

March 11, 2009

Actuarial Cost Estimate:
Connecticut Senate Bill 301

**An Act Concerning Health
Insurance Coverage for Autism
Spectrum Disorders**

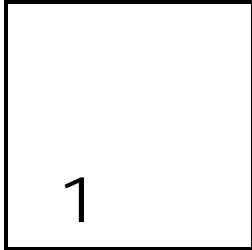
OLIVER WYMAN

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Background

Oliver Wyman Actuarial Consulting, Inc. (Oliver Wyman or we) has been engaged by Autism Speaks to develop a cost model in order to analyze and estimate the impact of mandated insurance benefits for autism spectrum disorders (ASD) on insurance premiums. As part of this work, Oliver Wyman has developed a range of independent estimates of the impact on insurance premiums of the benefits mandated by Connecticut Senate Bill 301 which provides coverage for the diagnosis and treatment of autism spectrum disorders.

Oliver Wyman is a part of the Marsh & McLennan (MMC) family of companies. With over 60 members of the American Academy of Actuaries, Oliver Wyman is one of the largest actuarial practices in North America. Oliver Wyman's health practice, which has twelve credentialed actuaries, advises insurers, regulators, governments, interest groups, and others.

This report, along with its supporting analysis, was developed by Marc Lambright, a Principal and consulting health actuary in Oliver Wyman's Philadelphia office. Marc is a Fellow of the Society of Actuaries and a member of the American Academy of Actuaries and is professionally qualified to analyze the cost impact of Senate Bill 301 and provide the estimates shown in this report. As part of Oliver Wyman's quality assurance process, the underlying analysis and this report were independently peer reviewed by another credentialed Oliver Wyman actuary.

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Scope and Limitations

The intent of this analysis is to provide a reasonable range of estimates for the insured costs of the mandated ASD benefits provided for in Senate Bill 301 and the associated premium impact on the markets affected by Senate Bill 301. This analysis makes no attempt to quantify potential offsetting cost savings associated with successful ASD treatment, nor does it include any estimate of the potential reduction in other government expenditures associated with providing ASD services that might overlap with the benefits provided by this mandate. Therefore, the reader is cautioned that this report should only be considered a cost analysis, and not be misconstrued as a cost-benefit analysis when assessing the merit of Senate Bill 301.

We note that cost estimates for autism mandates have varied widely state to state based on differences in the state-specific mandates and the methods and assumptions used in estimating costs, though typically independent estimates show premium increases due to mandated autism benefits of less than 1%. The reason for this variability is that the largest component of the increase in costs under the Senate Bill 301 mandated ASD benefits is for behavioral therapy, including applied behavior analysis (ABA), which is almost universally excluded from health coverage, and therefore essentially no insured data exists for use in developing credible utilization and unit cost estimates for ABA.

The reader is further cautioned that the ultimate cost of covering ABA benefits is uncertain; however, this analysis attempts to reflect the likely behavior of consumers, providers and insurers of ABA services in developing the assumptions underlying the cost estimates. Likewise, the additional costs for mandated medical services other than ABA are uncertain. Currently, Connecticut insurance policies cover some services for children diagnosed with an ASD, although the mandate could cause the insured costs for certain services to increase because certain ASD services that may have been denied or terminated due to policy limits or utilization review might be covered due to the mandate.

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Description of Key Senate Bill 301 Provisions and their Impact on Covered Benefits

Insurance Markets Covered by the Mandate

Senate Bill 301 amends Section 38a-514b of the general statutes for Connecticut. The Bill states “*Each group health insurance policy providing coverage of the type specified in subdivisions (1), (2), (4), (11) and (12) of section 38a-469 that is delivered, issued for delivery, renewed, amended or continued in this state on or after January 1, 2009 shall provide coverage for...the diagnosis and treatment of autism spectrum disorders...*” Senate Bill 301 appears to apply to the small group (2-50 employees) and large group (51+ employees) markets.

Covered Benefits

The mandate provides for the diagnosis and treatment of autism spectrum disorders, by stating: “*Such policy shall provide coverage for the following...:*”

- (1) Behavioral therapy;*
- (2) Medications prescribed by a licensed physician and any related services deemed medically necessary, as defined in section 38a-482a, by such physician to determine the need or effectiveness of such medications;*
- (3) Direct psychiatric or consultative services provided by a psychiatrist licensed in the state in which such psychiatrist practices;*
- (4) Direct psychological or consultative services provided by a psychologist licensed in the state in which such psychologist practices; and*
- (5) Physical therapy, speech therapy and occupational therapy services provided by a medical professional licensed or certified to provide such services.*

‘Behavioral therapy’ means interactive therapies derived from evidence-based research that are provided to children less than thirteen years of age, including, but not limited to, applied behavior analysis...”

The inclusion of applied behavior analysis (ABA), in the definition of “*behavioral therapy*” is especially important. The coverage of behavioral therapies, including ABA, has the most significant impact on cost of any mandated service. For the purpose of this report, reference to ABA encompasses all behavioral therapies. We note ABA is the most widely accepted behavioral therapy and that we would expect other approved behavioral programs to have similar costs.

ABA programs are marked by intensive therapy that may include 30-40 hours of therapy a week under the most intensive programs, although many programs would not utilize that level of resources. Key assumptions underlying our ABA cost estimates are outlined in Section 5.

Annual Maximum Benefit for Applied Behavior Analysis

The Bill states “*Such policy may limit the coverage for behavioral therapy to a yearly benefit of fifty thousand dollars for a child who is less than nine years of age and thirty-five thousand dollars for a child who is at least nine years of age and less than thirteen years of age.*” Therefore, the Bill limits the annual benefits for ABA services to \$50,000 for children less than nine years old and limits the annual benefits for ABA services to \$35,000 for children nine to twelve years old.

Maximum Age for Benefits

The Bill states “*‘Behavioral therapy’ means interactive therapies derived from evidence-based research that are provided to children less than thirteen years of age...*” Therefore, we assume that the maximum age in which an individual can receive covered benefits as stated by the Bill is twelve.

