearing problems at an early stage. Early detection and treatment could help the patient avoid a decline in quality of life and/or the onset of depression due to hearing problems. The first clinical trial to study long-term outcomes after routine screening for hearing impairment in older adults is ongoing.

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[i] Proposed Senate bill 623 adds a new section 67H to M.G.L. c. 111 to require "all health insurers" to cover senior citizen hearing screening tests. The reason for placing this section in M.G.L. c. 111, Public Health, is unclear. It is also not clear whether this section will apply to Medicaid. For the purpose of this analysis, the Division of Health Care Finance and Policy included Medicaid enrollees.

Most Massachusetts insurers who responded to the Division's survey already cover hearing screening exams for all ages, usually only when requested by the patient or as "medically necessary." (A couple insurers do cover the exams as part of routine office visits.) The National Conference of State Legislatures is not aware of any state mandating insurance coverage for annual hearing screening examinations for adults.

Massachusetts insurers reported the cost of a basic hearing screening test to be between $10 and $60 per examination. The Lewin Group, the Division's contracted actuary for this work, estimated that the annual cost for benefits newly provided as a result of the mandate per person age 60 and older are approximately $1.76 or $.15 monthly. If this cost is spread out among all insured persons of all ages, the average cost estimate for the newly provided benefit would be approximately $.08 annually (ranging from $.04 to $.11 depending on utilization assumptions). In other words, the premium cost increase due to the proposed mandate for all insured persons is between .002% and .004% and when only applied to persons age 60 and over is between .01% and .04%. In addition, an indirect cost stemming from this mandate might be that more people are diagnosed with hearing loss and need subsequent testing or treatment.

The Lewin Group also calculated estimates of the cost to the state of covering hearing screening tests for the uninsured. However, the proposed legislation does not specify which state fund would pay for the screening tests for uninsured residents. The low-cost estimate to the state of covering uninsured seniors age 60 and older for basic hearing screening exams in 2005 is $101,024, medium estimate is $175,590, and high-cost estimate is $229,108 (depending on utilization assumptions). By 2008, the projected annual cost estimate will be somewhere between $129,251 and $293,123 per year.

BACKGROUND OF ISSUE

"Hearing loss is the third most prevalent chronic condition in older Americans, after hypertension and arthritis; between 25% and 40% of the population aged 65 years or older is hearing impaired. The prevalence rises with age, ranging from 40-66% in patients older than 75 years and more than 80% in patients older than 85 years."[1] The National Institute on Deafness and Other Communication Disorders reports that "one in three people older than 60 and half of those older than 85 have hearing loss."[2] Hearing loss can also occur in younger people; it is estimated that approximately "half of the 28 million Americans with hearing problems are under the age of 50."[3] Studies have found that there is a resulting loss in quality of life (depression, social isolation and low self-esteem) due to hearing loss.[4] Hearing loss may happen for many reasons including aging, family history, exposure to loud noises/work history, effect of medications, a virus or bacteria, heart conditions or stroke, head injuries or tumors. Someone suspected of having hearing loss might be referred to an otolaryngologist, a doctor specializing in the ear, nose and throat, and/or an audiologist who can measure the person's hearing.

Hearing screening tests routinely are performed on newborn children (Massachusetts requires insurers to cover newborn hearing screening tests) because early detection of hearing loss and early intervention is essential for a child's development of language and communication skills. Studies have found that hearing loss in older adults is both under-diagnosed and under-treated. Approximately 9% of internists offer hearing testing to patients 65 and older and 25% of patients

with aidable hearing loss receive hearing aids.[5,6] Even though clinical trials determining the value of routine screening for hearing loss have not been completed (one trial is now under way), four professional organizations recommend periodic screening of older adults (see Table 1). Routine screening (without complaint of hearing trouble) may be helpful to older adults because patients may not realize they have a problem if it developed gradually and physicians may overlook it in a quiet exam room (the patient might not have trouble hearing there).

Table 1: Summary of Recommendations from Professional Organizations for Screening for Hearing Loss

Professional Organization	Population	Frequency of Screening	Question Patient about Hearing	Otoscopic Examination and Audiometric Testing	Audioscope Testing
US Preventive Services Task Force	Older adults	Periodically	Recommended	Recommended for patients with evidence of impaired hearing	Discussed, but no recommendation for or against
Canadian Task Force on Preventive Health Care	Elderly adults	During periodic health examination	Recommended	Not discussed	Recommended
American Academy of Family Physicians	Adults greater than 60 years of age	During periodic health examination	Recommended	Not discussed	Not discussed
American Speech-Language- Hearing Association	Adults greater than 50 years of age	Every 3 years	Recommended	Recommended	Not discussed

Source: Journal of the American Medical Association, "Screening and Management of Adult Hearing Loss in Primary Care," Table 1 page 1979, volume 289 No. 15, April 16, 2003.

