

March 4, 2011

Actuarial Cost Estimate: Alaska House Bill 79 and Senate Bill 74

An Act requiring insurance coverage for autism spectrum disorders, describing the method for establishing a covered treatment plan for those disorders, and defining the covered treatment for those disorders; and providing for an effective date

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Executive Summary

Oliver Wyman Actuarial Consulting, Inc. (Oliver Wyman) has been engaged by Autism Speaks to develop a cost model in order to analyze and estimate the impact of insurance benefits for autism spectrum disorders (ASD) under Alaska House Bill 79 and Senate Bill 74, which are identical bills that will be referred to as “HB 79 / SB 74” throughout this report.

The most significant class of treatments covered under HB 79 / SB 74 are behavioral health treatments, which are referred to as applied behavior analysis, or “ABA” throughout this document since ABA is one of the most common behavioral health treatments and the general approach and costs for ABA are assumed to be similar to those of other behavioral health treatments. The key provisions of HB 79 / SB 74 are explained further in Section 4 of this report.

Our analysis involved developing a robust model that reflects the likely behavior of consumers, providers and insurers of ABA services, and includes Alaska demographic and insurance market information. Key assumptions, including the treated prevalence of ASD, the age of diagnosis, ABA program utilization by age, ABA annual costs by age, and additional other (i.e., not ABA) medical costs, as well as the modeling methodology are explained in detail in Sections 5 and 6 of this report and summarized through graphs in the Appendix.

Our analysis included scenario testing to develop cost estimates under a range of assumptions. Our “Middle” estimate is that, in the long-term, costs would increase by about 0.39% of premiums and premiums would increase about 0.45% should HB 79 / SB 74 be enacted. Our estimated range of long-term premium increases is 0.28% to 0.68% based on our “Low” and “High” estimates.

We expect that premium increases would be lower in the years immediately following the passage of a law consistent with the provisions of HB 79 / SB 74, with first year cost increases in the range of 0.09% to 0.45% percent of premiums. Our expectation of lower first year costs is based on experiences in other states that have seen low initial costs when

ASD benefits are first covered. These lower costs can be expected due to the lags typically seen in accessing new benefits and the limited supply of ABA providers.

The estimated cost increases for our “Middle” scenario, along with some statistics for the individual, small, and large group markets, are shown in the table below.

Long-Term Cost Estimates - “Middle” Cost Scenario

	Market			
	Individual	Small Group	Large Group	All
Covered Persons	25,000	39,000	52,000	116,000
Average Premium per Person	\$2,800	\$5,500	\$4,700	\$4,559
Annual Claim Cost per Covered Person	\$17.60	\$17.60	\$17.60	\$17.60
Claim Cost as a Percentage of Premium	0.63%	0.32%	0.37%	0.39%
Estimated Premium Increase with Admin @ 15%	\$20.70	\$20.70	\$20.70	\$20.70
Premium Increase as a Percentage of Premium	0.74%	0.38%	0.44%	0.45%

For our scenario testing we varied the assumptions that drive cost estimates. The assumptions under the “Low,” “Middle,” and “High” scenarios and premium increase estimates are summarized in the table below.

Scenario	% Autistic Disorder Diagnosed Under Age 6 Starting ABA	Program Cost - Autistic Disorder (Ages 0-6)	Avg. Annual non-ABA Cost	Premium Increase per Covered	Premium Increase (% of Premium)
Low	50.0%	\$50,000	\$2,350	\$12.80	0.28%
Middle	65.0%	\$65,000	\$3,525	\$20.70	0.45%
High	80.0%	\$83,718	\$4,700	\$30.90	0.68%

While this analysis focused primarily on estimating the insured costs of covered medical benefits associated with HB 79 / SB 74, in Section 8 we summarize information related to the lifetime costs of ASD, which include the costs associated with medical services, education, custodial care and the lost productivity and wages of individuals affected by ASD, as well as their family caregivers.