Medical Necessity and Treatment Review

The Bill states that “*except for treatments and services received by an insured in an inpatient setting, an insurer, health care center, hospital service corporation, medical service corporation or fraternal benefit society may review a treatment plan developed as set forth in subsection (c) of this section for such insured, in accordance with its utilization review requirements, not more than once every six months unless such insured’s licensed physician, licensed psychologist or licensed clinical social worker agrees that a more frequent review is necessary.*” Therefore, we assume that ASD benefits under the Bill may be subject to utilization review. This is important as insurers will develop protocols to review treatments and manage care which will limit unnecessary treatments if reviews are done appropriately.

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Modeling Methodology

The following outlines the general modeling methodology used to develop our cost estimates. Estimates were developed both on a per member per year basis, and as a percentage of average annual premiums, as shown in Section 6. Details of key assumptions are discussed in Section 5 and illustrated graphically in the exhibits shown in Appendix 1.

Modeling Perspective

Our model was developed to produce costs under a range of assumptions, but generally assumes that a sufficient supply of providers would be available to meet the demand for autism services, especially with regard to ABA services. It also assumes that there would be sufficient awareness of autism and motivation (primarily by parents) to seek treatment so that the diagnosis and treatment of ASDs would be more in-line with CDC prevalence estimates. We would expect that it would take at a minimum of several years for both the supply of providers to meet the demand for mandated ASD services and for parents of autistic children to aggressively seek diagnosis and treatment of their children's disorders.

In spite of these real limitations that will likely limit short-term costs associated with mandated autism benefits, we feel that it is appropriate from a public policy perspective to look at the costs from a longer term perspective and assume that both awareness of ASDs will increase and that supply and demand for ASD services would eventually be in balance. We have developed our estimates with this in mind.

Acknowledging that short-term costs are also important to policymakers, in Section 6 we have included an illustrative exhibit of the possible progression of costs for mandated benefits by assuming that initial costs would be roughly one-half of the long-term estimates. We also assumed that it would take five years for costs to reach their ultimate levels, although these assumptions varied by cost scenario.

In the near term, we would note that the supply of ABA service providers, specifically credentialed Board Certified Behavior Analysts (BCBAs) and Board Certified Associated Behavior Analysts (BCaBAs) would not be sufficient to meet the demand for ABA programs if ABA benefits are mandated. There are currently approximately 146¹ certified BCBAs and BCaBAs in Connecticut, which translates to about one certified behavioral analyst per every 38 individuals 21 years old or younger currently being treated for ASD. Noting that behavioral analysts provide services to individuals other than autistic children, it is reasonable to conclude that demand for ABA services, at least initially, would exceed supply should health care coverage similar to that mandated by Senate Bill 301 become typical.

It is also instructive to look at some of the limited evidence available related to actual costs of ABA mandated benefits in other states. Aetna noted in December 2008 that it had tracked the cost of the autism mandate in Texas for its first year of existence and found that it increased costs for policyholders who filed autism-related claims by \$379 a month. A total of 235 policy holders had filed autism claims in the state as of the time the data was released. At that time, the company had not decided whether to pass those costs on to the policyholders because the cost of the mandate might change after the first year.² While this is only first year experience for a single insurer, it illustrates that initial mandate costs are likely low. Aetna's Texas block of business is quite large (approximately \$1.5 - 2.0 billion in premium³), so the statistics provided indicate a mandate cost of less than 0.1% of premium.

General Modeling Process

The modeling process employed to develop our cost estimates was as follows:

1. Assumed treated prevalence for the United States is 1 in 150 based on the CDC's estimate of ASD prevalence in the United States.
2. Prevalence rates by diagnostic subtype (autistic disorder, PDD-NOS, Asperger's Syndrome) were estimated separately, since diagnosis patterns and service utilization could reasonably be expected to vary by diagnostic subtype.
3. The percentage of children diagnosed by age for each diagnostic subtype was estimated so that the average ages of diagnosis implicit in the modeling are consistent with publicly available age at diagnosis statistics⁴.
4. The percentage of diagnosed children who could be expected to have an ABA program was estimated for each age based on assumptions regarding how many children would start a program and typical program continuance.

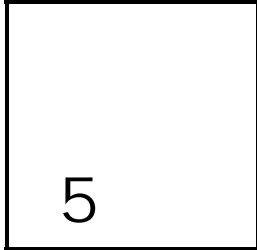
¹ BACB Certificant Registry. http://www.bacb.com/cues/frame_about.html. Accessed January 2009.

² Associated Press. *Lawmaker: Oklahoma autism bill has momentum*. December 4, 2008. <http://newsok.com/article/3327594>. Accessed January 2009.

³ NAIC Annual Statements for 2007.

⁴ IAN database. <http://dashboard.ianexchange.org/StateStatsAdvanced.aspx?A1=VA&ADU=T>. Accessed January 2009.

5. A distribution of the number of annual hours for ABA by age was developed based on ABA provider input and an assumption that utilization review by insurers would impact utilization to some degree.
6. Based on the assumed treatment prevalence, likelihood of having an ABA program, assumed distribution of ABA program hours, and estimated ABA program cost per hour of therapy, ABA cost estimates by age were developed. These ABA cost estimates were capped according to the annual maximums specified in the Bill.
7. Non-ABA costs were estimated based upon studies of medical costs for children diagnosed with ASD and judgment regarding the increase in costs that could be expected due to the mandated benefits. Our cost estimates took into consideration that currently certain physical therapy, speech therapy and occupational therapy services for the treatment of autism spectrum disorders are mandated due to House Bill 5696.
8. Based on Census demographic data and the cost estimates for mandated ASD services by age as outlined in 1-7 above, an annual cost per covered individual was developed.
9. The cost of services was increased to reflect administrative and other insurer costs or profit charges.
10. The estimated size of the covered market was developed based on Census, Medical Expenditure Panel Survey (MEPS) enrollment and premium information for Connecticut, and Kaiser Family Foundation coverage data. These assumptions are further documented in Section 5.
11. The cost of the mandated services per covered person and as a percentage of premiums were calculated based on the model cost estimates and market data under a range of assumptions to develop “Low,” “Middle,” and “High” cost scenario estimates.