ORGANIZATIONS THAT SUBMITTED INFORMATION TO DHCFP

The following organizations, associations and insurers submitted information to the DHCFP to be considered for this analysis: Massachusetts Association of Health Plans, Medicaid plans (Primary Care Clinician (PCC) Plan and Boston Medical Center Health Net Plan (BMCHP)), Blue Cross and Blue Shield (BCBS), Tufts Health Plan, Fallon Community Health Plan, Aetna, and Network Health.

DEFINITIONS

Hearing screening test, pure tone, air only: This test is a standard audiometric study that utilizes tones of various frequencies and intensities as auditory stimuli to measure hearing. As air conduction is the usual method of sound transmission, air audiometry utilizes the external and middle ear in the transmission of sound to the cochlea and beyond.

CURRENT COVERAGE LEVELS

Proposed Senate bill 623, if enacted as a state law, would be preempted by the federal Employee Retirement Income Security Act (ERISA) which precludes state laws from applying to self-insured benefit plans and their members. The 2001 Massachusetts Employer Health Insurance Survey found that approximately 26.7% of Massachusetts employees enrolled in employer-sponsored health plans are covered by ones that are self-funded, while a national survey finds that 56.6% were covered by self-funded plans. The Division's analysis uses the state's findings of 26.7%. Many Massachusetts insurers already cover hearing screening exams for older adults when it is determined to be "medically necessary" or upon complaint of an enrollee. (A couple insurers do cover it during routine office visits).

Coverage for Hearing Screening for Individuals Age 60 and older

The list below shows current coverage policies concerning hearing screening for some Massachusetts insurers. The following plans/insurers responded to the Division's survey about coverage and cost of hearing screening tests: Medicaid plans (Primary Care Clinician (PCC) Plan and Boston Medical Center Health Net Plan (BMCHP)), Blue Cross and Blue Shield (BCBS), Tufts Health Plan, Fallon Community Health Plan, Aetna, and Network Health. Note: Fully-insured managed care plans offered by the Group Insurance Commission (for state employees, retirees and dependents) are subject to state mandate laws. GIC's self-funded plans would not have to abide by this mandate.

Table 2: Coverage for and Cost of Hearing Screening for Those Age 60 and Older

Insurer	Hearing Screening Coverage
DMA PCC Plan	Cover as a standard benefit; no limitation regarding number of times screened; all age groups; tests must only be performed by audiologists, physicians, CHCs, speech and hearing clinics, rehab clinics, outpatient hospitals
DMA BMCHP	Cover as a standard benefit; may be screened annually with the first test not requiring authorization, subsequent tests must be ordered by physician and be based on medically necessary criteria; all age groups; tests must be performed by in-network audiologist
BCBS	HMO/PPO Plans: Cover as a standard benefit for all ages when requested; PPO plans include coverage for an annual hearing screening exam but accounts with over 50 lives can exclude routine coverage Indemnity: Not standard benefit but can add coverage for hearing screening Guarantee issue non-group: Cover routine screening every 2 years
Tufts Health Plan	Cover as a standard benefit but only when medically necessary for all ages/members (no time frame listed for frequency of tests); must be performed by a health care professional or facility licensed in accordance w/state law and includes licensed audiologists as covered providers
Fallon Community Health Plan	Cover as a standard benefit; all age groups; as often as necessary; provided during routine visits by a PCP
Aetna Health Inc./ Aetna Life Ins.	Cover as a standard benefit; all age groups; as often as medically necessary but only by a physician order; may be required to use in-network providers depending on the plan
Network Health (Cambridge HMO)	Cover as a standard benefit; all age groups; screening once per year

COST OF HEARING SCREENING

Some insurers covering Massachusetts residents provided cost information for hearing screening; however, the reported cost of the screening varied between plans. This cost variation may be due to plans pricing slightly different screening exams (since a particular exam was not specified.)

Hearing screening test: Reported costs ranged from $10 to $60 per screening test (not including the office visit).

MEDICAL EFFICACY

The Division of Health Care Finance and Policy is charged with reporting: 1) the expected impact of the benefit on the quality of patient care and the health status of the population, and 2) the results of any research demonstrating the medical efficacy of the treatment or service compared to alternative treatments or services or not providing the treatment or service.

Studies have found that hearing screening performed on a somewhat routine basis can be beneficial because in many cases a loss of hearing happens gradually without the individual realizing its severity. However, clinical trials to determine the medical efficacy of routine hearing screening of adults are still underway; therefore, no definitive conclusion on their medical usefulness exists. A few professional organizations still recommend periodic screening for older adults due to the importance of finding out about hearing problems early before quality of life is negatively affected. Ongoing studies on the medical efficacy of hearing screening are explained in greater detail in the background section of this report on pages 4-5.

FINANCIAL IMPACT OF MANDATE

The Lewin Group performed an actuarial analysis to determine whether health insurance premiums would increase due to this proposed mandate. In addition to analyzing premium increases, the analysis projects cost to the state for uninsured people age 60 or older; however, the bill does not specify which state agency or fund would pay for these tests. Please refer to Appendix I for The Lewin Group's entire report.