Based on the results of several studies, we expect that the costs of ABA treatments covered under HB 79 / SB 74 could be recovered through reductions in educational and medical expenditures alone. We also expect that benefits associated with successful treatments would reduce future costs of caring for individuals with ASD, and improve both the productivity and the quality of life for individuals with ASD, as well as their family caregivers.

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Background

Oliver Wyman Actuarial Consulting, Inc. (Oliver Wyman) has been engaged by Autism Speaks to develop a cost model in order to analyze and estimate the impact of legislation providing for additional 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 of HB 79 / SB 74 on insurance premiums, which provides coverage for the diagnosis and treatment of autism spectrum disorders.

Oliver Wyman is a part of the Marsh & McLennan 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 fourteen 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 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 HB 79 / SB 74 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 incremental insured costs of the ASD benefits provided for in HB 79 / SB 74 and the associated premium impact on the individual, small group, and large group markets affected by HB 79 / SB 74. This analysis also identifies and partially quantifies identified offsetting cost savings associated with successful ASD treatment.

We note that cost estimates associated with autism coverage legislation have varied widely state to state based on state specific differences in legislation and the methods and assumptions used in estimating costs, though typically independent estimates show premium increases due to legislation covering additional autism benefits of less than 1%. A March 2009 report by The Council for Affordable Health Insurance (CAHI) states: “CAHI’s actuarial working team estimates that an autism mandate increases the cost of health insurance by about 1 percent.”¹ The reason for this variability is that the largest component of the increase in costs under HB 79 / SB 74 is due to the coverage of behavioral therapies, including applied behavior analysis (ABA), which is almost universally excluded from health coverage, and therefore very little mature 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 reflects the likely behavior of consumers, providers and insurers of ABA services in developing the assumptions underlying the cost estimates. Likewise, the additional costs for medical services other than ABA are uncertain. Insurance policies often cover some services for children diagnosed with an ASD, although the legislation could cause the insured costs for certain services to increase because ASD exclusions or limitations are common, and certain services that may have been initially denied or terminated following utilization review or benefit limitations might be covered due to HB 79 / SB 74.

¹ The Council for Affordable Health Insurance. “The Growing Trend Towards Autism Coverage.” March 2009.

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Description of Key HB 79 / SB 74 Provisions and their Impact on Covered Benefits

Insurance Markets Covered by HB 79 / SB 74

The Bills state: *“Except for a fraternal benefit society, a health care insurer that offers, issues for delivery, delivers, or renews a health care insurance plan in this state shall provide coverage for the costs of the diagnosis and treatment of autism spectrum disorders.”*

In our modeling we are assuming that this means that HB 79 / SB 74 applies to health insurance contracts in the individual, small group, and large group markets.

Covered Benefits

HB 79 / SB 74 provides for the diagnosis and treatment for autism spectrum disorders, where covered services are outlined in the following language:

“Covered treatment may include medically necessary pharmacy care, psychiatric care, psychological care, habilitative or rehabilitative care, and therapeutic care.”

“‘habilitative or rehabilitative care’ means professional counseling, guidance services, and treatment programs, including applied behavior analysis or other structured behavioral therapies necessary to develop, restore, and maintain the functioning of an individual to the maximum extent practicable; in this paragraph, ‘applied behavior analysis’ means the design, implementation, and evaluation of environmental modifications, using behavioral stimuli and consequences, including direct observation, measurement, and functional analysis of the relationship between environment and behavior, to produce socially significant improvement in human behavior or to prevent the loss of an attained skill or function”

The inclusion of applied behavior analysis (ABA), and other behavioral therapies is especially important, and the coverage of these types of programs has the most significant impact on the cost of covered benefits under HB 79 / SB 74.

ABA may include 30-40 hours of therapy a week, though many programs would not utilize that level of resources. Key assumptions underlying our ABA cost estimates which also consider costs of other intensive programs are outlined in Section 6.