Summary of Key Assumptions

Key assumptions underlying the cost estimates for the proposed mandated benefits are summarized in this section. In order to better illustrate the sensitivity of costs to various assumptions, we developed assumptions for “Low,” “Middle,” and “High” cost scenarios. Appendix 1 further illustrates these assumptions for the “Middle” scenario.

Treated Prevalence and Age at Diagnosis

Overall treated prevalence is based on the 2007 CDC⁵ study estimating United States ASD prevalence of 1 in 150. Prevalence by diagnostic subtype was estimated based on an academic study published in the American Journal of Psychiatry⁶.

As noted in the previous section, the percentage of children diagnosed by age for each diagnostic subtype was estimated so that the average age of diagnosis implicit in the modeling is consistent with publicly available age at diagnosis statistics.

The treated prevalence and age at diagnosis assumptions for Connecticut are shown below:

<u>Connecticut Prevalence</u>		
<u>Diagnostic Subtype</u>	<u>Ultimate Prevalence</u>	<u>Average Age of Diagnosis</u>
Autistic Disorder	1 in 450	3
PDD-NOS	1 in 300	3
Asperger's	1 in 900	6
All ASD	1 in 150	

⁵ Centers for Disease Control. Morbidity and Mortality Weekly Report. February 9, 2007.

⁶ Fombonne, E. and S. Chakrabarti. American Journal of Psychiatry. June 2005.

ABA Program Utilization and Cost

ABA Program Utilization by Age

ABA programs require a significant commitment from affected children, as well as their families. It is likely that a significant number of ASD children will not have an ABA program regardless of the availability of a provider, and many others diagnosed with ASD, especially those in more rural areas, may have difficulty accessing a provider. For this reason, we have assumed that 40% to 66.7% (40% for “Low” scenario, 50% for “Middle” and 66.7% for “High”) of diagnosed children under age 6 will begin an ABA program. Based on discussions with ABA providers and researchers, actual utilization of ABA programs has been lower in many cases due to the lack of providers, the lack of coverage, and to some extent the limited understanding of ABA programs and their efficacy.

In Minnesota, a state that is widely regarded as having some of the most extensive ABA coverage and services in the nation, provider data indicates ABA utilization of approximately 20% of diagnosed three to six year olds⁷, which is considerably lower than assumed in each of the scenarios in our modeling. While our range of assumptions for ABA utilization may appear conservative, and likely is conservative in the near-term, we feel that the range is reasonable since insurers will likely have some conservatism in their cost estimates and premium rates. Private insurance utilization will also likely be higher than under the public/private programs in Minnesota, and utilization could increase over time due to increased awareness of ASD, and potentially an increased supply of ABA providers.

In addition to the likelihood of starting a program, program continuance assumptions have a very significant impact on overall ABA utilization and cost estimates. ABA programs are generally geared towards addressing deficits in younger children and are not intended to be continued indefinitely. For this reason, we have assumed that no programs would terminate prior to school age, that a large percentage of ABA programs would terminate at ages six and seven when an autistic child could be expected to enter elementary school, and annually thereafter a large percentage of remaining programs would terminate until only a very small percentage of children have ABA programs in their teenage years. Programs would be expected to terminate if a child has experienced sufficient progress whereby a program is no longer necessary or if the insurer or family sees no progress, as well as for other reasons.

⁷ Discussion with Dr. Eric Larsson Executive Director, Clinical Services, The Lovaas Institute for Early Intervention Midwest Headquarters regarding ABA utilization research in Minnesota. February 2009.

The assumed percentage of children diagnosed with ASD that have an ABA program by age for our “Middle” scenario is shown in the table below:

% of Diagnosed Children w/ ABA	
Under 6	50.0%
6	37.5%
7	25.0%
8	16.7%
9	11.1%
10	7.4%
11	4.9%
12	3.3%
Ages 13 to 16	2.5%

We note that in estimating the costs for benefits mandated by the Bill, only ages 0 to 12 were included. However, this report also includes estimates related to expanding coverage from 13 to 16 which is why they are shown in the table above.

ABA Program Annual Number of Hours

In developing the assumed annual ABA program hours, we discussed typical ABA programming with ABA providers, and reviewed some benefit materials from one of the few large self-insured employers who offer ABA benefits.⁸ For three age bands we developed a distribution of expected hours that resulted in the annual averages shown in the table below:

Average ABA Program Hours	
Ages Under 8	1,500
Ages 8 to 12	671
Ages 13 to 16	401

The general assumption is that pre-school aged children will have programs for 20 to 40 hours a week, averaging about 30 hours a week. This time will be reduced by over half by age eight when children would be expected to be in school and the school system would be required to provide services during the school day, and would then again be reduced significantly at age 13 as the child ages and ABA programs would be expected to be less time consuming and address a smaller number of behavioral deficits.

Cost per Hour of ABA Service

In developing the costs per hour, we reviewed ABA program staffing information and ABA provider wage and overhead cost assumptions. We developed an average cost for the entire United States and then adjusted this for Connecticut, based on Bureau of Labor Statistics⁹ health care wage data. The resulting average cost per hour of ABA therapy in Connecticut is \$50.37 for a program based on the assumption that staffing will be in line with what best practices might recommend. This is the cost underlying our “High” assumption, though we note that costs would vary based on the mix of professionals and

⁸ Autism Therapy Reference- Microsoft Corporation (administered by Premera Blue Cross).

⁹ BLS wage data. <http://www.bls.gov/guide/geography/wages.htm> accessed January 2009.

technicians providing the services, and likely would be lower if less experienced ABA practitioners need to be employed to meet the increasing demands for services.

Range of Annual ABA Program Costs for Scenario Estimates

Given the actual cost of an ABA program could vary significantly for many reasons, we have assumed annual average program costs by scenario as follows:

“Low” cost scenario - assumes average ABA program cost is \$30,000 for children 0-8 and \$14,019 per year for children 9-12.