DHCFP is required by Section 3 of Chapter 300 of the Acts of 2002 to answer the following questions:

1. *The extent to which the proposed insurance coverage would increase or decrease the cost of the treatment or service over the next 5 years.*

   The cost of health care services continues to increase annually, therefore the cost for a hearing screening examination will likely increase over time. However, it is unclear whether Senate bill 623 will directly increase or decrease the cost of basic hearing screening examinations immediately.

Since many insurers already provide coverage for this benefit, the major uncertainty is whether this mandate will increase utilization (thereby increasing premiums). This would depend on whether providers actually start to perform hearing screenings on a more regular basis. If more people age 60 and older are screened for hearing loss, requiring more time from physicians and audiologists, the cost of the visit might increase due to greater demand; however since most insurers already provide the screening service when medically necessary it likely would not increase greatly.

2. *The extent to which the proposed coverage might increase the appropriate or inappropriate use of the treatment or service over the next 5 years.*

   Studies have found that early detection of hearing loss might help a patient avoid social isolation or depression, which are sometimes associated with hearing loss. Current data show that only approximately 9% of internists offer hearing screening to patients age 65 and older during a routine office visit.[7] Therefore, if this proposed legislation or other factors change physician behavior, causing them to screen more frequently, it might have an impact on the number of screenings performed and the appropriate use of screening. If seniors are screened periodically, they could get treatment for hearing loss earlier, possibly without experiencing a loss in quality of life.

3. *The 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.*

   Proposed Senate bill 623 would allow a physician in a hospital or community health center to perform the hearing screening test, probably during a routine exam; therefore, this proposed legislation would not require additional providers to supply the initial screening exam. There is a possibility that if more people are screened for hearing difficulty, more people would be found to have a problem and referred to an audiologist. Thus, more audiologists could be needed to perform more advanced follow-up hearing examinations.

4. *The extent to which the mandated treatment or service might serve as an alternative for more expensive or less expensive treatments or services.*

   Proposed Senate bill 623 would require coverage for a very basic hearing screening examination; therefore, it would not serve as an alternative for any less expensive service. It also would not replace more expensive hearing tests if a problem is found during screening. However, performing hearing screening tests on more people might lead to a greater demand for hearing aids, which could increase the cost of premiums indirectly if hearing aids are covered. If hearing aids are not covered, there would be an increase in out-of-pocket cost to the patient if they wanted to get a hearing aid.

5. *The effects of the mandated benefit on the cost of health care, particularly the premium, administrative expenses and indirect costs of large and small employers, employees and non-group purchasers.*

   Most insurers cover hearing screening when the patient complains of hearing difficulty; therefore Senate bill 623 would only increase the cost of premiums if all primary care

physicians immediately begin screening all seniors annually for hearing difficulties (increasing the number of hearing screening examinations performed.)

The Lewin Group calculated cost estimates of this mandate on premiums for the insured and a total cost to the state of covering this benefit for the uninsured. If the cost of this benefit is only spread out among those people age 60 and older (insurers are permitted to set premiums based on age for certain policies sold in Massachusetts) the premium increase would be greater than if the cost were spread among all enrollees of all ages. Please see Appendix I for their full analysis. Following is a brief summary of their results:

- Premium Cost Estimate of Hearing Screening Mandate: The Lewin Group's actuarial analysis used an annual utilization of 292 per 1000 as a medium estimate and a cost of $18.73 per hearing test and calculated that the total medium cost estimate for this benefit for the insured would be $5.47 annually per person age 60 and older (ranging from a low-cost estimate of $3.15 to a high-cost estimate of $7.14); however, using data submitted by Massachusetts insurers they also assumed that 67.8% of the total cost is already incurred by insurers (already covered) so the cost for benefits newly provided as a result of the mandate annually per person age 60 and older is approximately $1.76 or $.15 monthly. If this cost is distributed across all insured persons of all ages, the medium cost estimate for the newly provided benefit would be approximately $.08 annually (ranging from $.04 to $.11). In other words, the premium cost increase due to the proposed mandate for all insured persons is between .002% and .004% and when only applied to people age 60 and over is between .01% and .04%.

- Projected Cost of Providing Hearing Screening to Uninsured Seniors: The Lewin Group performed a second analysis to determine the projected cost of providing hearing screening to uninsured seniors annually through 2008. The low-cost estimate to the state of covering uninsured seniors age 60 and older for basic hearing screening exams in 2005 is $101,024, medium estimate is $175,590, and high-cost estimate is $229,108. In 2006, the projected annual cost estimate would be between $109,672 and $248,720 and by 2008 the projected annual cost estimate would be between $129,251 and $293,123 per year.