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Modeling Methodology

The following discussion outlines the general modeling methodology used to develop our cost estimates. Estimates were developed both on a per covered person per year basis and as a percentage of average annual premiums, as shown in Section 7. Details of key assumptions are discussed in Section 6 and illustrated graphically in the exhibits shown in the Appendix.

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 diagnosed prevalence estimates. We would expect that it would take a minimum of several years for both the supply of providers to meet the demand for ASD services and for parents of autistic children to aggressively seek treatment of their children's disorders.

In spite of these real limitations that will likely limit short-term costs associated with autism benefits covered due to HB 79 / SB 74, we feel that it is appropriate from a public policy perspective to look at the costs over a longer term 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 the following discussion outlining our cost estimates, we have included illustrative exhibits showing the possible progression of costs for additional covered 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.

Emerging Cost Experience for Autism Coverage

While actual cost experience is limited, there have been some examples of emerging experience reported in various forums that are indicative of the costs of autism insurance laws being modest. These examples of emerging experience are not inconsistent with the cost estimates in this report.

South Carolina State Health Plan – Calendar year 2010 costs of approximately \$2 million for 350,000 to 390,000 members. This represents an increase of about 0.1% to 0.2% in medical costs.²

The Ohio State University³

Percentage of Claim Cost Experienced by OSU Managed Health Care Systems Inc. (MHCS) for Autism Treatment:

2006	0.15%
2007	0.15%
2008	0.12%

Aetna Texas- Comments to press indicated increased costs equal to approximately 0.1% of premium in the year after the Texas autism law was enacted. Aetna noted in December 2008 that it had tracked the cost of the autism coverage legislation 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 policyholders 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 legislation might change after the first year.⁴ While this is only first year experience for a single insurer, it illustrates that initial costs after the passage of autism insurance legislation are likely low. Aetna's Texas block of business is quite large (approximately \$1.5 - 2.0 billion in premium⁵), so the statistics provided indicate a cost of less than 0.1% of premium.

² APS Healthcare South Carolina state employees' plan experience.

³ Robert Meier Ohio legislature testimony submitted March 17, 2009.

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

⁵ NAIC Annual Statements for 2007.

General Modeling Process

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

1. A treated prevalence estimate for Alaska was developed based on the Center for Disease Control and Prevention's (CDC) Mortality and Morbidity Weekly Report (MMWR) on autism prevalence dated December 18, 2009.
2. Prevalence rates by diagnostic subtype (Autistic Disorder, PDD-NOS, and Asperger's Syndrome) were estimated separately, since diagnosis patterns and service utilization could reasonably be expected to vary by how severely affected an individual with ASD is and 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 statistics.⁶
4. The percentage of diagnosed children who could be expected to have an ABA program was estimated for each age based on assumptions regarding the percentage of children that would start a program and typical program continuance.
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.
7. Non-ABA costs were estimated based upon studies of medical costs for children diagnosed with ASD, and the potential increase in costs that could be expected due to HB 79 / SB 74 benefits.
8. Based on Census demographic data and the cost estimates associated with HB 79 / SB 74's coverage of ASD services by age as outlined in 1-7 above, an annual cost per covered person 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 Alaska, and Kaiser Family Foundation coverage data. These assumptions are further explained and documented in Section 6.
11. The incremental costs of the ASD 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.

⁶ IAN database. <http://dashboard.ianexchange.org/StateStatsAdvanced.aspx?A1=OR&ADU=T>. Accessed January 2011.

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Summary of Key Assumptions

Key assumptions underlying the cost estimates for the proposed HB 79 / SB 74 covered 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

The December 18, 2009 CDC MMWR⁷ report included the following information related to the prevalence of ASD:

- 1. Children aged 8 years with a notation of an ASD or descriptions consistent with an ASD were identified through screening and abstraction of existing health and education records containing professional assessments of the child’s developmental progress at health-care or education facilities. Children aged 8 years whose parent(s) or legal guardian(s) resided in the respective areas in 2006 met the case definition for an ASD if their records documented behaviors consistent with the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, text revision (DSM-IV-TR) criteria for autistic disorder, pervasive developmental disorder–not otherwise specified (PDD NOS), or Asperger disorder. Presence of an identified ASD was determined through a review of data abstracted from developmental evaluation records by trained clinician reviewers.⁸*
- 2. In 2006, the overall identified ASD prevalence per 1,000 children aged 8 years varied across ADDM sites ... The average across all 11 sites was 9.0 (CI = 8.6–9.3) per 1,000 children.⁹ A prevalence rate of 9 per 1,000 is approximately 1 in 110.*

⁷ Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report. December 18, 2009. <http://www.cdc.gov/mmwr/PDF/ss/ss5810.pdf>. Accessed February 2011.

⁸ Ibid, p. 1.

⁹ Ibid, p. 7.

3. *In general, estimated ASD prevalence was lower in ADDM sites that relied solely on health sources to identify cases (mean: 7.5 per 1,000 population; CI = 7.0 – 7.9) compared with sites that also had access to education sources.¹⁰*
4. *Among all children meeting the ADDM ASD surveillance case definition, approximately 77% had a documented ASD classification in their records.¹¹*
5. *All children initially identified for screening were first stratified by two factors highly associated with final case status: information source (education only, health only, or both types of sources) and the presence or absence of either an ASD ICD-9 code (299.0 or 299.8) or an autism special education eligibility. The potential number of cases missed because of missing records, and the impact on prevalence, was estimated on the assumption that within each of the strata, the proportion of children with missing records who ultimately would be confirmed as having ASD cases would have been similar to that of children for whom no records were missing.¹²*

In estimating treated prevalence, which drives medical services utilization and costs, we used the population prevalence as a starting point, and then made adjustments based on details in the MMWR study which would indicate that treated prevalence could be expected to be lower than population prevalence. Treated prevalence rates would be expected to be lower than population prevalence rates for several reasons:

1. As noted in 4. above, approximately 77% of children meeting the ADDM ASD surveillance case definition had documented ASD classification in their records. Without a documented ASD diagnosis, it is not likely that someone would receive treatments for ASD covered by insurance. Note 77% of the 9.0/1,000 population prevalence means a documented diagnosis prevalence rate of approximately 1 in 144.
2. There is a reasonable expectation that covered medical ASD services would be supported by documentation in health records. Based on a review of health records only, the population prevalence of ASD is approximately 7.5/1,000, or 1 in 133.
3. The CDC methodology assumed that where records and information were missing, the proportion of children with missing records who ultimately would be confirmed as having ASD would have been similar to that of children for whom no records were missing. There is a reasonable likelihood that records would be less likely to be missing for children with documented ASD diagnoses who would seek treatment.
4. With ASD, as with any other disease or disorder, there will be some subset of the diagnosed population that will not seek treatment for any number of reasons.

Based on our analysis of the CDC report, including the key items from the report noted above, a reasonable assumption for the treated prevalence of ASD is 1 in 150.

¹⁰ Ibid, p. 7.

¹¹ Ibid, p. 9.

¹² Ibid, p.7.

Prevalence by diagnostic subtype was estimated based on an academic study published in the American Journal of Psychiatry.¹³ 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 Alaska are shown below:

<u>Alaska Treated 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	

The average age of diagnosis stated in the 2009 CDC MMWR report is 53 months,¹⁴ which is higher than the average age used in our cost modeling of about 42 months. We believe that this difference is reasonable and explainable in that we are using parent reported data that is likely provided by the same parents who would most likely utilize insured benefits. Note, a lower age of diagnosis results in higher cost estimates, all other things being equal.

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 may have difficulty accessing a provider. We also note that the most severely affected children with the diagnostic subtype of Autistic Disorder will be more likely to have behavioral programs than those with PDD-NOS or Asperger's and will also, on the whole, have more intensive programs.