“Middle” cost scenario - assumes average ABA program cost is \$40,000 for children 0-8 and \$18,888 per year for children 9-12.

“High” cost scenario - based on the assumptions outlined in this section for the continuance of ABA programming, the number of annual hours for ABA programming, and an hourly rate of \$50.37, the calculated averages for the annual costs of ABA programs are \$48,400 for children 0-8 and \$29,604 per year for children 9-12.

Other (than ABA) Medical Costs

Based on several studies,¹⁰ we estimated that children with ASDs had costs covered by insurers of approximately three times the average for non-inpatient medical services under current benefit programs. It is also clear that the mandate would mean that some services that an insurer could currently deny or exclude would now be covered. In our range of estimates, we assumed that the mandate would result in additional insured non-ABA medical costs that would be 25% to 50% of the current level of estimated covered non-inpatient costs for services to children diagnosed with an ASD.

Note that many non-ABA medical services are already provided to individuals with ASD due to typical insurance coverage, as well as, and the mandated coverage of physical, speech, and occupational therapies in Connecticut. The estimated annual cost for additional non-ABA services for all children under 13 diagnosed with an ASD that would be covered as a result of Senate Bill 301 are shown for each scenario in the table below:

Scenario	Non-ABA Medical Costs
Low	\$1,050
Middle	\$1,575
High	\$2,100

(Amounts in 2009 dollars)

As reasonableness check of the amounts above, we compared our model cost estimates to the estimated costs of mandated habilitative services (which requires coverage for non-ABA services like the ones specified in Senate Bill 301) for children in Maryland with

¹⁰ Mandell, Cao, Ittenbach, & Pinto-Martin, 2006. Croen, Najjar, Ray, Lotspeich, & Bernal, 2006. Liptak, Stuart, & Auinger, 2006.

ASD or Cerebral Palsy. The Maryland Health Care Commission analysis¹¹ estimated full costs of 0.1%, and marginal costs of less than 0.05% of premium for those mandated benefits for children with ASD and Cerebral Palsy. Our modeling develops cost estimates consistent with that report, considering the differences between Senate Bill 301 and the Maryland mandate.

Administrative Costs

Typically, medical claim costs could be expected to be 80 to 90% of premiums, meaning 10 to 20% of premiums are available for administration, profit, or other costs, often collectively referred to as “retention.” We have estimated the incremental retention charge to be 15% of premium.

Connecticut Market Data

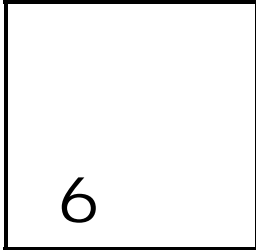
The MEPS survey provides average premiums, enrollees, offer rates, take-up rates, and self-insured percentages by employer size for healthcare coverage sponsored by privately insured employers. From this data we can estimate the size of the privately insured small group and insured large group markets. State-specific premium data for Connecticut was available for 2006¹², so we trended this based on average recent employer premium increases provided from the Kaiser Family Foundation HRET¹³ survey to estimate the 2009 average annual premium per member necessary to compute the cost of mandated benefits as a percentage of annual premiums.

In developing our premium and membership estimates, we completed reasonableness tests by reviewing insurer annual statement filings to ensure that the group premium estimates were not unreasonable.

¹¹ Maryland Health Care Commission. Study of Mandated Health Insurance Services: A Comparative Evaluation. January 1, 2008.

¹² MEPS state survey data. http://www.meps.ahrq.gov/mepsweb/data_stats/state_tables.jsp?regionid=-1&year=-1. Accessed January 2009.

¹³ Kaiser Family Foundation and Health Research Educational Trust. Employer Health Benefits- 2008 Annual Survey.



Cost Estimates for Senate Bill 301 Benefits

Long-Term Cost Estimates - “Middle” Cost Scenario

The table below summarizes our “Middle” scenario annual cost estimates and premium increases on a per covered person basis, and as a percentage of the annual premiums for each market. Our “Middle” estimate is that in the long-term, the premium increase associated with the mandated benefits provided by Senate Bill 301 would be about 0.29% of insured premiums, assuming that the small group and large group private insurance markets are covered by the Bill. However, we note that costs could be lower in the years immediately following the passage of the mandate due to the limited supply of ABA therapists.

The estimated cost increases for the small group and large group markets are shown in the table below. The annual claim cost per covered person estimate of \$10.10 and premium increase of \$11.90 are in 2009 dollars.

	Market		
	Small Group	Large Group	All
Covered Persons	386,000	603,000	989,000
Average Premium per Person	\$4,100	\$4,100	\$4,100
Annual Mandate Claim Cost per Covered Person	\$10.10	\$10.10	\$10.10
Claim Cost as a Percentage of Premium	0.25%	0.25%	0.25%
Estimated Premium Increase with Admin @ 15%	\$11.90	\$11.90	\$11.90
Premium Increase as a Percentage of Premium	0.29%	0.29%	0.29%

Scenario Estimates

As discussed in Section 1, very little insurance data exists that can be used to directly estimate the costs of ABA benefits mandated by Senate Bill 301. This causes uncertainty in developing actuarial assumptions and cost estimates. Due to this uncertainty, it is

useful to develop cost estimates for scenarios using more optimistic and pessimistic assumptions.

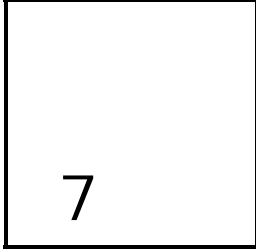
Cost estimates are very sensitive to various assumptions, especially those related to ABA utilization and costs. Therefore, we varied our assumptions to develop estimated costs for ASD services under “Low,” “Middle,” and “High” cost scenarios, as shown in the table below:

Scenario	% Diagnosed Under Age 6 Starting ABA	Avg. Age 0-8 Annual ABA Program Cost	Avg. Age 9-12 Annual ABA Program Cost	Avg. Annual non-ABA Cost (All Ages)	Annual Premium Increase Per Person	Premium Increase (% of Premium)
Low	40.0%	\$30,000	\$14,019	\$1,050	\$7.20	0.18%
Middle	50.0%	\$40,000	\$18,888	\$1,575	\$11.90	0.29%
High	66.7%	\$48,400	\$29,604	\$2,100	\$18.80	0.46%

Short-Term Cost Estimates by Scenario

In addition to the uncertainty associated with long-term cost estimates, how quickly costs could reach their ultimate level due to the limited supply of ABA therapists is also uncertain. We have provided the table below to illustrate the potential short-term increases in premiums, and how they could grade into the long-term estimates over time.