Premiums would increase even more if this legislation led to more seniors getting more extensive and expensive hearing exams and subsequently needing hearing aids (if the insurance plan covers these items). However, since hearing loss is often under-diagnosed and under-treated, an increase in the use of hearing aids or other hearing devices by people who need them would be a positive quality of life effect of this proposed legislation. If insurers do not cover hearing aids and more detailed exams, more seniors will be aware of a hearing problem due to increased screening and they would either have to pay out-of-pocket or go without the more extensive testing and/or treatment.

6. *The potential benefits and savings to large and small employers, employees and non-group purchasers.*

Increased hearing screening could benefit seniors (whether they are employees or non-group purchasers) because hearing loss would more often be detected earlier, avoiding a loss in

quality of life. Early detection and treatment of hearing loss could benefit employers because presumably employees who hear well could be more productive.

7. *The effect of the proposed mandate on cost-shifting between private and public payers of health care coverage.*

   If proposed Senate bill 623 applies to Medicaid (if Medicaid is included in the statement "all health insurers") then this bill will not shift costs between private and public payers because it would apply to both private and public insurers. Even if the proposed mandate does not apply to Medicaid, cost shifting is unlikely due to this one factor.

8. *The cost to health care consumers of not mandating the benefit in terms of out-of-pocket costs for treatment or delayed treatment.*

   Most insurers cover hearing loss testing when "medically necessary" or upon the complaint of a patient; therefore, they likely would not be charged for a basic hearing screening exam anyway. However, some patients may be experiencing hearing loss without realizing the problem exists so they might not ask for a hearing test.

   Proposed Senate bill 623 would not require coverage for <u>treatment</u> of hearing loss (neither detailed examinations nor hearing aids), so there would not be an out-of-pocket cost for treatment or delayed treatment associated with rejecting this mandate. If the mandate is enacted and more people are diagnosed with hearing loss, they would require detailed examinations and/or hearing aids which could lead to a greater out-of-pocket cost to consumers if those benefits are not covered.

   An intangible cost of not being screened for hearing loss is that delayed knowledge of hearing trouble could cause depression or social withdrawal since hearing loss has been found to have an effect on emotional, social and mental well-being.[8]

9. *The effects on the overall cost of the health care delivery system in the Commonwealth.*

   The state must budget for the cost of covering hearing screening exams for the uninsured (see the answer to question 5) which would directly increase the state's portion of the cost of the health care delivery system. In addition, depending on how the cost of the mandate is spread out over premiums (just added to premiums for those age 60 and older or spread out amongst all enrollees), there might be a slight increase in health insurance premiums due to proposed Senate bill 623.

LEGISLATIVE ACTIVITY IN OTHER STATES

The National Conference of State Legislatures is not aware of any states that mandate the coverage for annual hearing screening for any adult population. However, it is common for states to mandate coverage for newborn hearing screening tests. As of August 2003, the National Conference of State Legislatures reported that thirteen states, including Massachusetts, require insurance coverage of newborn hearing screening tests.

ENDNOTES

[1] The Journal of the American Medical Association, "Screening and Management of Adult Hearing Loss in Primary Care," volume 289 No. 15, April 16, 2003.
[2] National Institute on Deafness and Other Communication Disorders "Hearing Loss and Older Adults," NIH Publication No. 01-4913, January 2001.
[3] Self Help for Hard of Hearing People (www.hearingloss.org), "A White Paper Addressing the Societal Costs of Hearing Loss and Issues in Third Party Reimbursement."
[4] The Journal of the American Medical Association, "Screening and Management of Adult Hearing Loss in Primary Care," volume 289 No. 15, April 16, 2003.
[5] Ibid.
[6] Kochkin PhD, Sergei and Rogin MA, Carole, "Quantifying the Obvious: The Impact of Hearing Instruments on Quality of Life," *The Hearing Review,* Page 10.
[7] Ibid.
[8] The Journal of the American Medical Association, "Screening and Management of Adult Hearing Loss in Primary Care," volume 289 No. 15, April 16, 2003.

APPENDIX I:

ACTUARIAL ASSESSMENT BY THE LEWIN GROUP

PROPOSED SENATE BILL NO. 623: "AN ACT TO PROVIDE SENIOR CITIZEN HEARING TESTS"

Actuarial Assessment of Massachusetts Senate Bill No. 623: "An Act to Provide Senior Citizen Hearing Tests"

Prepared for:

Division of Health Care Finance and Policy
Commonwealth of Massachusetts

February 2, 2004

I. SUMMARY AND RESULTS

The Massachusetts Division of Health Care Finance and Policy retained The Lewin Group to perform an actuarial assessment of the potential costs associated with Senate Bill No. 623, "An Act to Provide Senior Citizen Hearing Tests." The proposed legislation would require coverage for an annual hearing screening test, upon request, for any senior citizen (age 60 or older) by all health insurance plans or policies except for supplemental policies – for example, Medicare Supplement policies, hospital indemnity policies, and policies providing coverage only for specific diseases would not be affected. (Due to preemption by ERISA, the bill also would not affect self-insured employee benefit plans.) The bill also states that in the absence of a third party payer, the charges for the hearing screening test will be borne by the State.