For this reason, we have assumed that 50% to 80% of children with Autistic Disorder (50% for "Low" scenario, 65% for "Middle" and 80% for "High") diagnosed under age six 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. As noted later, we make an adjustment to reflect lower cost estimates for PDD-NOS and Asperger's. Implicit in that adjustment is an expectation of lower ABA utilization for these two diagnostic subtypes.

¹³ Fombonne, E. and S. Chakrabarti. American Journal of Psychiatry. June 2005.

¹⁴ Centers for Disease Control and Prevention. Morbidity and Mortality Weekly Report. December 18, 2009. p. 9.

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 olds¹⁵, which is 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 by the time they reach their teenage years. Programs would be expected to terminate if a child has experienced sufficient progress such that a program is no longer necessary or if the insurer or family sees no progress, as well as for other reasons.

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

% of Diagnosed Children with Autistic Disorder with ABA	
Under 6	65.0%
6	48.8%
7	32.5%
8	21.7%
9	14.4%
10	9.6%
11	6.4%
12	4.3%
13 to 21	3.3%

ABA Program Annual Number of Hours

In developing the assumed annual ABA program hours, we discussed typical ABA programming with ABA providers, and reviewed benefit materials from one of the large self-insured employer who offers ABA benefits.¹⁶ We developed a distribution of expected hours for a child with Autistic Disorder that resulted in the annual averages shown in the following table:

¹⁵ 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.

¹⁶ Autism Therapy Reference- Microsoft Corporation (administered by Premera Blue Cross).

**Average Annual ABA Program Hours
for a child with Autistic Disorder**

Ages Under 8	1,500
Ages 8 to 12	671
Ages 13 to 21	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. It 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 Alaska, based on Bureau of Labor Statistics¹⁷ health care wage data. The resulting average cost per hour of ABA therapy in Alaska is about \$56 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 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. Costs will vary, as well, depending upon the degree of care management employed by a given payer.

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 for a child with Autistic Disorder being treated with an intensive ABA program as follows:

“Low” cost scenario - assumes average ABA program cost is \$50,000 per year.

“Middle” cost scenario - assumes average ABA program cost is \$65,500 per year.

“High” cost scenario - based on the assumptions outlined in this section for the continuance of ABA programming, 1,500 annual hours for ABA programming for children younger than age 8, and an hourly rate of slightly under \$56, the calculated average annual cost for an ABA program for all ages is \$83,718.

After developing cost estimates for ABA for children diagnosed with Autistic Disorder, we assumed that for children diagnosed with PDD-NOS or Asperger’s, ABA costs would be one-third of the Autistic Disorder costs. The basis for this adjustment is that children with these two diagnoses can be expected to utilize ABA programs at a significantly lower rate than those with Autistic Disorder, and have less intensive programs (i.e., programs with fewer weekly and annual therapy hours). The one-third factor applied to overall costs reflects the combination of lower utilization and fewer therapy hours.

¹⁷ BLS wage data. <http://www.bls.gov/guide/geography/wages.htm>. Accessed January 2011.

Other (than ABA) Medical Costs

Based on several studies¹⁸, 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 under HB 79 / SB 74 some services that an insurer could currently deny or exclude would now be covered. In our range of estimates, we assumed that this additional coverage would result in increased insured medical costs of 50% to 100% of the current level of estimated covered non-inpatient costs for services to all children diagnosed with an ASD, which we assumed are currently three times higher than the population costs in the absence of the benefits under HB 79 / SB 74 for children/dependents under age 21 diagnosed with an ASD.

The estimated annual cost for additional non-ABA services (note many non-ABA medical services are already provided to individuals with ASD) that would be covered as a result of HB 79 / SB 74 are shown for each scenario in the table below:

Scenario	Non-ABA Costs
Low	\$2,350
Middle	\$3,525
High	\$4,700

(Amounts in 2011 dollars)

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.

Alaska 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, insured large group, and self-insured markets. State-specific premium data for Alaska was available for 2009¹⁹, so we trended this data based on average recent employer premium increases provided in the Kaiser Family Foundation HRET²⁰ survey to estimate the 2011 average annual premium per member necessary to compute the cost of HB 79 / SB 74 benefits as a percentage of annual premiums.