Estimated Increase in Premiums due to SB 301 Benefits by Year						
Scenario	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6 and Beyond
Low	0.06%	0.08%	0.11%	0.13%	0.15%	0.18%
Middle	0.14%	0.17%	0.20%	0.23%	0.26%	0.29%
High	0.31%	0.34%	0.37%	0.40%	0.43%	0.46%



Cost Estimates – Expanded Benefits to Age 16

Autism Speaks asked us to develop cost estimates for additional covered benefits. This section summarizes our cost estimates assuming that the benefits are expanded to provide coverage through age 16, rather than through age 12 as specified under Senate Bill 301. We are assuming that ABA benefits for ages 13 to 16 are subject to a \$35,000 annual maximum.

Long-Term Cost Estimates - “Middle” Cost Scenario

The table below summarizes our “Middle” scenario annual cost estimates and premium increases on a per covered person basis, and as a percentage of the annual premiums for each market. Our “Middle” estimate is that in the long-term, the premium increase associated with the mandated benefits provided by Senate Bill 301 would be about 0.31% of insured premiums assuming that the small group and large group private insurance markets are covered by the Bill. Again, we note that costs could be lower in the years immediately following the passage of the mandate due to the limited supply of ABA therapists.

The estimated cost increases for the small group and large group markets are shown in the table below. The annual claim cost per covered person estimate of \$10.90 and premium increase of \$12.80 are in 2009 dollars.

	Market		
	Small Group	Large Group	All
Covered Persons	386,000	603,000	989,000
Average Premium per Person	\$4,100	\$4,100	\$4,100
Annual Mandate Claim Cost per Covered Person	\$10.90	\$10.90	\$10.90
Claim Cost as a Percentage of Premium	0.27%	0.27%	0.27%
Estimated Premium Increase with Admin @ 15%	\$12.80	\$12.80	\$12.80
Premium Increase as a Percentage of Premium	0.31%	0.31%	0.31%

Scenario Estimates

As discussed in Section 1, very little insurance data exists that can be used to directly estimate the costs of ABA benefits mandated by Senate Bill 301. This causes uncertainty in developing actuarial assumptions and cost estimates. Due to this uncertainty, it is useful to develop cost estimates for scenarios using optimistic and pessimistic assumptions.

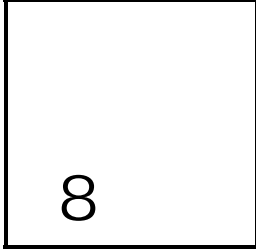
Cost estimates are very sensitive to various assumptions, especially those related to ABA utilization and costs. Therefore, we varied our assumptions to develop estimated costs for ASD services under the “Low,” “Middle,” and “High” cost scenarios, as shown in the table below:

Scenario	% Diagnosed Under Age 6 Starting ABA	Avg. Age 0-8 Annual ABA Program Cost	Avg. Age 9-12 Annual ABA Program Cost	Avg. Age 13-16 Annual ABA Program Cost	Avg. Annual non-ABA Cost (All Ages)	Annual Premium Increase Per Person	Premium Increase (% of Premium)
Low	40.0%	\$30,000	\$14,019	\$8,382	\$1,050	\$7.80	0.19%
Middle	50.0%	\$40,000	\$18,888	\$11,293	\$1,575	\$12.80	0.31%
High	66.7%	\$48,400	\$29,604	\$19,665	\$2,100	\$20.20	0.49%

Short-Term Cost Estimates by Scenario

In addition to the uncertainty associated with long-term cost estimates, how quickly costs could reach their ultimate level due to the limited supply of ABA therapists is also uncertain. We have provided the table below to illustrate the potential short-term increases in premiums, and how they could grade into the long-term estimates over time.

Estimated Increase in Premiums due to SB 301 by Year						
Scenario	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6 and Beyond
Low	0.06%	0.09%	0.11%	0.14%	0.16%	0.19%
Middle	0.16%	0.19%	0.22%	0.25%	0.28%	0.31%
High	0.33%	0.36%	0.39%	0.43%	0.46%	0.49%



Cost Estimates – Expansion to Age 16, Annual Caps Eliminated

As previously mentioned, Autism Speaks asked us to develop cost estimates under additional benefit designs. This section summarizes our cost estimates assuming the benefits are expanded to provide coverage through age 16 and there are no annual maximums on covered ABA benefits specified under the Bill.

Long-Term Cost Estimates - “Middle” Cost Scenario

The table below summarizes our “Middle” scenario annual cost estimates and premium increases on a per covered person basis, and as a percentage of the annual premiums for each market. Our “Middle” estimate is that in the long-term, the premium increase associated with the mandated benefits provided by Senate Bill 301 would be about 0.44% of insured premiums assuming that the small group and large group private insurance markets are covered by the Bill. Again, we note that costs could be lower in the years immediately following the passage of the mandate due to the limited supply of ABA therapists.

The estimated cost increases for the small group and large group markets are shown in the table below. The annual claim cost per covered person estimate of \$15.20 and premium increase of \$17.90 are in 2009 dollars.