Our assessment includes estimates of the following:

- The total number of Massachusetts residents covered by plans that would be affected by the legislation, and the number of Massachusetts residents in such plans who are senior citizens
- The unit costs for the mandated benefit (basic hearing screening tests)
- The likely utilization rates for this benefit among senior citizens, if the proposed legislation is enacted
- The projected total cost of providing the mandated benefit to Massachusetts senior citizens, the fraction of the total cost that already is being paid by health plans because they currently provide this benefit to some or all of their members, and the cost for the benefits that would be newly provided as a result of this mandate (which is the difference between the previous two amounts)
- The cost for newly provided benefits *per person affected by the legislation*, whether such a person is defined as a Massachusetts senior citizen covered by an affected plan, or as any Massachusetts resident covered by an affected plan
- The projected number of uninsured senior citizens in Massachusetts
- The cost to the State of providing annual hearing screening tests, upon request, to uninsured senior citizens.

The assessment also includes projections of the cost amounts described above over the five-year period from 2004 through 2008.

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A summary of the results of our analysis is presented in the exhibits below, labeled Part 1 through Part 4.

Part 1 of our analysis is a projection of health insurance costs under current law (i.e., disregarding the effects that S.B. 623 is expected to have if it is enacted). The base year is 2002, since that is the most recent year for which we have fairly comprehensive data. The basis for the population and cost figures in 2002 and the anticipated growth rates of these amounts in 2003 through 2008 are discussed in Section II of this report.

We expect the fully insured population in Massachusetts to grow from 4.04 million in 2002 to 4.21 million in 2008. (By "fully insured population," we mean the population that is insured, including those covered by Medicaid, but excluding those covered by self-insured employee benefit plans or by Medicare.) The average growth rate for the fully insured population is expected to be 0.70% per year, but a higher growth rate is assumed for the elderly population (2.03%) than for the non-elderly population (0.64%) to reflect the growing fraction of the populace represented by the 60-and-over age group. The fraction of the population that is age 60 or over is expected to grow from 4.3% (172,000 / 4,039,000) in 2002 to 4.6% (194,000 / 4,212,000) in 2008.

The average net health care cost per capita (i.e., per fully insured person) is expected to grow from $2,380 in 2002 to $3,595 in 2008, and the gross health insurance cost (including insurer administrative expenses, risk charges, and profits, all adding up to 12% of the gross premium) is expected to grow from $2,704 to $4,084 over the same period. The per capita cost figures for the non-senior group alone are 7-8% lower than the corresponding figures for the combined population, while the per capita cost figures for the senior group alone are 64-65% higher than the corresponding figures for the combined population. The same health care cost trend (10.1% in 2003, and 6.4% in 2004 through 2008) is applied to all of the per capita cost amounts for a given year.

Multiplying the population for each year by the corresponding per capita cost yields the total cost for fully insured plans for that year. The net cost is expected to grow from $9.6 billion in 2002 to $15.1 billion in 2008, and the gross cost is expected to grow from $10.9 billion in 2002 to $17.2 billion in 2008.

Part 2 of our analysis is a set of estimates of the cost effect of S.B. 623. In order to show the range of possible results, we developed a low-cost estimate and a high-cost estimate, in addition to the central or medium estimate, for some of the cost components used in our analysis (such as the expected utilization of the hearing screening benefit). For the resulting per-person cost, we show both a maximum range and a likely range. The low-cost end of the *maximum* range is based on the low-cost estimate of *each component* of the per-person cost, while the low-cost end of the *likely* range is based on the low-cost estimate of *one component* combined with the medium estimates for the other components of the per-person cost. The high-cost ends of the maximum and likely ranges are calculated in a similar manner.

The cost per hearing test is based on data submitted by most of the major health insurers in Massachusetts. Since there is less uncertainty about this component than there is for the other components of the per-person cost, we developed only a medium estimate and did not develop low-cost or high-cost estimates.

The data submitted by the insurers on current utilization of hearing tests was much sketchier, with most insurers not submitting any data. Instead of basing our utilization rate estimates on the current utilization, we based our low-cost and high-cost estimates on the utilization rates implicit in the overall cost estimates that one of the insurers produced for this benefit mandate.

The medium estimate is based on the recommended frequency of hearing screenings for older adults that was developed by the American Speech-Language-Hearing Association (once every three years), with some allowance for under-utilization.

The final component of the cost increase expected due to the mandate (i.e., the cost for benefits newly provided as a result of the mandate) is the fraction of the total cost (unit cost x utilization) that is already incurred by insurers because they already provide this benefit (sometimes with restrictions) to at least some of their members or policyholders. This is the most difficult component to quantify. We estimate that between 50% and 85.5% of the total cost is already being incurred by Massachusetts insurers, based on the data they submitted for this study. The *highest* value for this component is associated with the *low-cost* estimate of the per-person cost for new benefits because what goes into the final estimate is *one minus the value of this component*.