	Market		
	Small Group	Large Group	All
Covered Persons	386,000	603,000	989,000
Average Premium per Person	\$4,100	\$4,100	\$4,100
Annual Mandate Claim Cost per Covered Person	\$15.20	\$15.20	\$15.20
Claim Cost as a Percentage of Premium	0.37%	0.37%	0.37%
Estimated Premium Increase with Admin @ 15%	\$17.90	\$17.90	\$17.90
Premium Increase as a Percentage of Premium	0.44%	0.44%	0.44%

Scenario Estimates

As discussed in Section 1, very little insurance data exists that can be used to directly estimate the costs of ABA benefits mandated by Senate Bill 301. This causes uncertainty in developing actuarial assumptions and cost estimates. Due to this uncertainty, it is useful to develop cost estimates for scenarios using optimistic and pessimistic assumptions.

Cost estimates are very sensitive to various assumptions, especially those related to ABA utilization and costs. Therefore, we varied our assumptions to develop estimated costs for ASD services under “Low,” “Middle,” and “High” cost scenarios, as shown in the table below:

Scenario	% Diagnosed Under Age 6 Starting ABA	Avg. Age 0-8 Annual ABA Program Cost	Avg. Age 9-12 Annual ABA Program Cost	Avg. Age 13-16 Annual ABA Program Cost	Avg. Annual non-ABA Cost (All Ages)	Annual Premium Increase Per Person	Premium Increase (% of Premium)
Low	40.0%	\$45,000	\$21,029	\$12,572	\$1,050	\$11.00	0.27%
Middle	50.0%	\$60,000	\$28,038	\$16,763	\$1,575	\$17.90	0.44%
High	66.7%	\$72,306	\$33,789	\$20,201	\$2,100	\$28.00	0.68%

Short-Term Cost Estimates by Scenario

In addition to the uncertainty associated with long-term cost estimates, how quickly costs could reach their ultimate level due to the limited supply of ABA therapists is also uncertain. We have provided the table below to illustrate the potential short-term increases in premiums, and how they could grade into the long-term estimates over time.

Estimated Increase in Premiums due to SB 301 by Year						
Scenario	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6 and Beyond
Low	0.09%	0.12%	0.16%	0.20%	0.23%	0.27%
Middle	0.22%	0.26%	0.31%	0.35%	0.39%	0.44%
High	0.46%	0.50%	0.55%	0.59%	0.64%	0.68%

Appendix 1

“Middle” Scenario Cost Assumptions - Illustrative Exhibits

EXHIBIT I - SUMMARY OF SENATE BILL 301 "MIDDLE" SCENARIO ASSUMPTIONS AND COSTS

State Connecticut

Mandate Market

Individual No
 Small Group Yes
 Large Group Yes
 Self-Insured (ERISA) No

Key Assumptions:

United States Prevalence		
Diagnostic Subtype	Ultimate Prevalence	Average Age of Diagnosis
Autistic Disorder	1 in 450	3
PDD-NOS	1 in 300	3
Asperger's	1 in 900	6
All ASD	1 in 150	

% of Diagnosed Children w/ ABA	
Age Group	Percentage
Under 6	50.0%
6	37.5%
7	25.0%
8	16.7%
9	11.1%
10	7.4%
11	4.9%
12	3.3%

Connecticut Prevalence Adjustment: 1.00

Connecticut Prevalence

Diagnostic Subtype	Ultimate Prevalence	Average Age of Diagnosis
Autistic Disorder	1 in 450	3
PDD-NOS	1 in 300	3
Asperger's	1 in 900	6
All ASD	1 in 150	

Additional Annual Medical Costs for Non ABA Services

All Ages \$ 1,575

Annual Limits by Covered Service

	Dollar Limit	Max \$s
ABA (Ages 0-8)	Yes	\$50,000
ABA (Ages 9-12)	Yes	\$35,000

Average cost of ABA Program:
 Ages 0-8 \$40,000
 Ages 9-12 \$18,888

Market
Individual
Small Group
Large Group
Self-Insured (ERISA)
Total

Coverage Estimates		
Number of Persons Covered	Premium (Per Person)	Total Premium
386,000	4,100	1,582,600,000
603,000	4,100	2,472,300,000
989,000	\$ 4,100	\$ 4,054,900,000

Costs Excluding Administrative Expense			Premium Increase including Admin @ 15%		
Costs	Costs (% of Premium)	Cost (Per Covered Person)	Incremental Premium	Premium Increase %	Annual Increase per Covered Person
3,898,600	0.25%	10.10	4,587,000	0.29%	11.90
6,090,300	0.25%	10.10	7,165,000	0.29%	11.90
\$ 9,988,900	0.25%	\$ 10.10	\$ 11,751,000	0.29%	\$ 11.90

Exhibit II - Treated Prevalence by Age

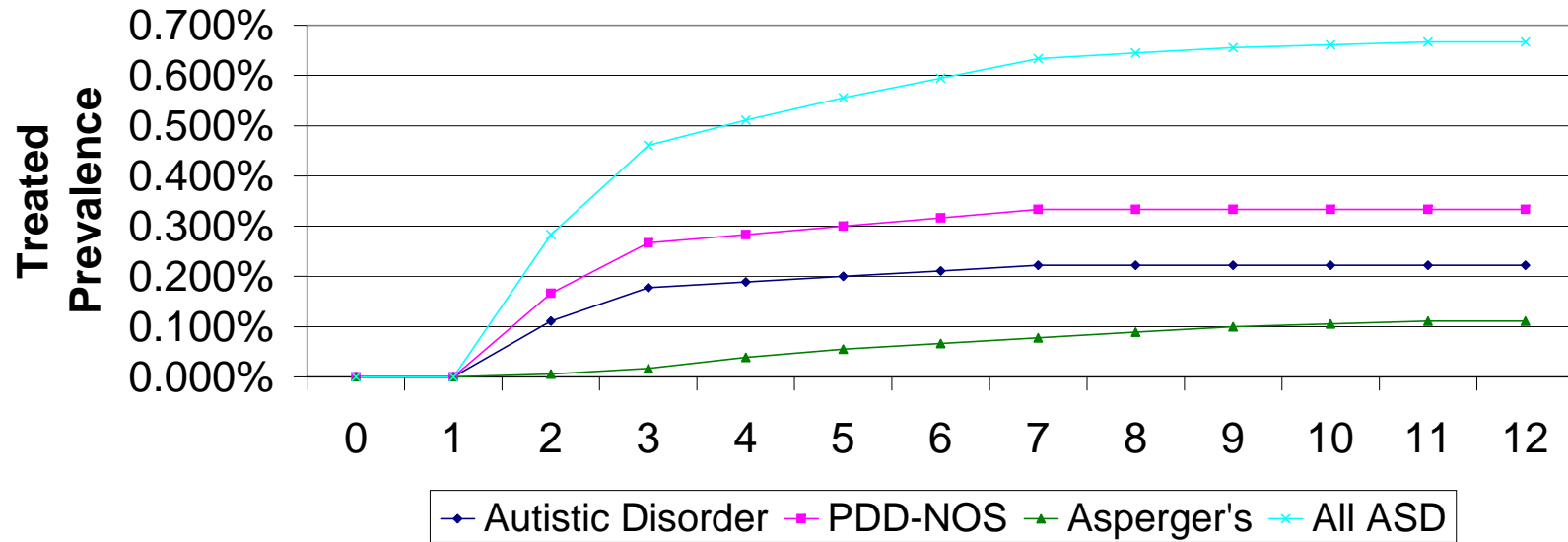


Exhibit III - Annual Cost Per Diagnosed/Treated Child

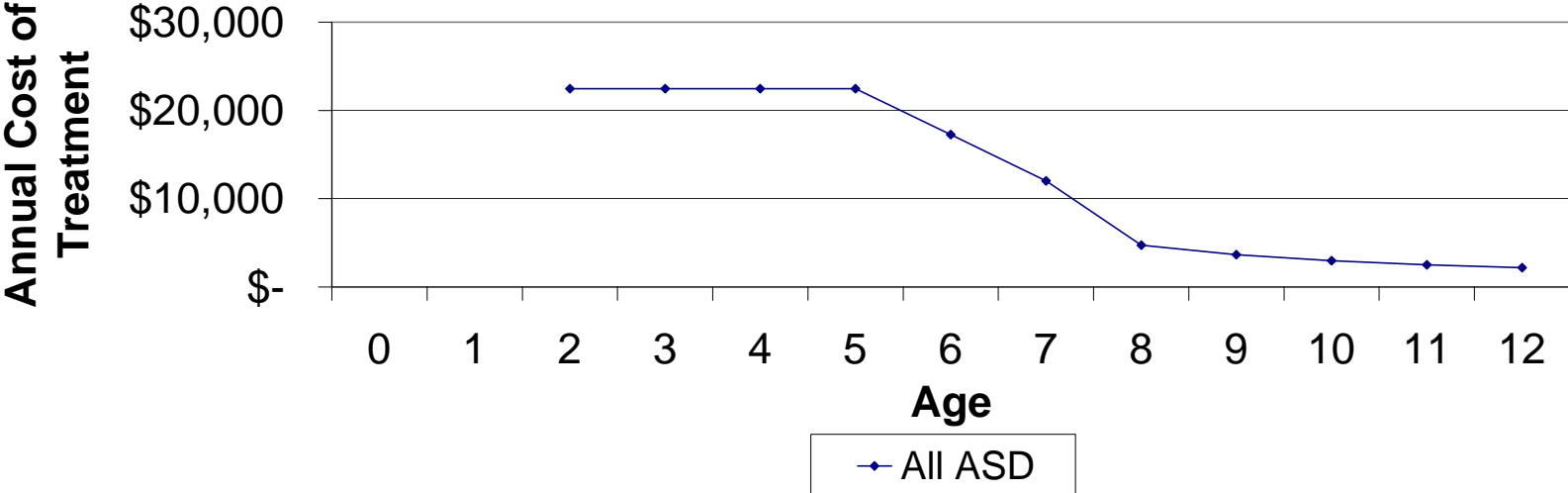


Exhibit IV - Annual Cost Per Autistic Child (Includes both Diagnosed and Undiagnosed Children)