The medium estimate of the cost for benefits newly provided as a result of this mandate is $1.76 per year per covered senior citizen, which represents an increase of 0.03% over current costs (i.e., without the benefit mandate). The likely range of costs is $1.01 to $2.52 per year per covered senior citizen. If we spread the cost of the new benefits over the entire fully insured population (even though the benefit applies only to those age 60 and over), the resulting per-person cost is 8¢ per year.

Part 3 of our analysis is a projection of health insurance costs assuming enactment of S.B. 623. The per capita costs are the same as those developed in Part 1, except that the costs in years 2004 through 2008 for persons age 60 and over have been multiplied by one plus the medium estimate of the percentage cost increase developed in Part 2. (Note that the actual cost increase factor used in the analysis, 1.00025, was *not* rounded to four decimal places.) As was the case in Part 1, the total cost for fully insured plans for each year is obtained by multiplying the per capita cost for that year (from Part 3) by the corresponding projected population (from Part 1).

Part 4 of our analysis is a set of estimates of the projected cost to the State of providing hearing screening tests to uninsured senior citizens. This part uses the same senior citizen population growth rate and the same health care cost trend (for years 2004 through 2008) that were used in Part 1. The costs per uninsured senior citizen used to develop the low-cost, medium, and high-cost aggregate projections in this part are equal to the corresponding estimates of the *total* per-person costs (including costs already being incurred by insurers) that were developed in Part 2.

Cost Projection for Massachusetts Hearing Screening Proposal

Part 1: Projected Health Insurance Costs Under Current Law

	2002	2003	2004	2005	2006	2007	2008
Population Projection							
Population Growth Rate							
Age 0 to 59		0.64%	0.64%	0.64%	0.64%	0.64%	0.64%
Age 60 and over		2.03%	2.03%	2.03%	2.03%	2.03%	2.03%
Combined		0.70%	0.70%	0.70%	0.70%	0.70%	0.70%
Fully Insured Population (000s) *							
Age 0 to 59	3,866	3,891	3,916	3,941	3,966	3,992	4,017
Age 60 and over	172	176	179	183	187	191	194
Total	4,039	4,067	4,095	4,124	4,153	4,182	4,212
Per Capita Health Insurance Costs							
Health Care Cost Trend		10.1%	6.4%	6.4%	6.4%	6.4%	6.4%
Net Benefit Costs (annual)							
Age 0 to 59	$2,205	$2,428	$2,583	$2,748	$2,924	$3,112	$3,311
Age 60 and over	6,310	6,947	7,392	7,865	8,368	8,904	9,473
Combined	$2,380	$2,623	$2,794	$2,975	$3,169	$3,375	$3,595
Gross Premiums (annual) **							
Age 0 to 59	$2,505	$2,758	$2,935	$3,122	$3,322	$3,535	$3,761
Age 60 and over	7,168	7,892	8,397	8,935	9,507	10,115	10,763
Combined	$2,704	$2,980	$3,174	$3,380	$3,600	$3,835	$4,084
Total Costs for Fully Insured Plans							
Benefit Costs ($millions)							
Age 0 to 59	$8,526	$9,447	$10,116	$10,832	$11,599	$12,420	$13,300
Age 60 and over	1,087	1,221	1,326	1,439	1,563	1,696	1,842
Total	$9,613	$10,668	$11,442	$12,271	$13,162	$14,117	$15,141
Gross Premiums ($millions)							
Age 0 to 59	$9,686	$10,732	$11,492	$12,306	$13,177	$14,111	$15,110
Age 60 and over	1,235	1,388	1,506	1,635	1,775	1,927	2,092
Total	$10,921	$12,120	$12,999	$13,941	$14,953	$16,038	$17,202

* Includes Medicaid beneficiaries. Excludes persons covered by self-insured employee benefit plans.

** Margin for administrative expenses, risk charges, and profits is 12% of the gross premium.

Cost Projection for Massachusetts Hearing Screening Proposal

Part 2: Per-Person Costs for Hearing Screening, and Effect on Insurance Costs

	Low-Cost Estimate	Medium Estimate	High-Cost Estimate
Cost per hearing test (2003):	- - - -	$18.73	- - - -
Annual utilization per 1,000: (for persons age 60 and over)	168	292	381
Total cost for this benefit (per person age 60 or over)			
Annual:	$3.15	$5.47	$7.14
Monthly:	0.26	0.46	0.59
Portion of total cost that is already incurred by insurers:	85.5%	67.8%	50.0%
Cost for benefits newly provided as a result of this mandate (per person age 60 and over)			
Maximum range			
Annual:	$0.46	$1.76	$3.57
Monthly:	0.04	0.15	0.30
Likely range			
Annual:	$1.01	$1.76	$2.52
Monthly:	0.08	0.15	0.21
Cost for benefits newly provided, per insured person (any age)			
Likely range			
Annual:	$0.04	$0.08	$0.11
Monthly:	0.4 ¢	0.6 ¢	0.9 ¢
Likely cost increase due to mandate (new cost as % of current cost)			
For persons age 60 and over:	0.01%	0.03%	0.04%
For all insured persons:	0.002%	0.003%	0.004%