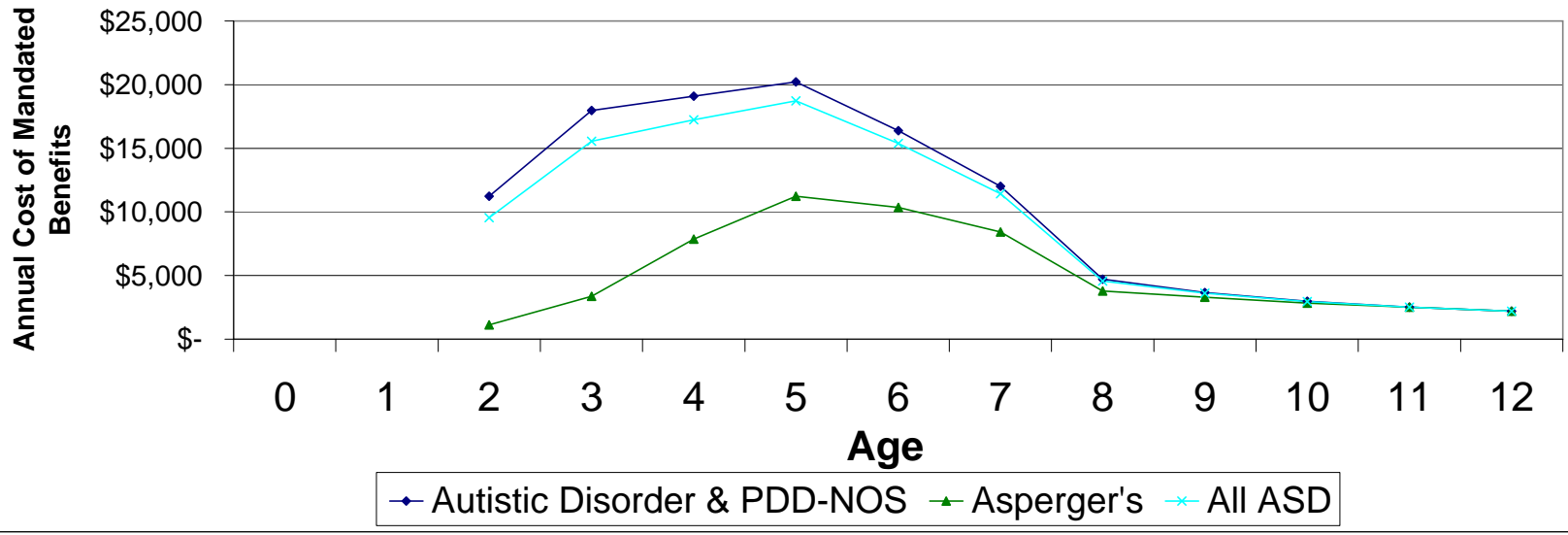


Exhibit V - ABA Utilization vs. Treated Prevalence

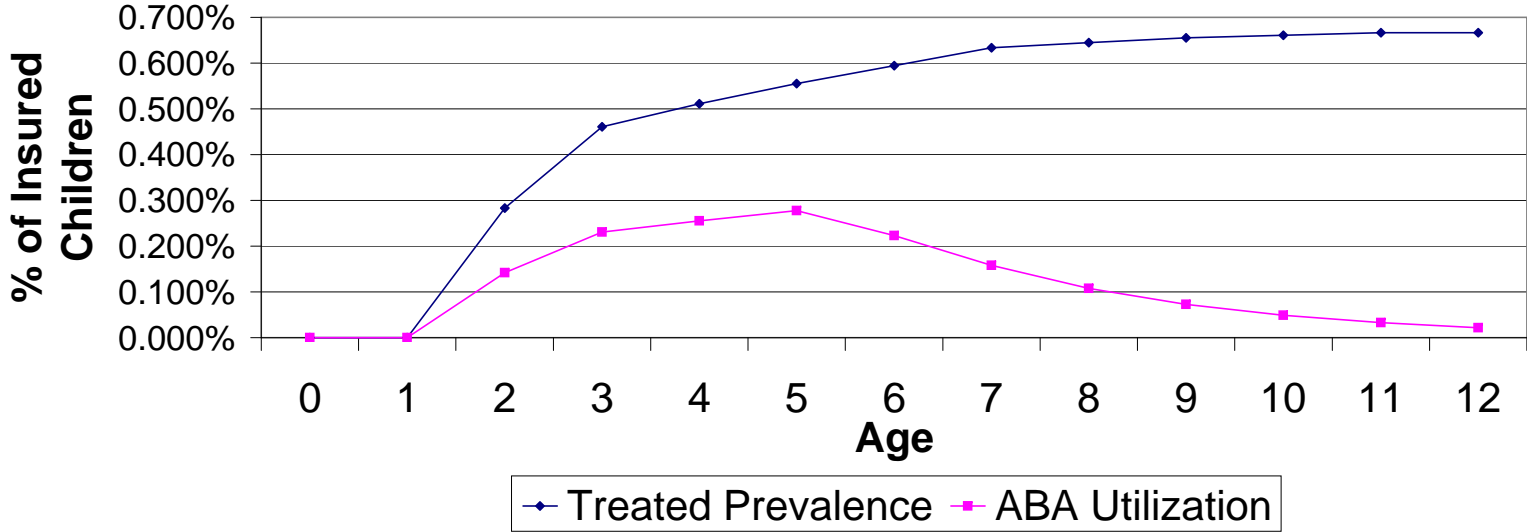
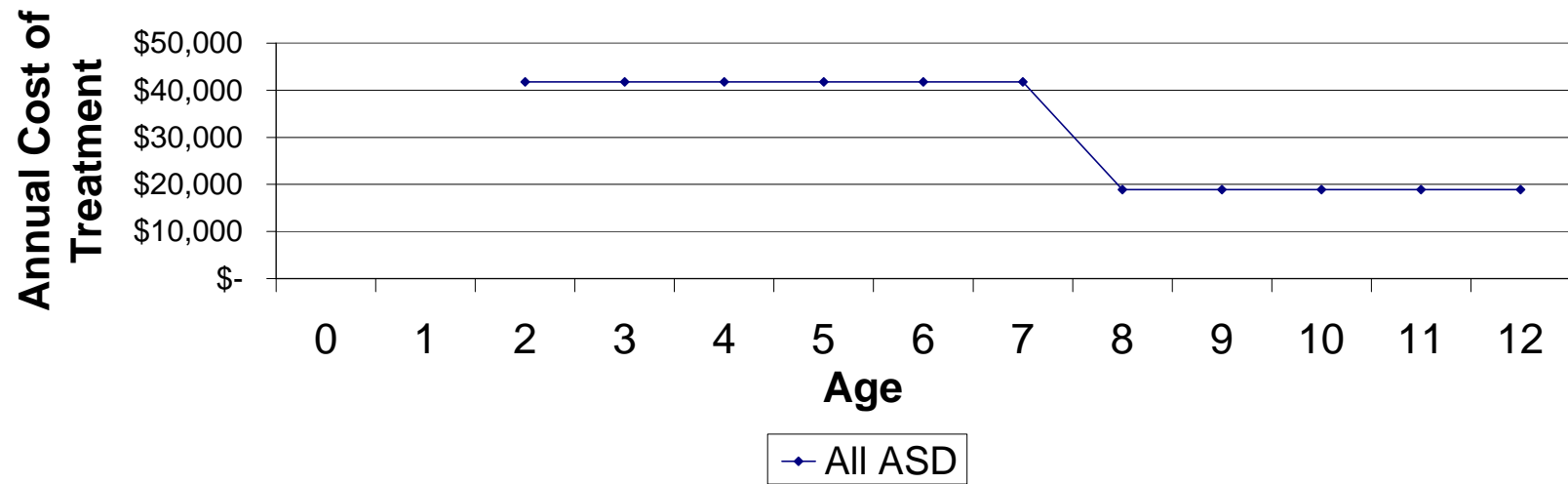


Exhibit VI - Annual Cost per Child With ABA Program



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