Cost Projection for Massachusetts Hearing Screening Proposal

Part 3: Projected Health Insurance Costs Under Hearing Screening Mandate (based on medium estimate of cost increase)

	2002	2003	2004	2005	2006	2007	2008
Per Capita Health Insurance Costs							
Net Benefit Costs (annual)							
Age 0 to 59	$2,205	$2,428	$2,583	$2,748	$2,924	$3,112	$3,311
Age 60 and over	6,310	6,947	7,394	7,867	8,370	8,906	9,476
Combined	$2,380	$2,623	$2,794	$2,976	$3,169	$3,375	$3,595
Gross Premiums (annual)							
Age 0 to 59	$2,505	$2,758	$2,935	$3,122	$3,322	$3,535	$3,761
Age 60 and over	7,168	7,892	8,400	8,937	9,509	10,118	10,765
Combined	$2,704	$2,980	$3,174	$3,380	$3,600	$3,835	$4,084
Total Costs for Fully Insured Plans							
Benefit Costs ($millions)							
Age 0 to 59	$8,526	$9,447	$10,116	$10,832	$11,599	$12,420	$13,300
Age 60 and over	1,087	1,221	1,326	1,440	1,563	1,697	1,842
Total	$9,613	$10,668	$11,442	$12,272	$13,162	$14,117	$15,142
Gross Premiums ($millions)							
Age 0 to 59	$9,686	$10,732	$11,492	$12,306	$13,177	$14,111	$15,110
Age 60 and over	1,235	1,388	1,507	1,636	1,776	1,928	2,093
Total	$10,921	$12,120	$12,999	$13,942	$14,953	$16,038	$17,202

Cost Projection for Massachusetts Hearing Screening Proposal

Part 4: Projected Cost of Providing Hearing Screening to Uninsured Seniors

	2002	2003	2004	2005	2006	2007	2008
Population Projection							
Population Growth Rate							
Age 60 and over	- - - -	2.03%	2.03%	2.03%	2.03%	2.03%	2.03%
Uninsured Population							
Age 60 and over	26,700	27,242	27,795	28,359	28,935	29,522	30,122
Cost Projection							
(based on total annual cost of hearing screening benefit developed in Part 2 of the projection)							
Health Care Cost Trend			6.4%	6.4%	6.4%	6.4%	6.4%
Low-Cost Estimate:			$93,058	$101,024	$109,672	$119,060	$129,251
Medium Estimate:			161,744	175,590	190,620	206,937	224,650
High-Cost Estimate:			211,043	229,108	248,720	270,010	293,123

II. METHODS, ASSUMPTIONS, AND SOURCES

We used the following methods and assumptions, with the sources noted, to derive the number of insured and uninsured persons who would be affected by the proposed legislation:

1. We took the 2002 population estimates for Massachusetts, for children (age 0-17), young and middle-aged adults (age 18-59), "near-elderly" adults (age 60-64), and elderly adults (age 65 and over) from the U.S. Census Bureau's *American Community Survey Change Profile, 2000-2002*. There were approximately 1,433,000 children, 3,788,000 young and middle-aged adults, 182,000 near-elderly adults, and 807,000 elderly adults in Massachusetts in 2002.

2. In an earlier study (*Actuarial Assessment of Massachusetts Senate Bill No. 535: "An Act to Reduce Asthma Rates and Associated Costs in the Commonwealth,"* prepared by The Lewin Group for the Division of Health Care Finance and Policy, November 13, 2003, hereinafter referred to as "the asthma study"), we had determined the number of uninsured children (age 0-17) and uninsured non-elderly adults (age 18-64, which combines our current "young and middle-aged adults" and "near-elderly adults" categories) by applying the uninsured percentages (3.2% for children and 9.2% for non-elderly adults) from the report entitled *Health Insurance Status of Massachusetts Residents (Third Edition),* which the Division published in January 2003. In a December 16, 2003 e-mail from Elizabeth Robinson of the Division, we were informed that approximately 26,700 Massachusetts senior citizens (age 60 and over, which combines our current "near-elderly adults" and "elderly adults" categories) were uninsured in 2002, according to the Division's household survey, and that this was about 2.7% of the total population of senior citizens. We also were informed in that e-mail that a total of 418,309 Massachusetts residents of all ages were uninsured in 2002. Based on this information, we were able to deduce that the number of near-elderly uninsured persons was 19,500, and the number of elderly uninsured persons was 7,200, for a total of 26,700 uninsured senior citizens in Massachusetts in 2002.

3. We subtracted the number of uninsured from the total population to get the number of persons in each age group in Massachusetts with health insurance coverage in 2002. We estimated the number of elderly adults with health insurance other than Medicare by assuming that the ratio of this number to the number of insured near-elderly adults (who presumably don't have Medicare coverage, in general) was the same as the ratio of non-Medicare-supplement elderly members (or policyholders) to near-elderly members as reported by the insurers who provided enrollment, unit cost, and utilization data for this study. (The reported ratio was 35%.)

4. We took the number of children and non-elderly adults whose health insurance coverage was (a) through direct-purchase policies or (b) through employee benefit plans from the asthma study mentioned above. These numbers in turn were derived from Table A-2 from the publication entitled *Health Insurance Coverage in the United States: 2002*, published by the U.S. Census Bureau in September 2003. The percentages found in Table A-2 were adjusted downward so that the number of remaining insured persons would match the number and age distribution of non-elderly Massachusetts residents covered by Medicaid/SCHIP, as reported in (a) the publication entitled *MassHealth 1115 Demonstration Project Annual Report SFY02*, and (b) the Kaiser Family Foundation's "State Health Facts Online" web site. We assumed that, for the 18-59 group, the 60-64 group, and the 65-and-over group, the percentages covered through direct-purchase policies

and through employee benefit plans was the same as the corresponding percentages for the 18-64 group as determined in the asthma study.

5. We estimated the portion of those covered through employee benefit plans who were in *self-funded* plans by using the 26.7% figure reported in the Division's *2001 Employer Health Insurance Survey*. It should be noted that a much larger percentage (56.6%) is reported in AHRQ's Medical Expenditure Panel Survey. Using the latter survey in our analysis would have resulted in considerably fewer persons being deemed to be covered by plans or policies that would be affected by a benefit mandate.

For each age group, the number of insured persons affected by the proposed legislation – that is, the number of fully insured persons – is equal to the total number of insured persons minus the number covered by self-insured employee benefit plans, derived in the manner described above. The worksheet used to calculate the population breakdowns for Massachusetts is shown in Exhibit A.

The population growth rate for the projections is equal to the average annual growth rate for the population of Massachusetts between 2000 and 2002, as reported by the U.S. Census Bureau. Separate rates for senior citizens and for non-seniors were derived by examining the Census Bureau's estimated population breakdowns as of 7/1/2002 and its projected population breakdowns as of 7/1/2012 by 5-year age groups.

The baseline annual net benefit costs and gross premiums for health insurance in 2002 were derived from the amounts shown in the asthma study cited above. These amounts in turn were derived from the data reported in "The Economic Burden of Health Care and Illness on Typical Massachusetts Families" (a report written by Dryfoos, Kuhlthau, Bigby, Hanrahan, Lassen, and Robinson and sponsored by the Women's Education and Industrial Union, Boston, MA) and from the data reported in *Employer Health Benefits: 2003 Annual Survey*, published by the Kaiser Family Foundation and the Health Research and Educational Trust. Relative health insurance costs by age were taken from the *2003 Tillinghast HealthMAPS Medical Rate Manual and Software*.

The health care cost trend (i.e., the annual increase in per-capita costs) was taken from the most recent health spending projections produced by the Office of the Actuary at the Centers for Medicare and Medicaid Services.

EXHIBIT A: Massachusetts Population Breakdowns Worksheet

		non-seniors		senior citizens		
			non-elderly adults			
		children	young & middle-aged adults	near-elderly adults	elderly adults	
		0-17	18-59	60-64	65&up	**total**
+	Total population	1,433,401	3,788,287	181,514	807,375	**6,210,577**
		(0-18)				
		3.2%	9.1%	10.733%	0.9%	**6.7%**
-	Uninsured	45,869	345,740	19,482	7,218	**418,309**
=	Insured	1,387,532	3,442,547	162,032	800,157	**5,792,268**
	Medicare:	0	0	0	743,446	**743,446**
	Other:	1,387,532	3,442,547	162,032	56,711	**5,048,823**
-->	*Direct purchase*	*73,000*	*294,155*	*13,845*	*4,846*	***385,846***
		5.3%	8.5%	8.5%	8.5%	**7.6%**
	check:	0				
	ER-covered	872,000	2,737,168	128,832	45,091	**3,783,091**
		62.8%	79.5%	79.5%	79.5%	**74.9%**
	check:	0				
-->	*Public insured*	*442,532*	*411,224*	*19,355*	*6,774*	***879,886***
	(alt)	443,000	411,626	19,374	6,781	**880,781**
		31.9%	12.0%	12.0%	12.0%	**17.4%**
	ER self-insured	232,824	730,824	34,398	12,039	**1,010,085**
		26.7%	26.7%	26.7%	26.7%	**26.7%**
-->	*ER non-self*	*639,176*	*2,006,344*	*94,434*	*33,052*	***2,773,006***
	Sum of "-->" rows:	***1,154,708***	***2,711,723***	***127,634***	***44,672***	**4,038,737**