To estimate average premiums for the individual market, we reviewed the 2009 individual premium and membership experience found in the regulatory filings for insurers in Alaska.

¹⁸ Mandell, Cao, Ittenbach, & Pinto-Martin, 2006. Croen, Najjar, Ray, Lotspeich, & Bernal, 2006. Liptak, Stuart, & Auinger, 2006.

¹⁹ MEPS state survey data. http://www.meps.ahrq.gov/mepsweb/data_stats/state_tables.jsp?regionid=-1&year=2009. Accessed January 2011.

²⁰ Kaiser Family Foundation and Health Research Educational Trust. Employer Health Benefits- 2010 Annual Survey.

We calculated the average individual premium for 2009 in Alaska, and again trended this amount to estimate 2011 premiums.

As part of our development of premiums and membership estimates, we completed reasonableness tests by reviewing Alaska insurer regulatory filings to ensure that the premium estimates were not unreasonable.

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Cost Estimates

Long-Term Cost Estimates - “Middle” Cost Scenario

The table below summarizes our “Middle” scenario average annual cost estimates and premium increases on a per covered person basis, and as a percentage of the annual premiums. Our “Middle” estimate is that, in the long-term, the premium increase associated with the additional benefits provided by HB 79 / SB 74 would be about 0.45% of insured premiums across all markets. However, we expect that costs would be lower in the years immediately following the passage of HB 79 / SB 74 based on experiences in other states that have passed legislation providing for the coverage of additional ASD benefits, lags typically seen in accessing new benefits, and the limited supply of ABA providers.

The estimated cost increases by market are shown in the table below. The annual claim cost per covered person estimate of \$17.60 and premium increase estimate of \$20.70 are in 2011 dollars.

	Market			
	Individual	Small Group	Large Group	All
Covered Persons	25,000	39,000	52,000	116,000
Average Premium per Person	\$2,800	\$5,500	\$4,700	\$4,559
Annual Claim Cost per Covered Person	\$17.60	\$17.60	\$17.60	\$17.60
Claim Cost as a Percentage of Premium	0.63%	0.32%	0.37%	0.39%
Estimated Premium Increase with Admin @ 15%	\$20.70	\$20.70	\$20.70	\$20.70
Premium Increase as a Percentage of Premium	0.74%	0.38%	0.44%	0.45%

We expect that state government programs covering state employees would have claims costs and claims cost increases comparable to insured large groups.

Scenario Estimates

As discussed in Section 3, limited insurance data exists that can be used to directly estimate the costs of ABA benefits under HB 79 / SB 74. 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	% Autistic Disorder Diagnosed Under Age 6 Starting ABA	Program Cost - Autistic Disorder (Ages 0-6)	Avg. Annual non-ABA Cost	Premium Increase per Covered	Premium Increase (% of Premium)
Low	50.0%	\$50,000	\$2,350	\$12.80	0.28%
Middle	65.0%	\$65,000	\$3,525	\$20.70	0.45%
High	80.0%	\$83,718	\$4,700	\$30.90	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 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 HB 79 / SB 74						
Scenario	Year 1	Year 2	Year 3	Year 4	Year 5	Years 6 and Beyond
Low	0.09%	0.13%	0.17%	0.21%	0.24%	0.28%
Middle	0.23%	0.27%	0.32%	0.36%	0.41%	0.45%
High	0.45%	0.50%	0.54%	0.59%	0.63%	0.68%

Individual Market Comment

Completing an assessment of the potential for anti-selection to increase premium rates in the individual market under HB 79 / SB 74 is complicated for several reasons. Notably, the recent passage of Federal health care reform legislation has guaranteed issue provisions that would impact the coverage of individuals with ASD in the individual market. Therefore, a detailed analysis of the individual market is complicated by several matters, and is beyond the scope of this review.

8

Cost – Benefit Analysis for ASD Treatments

There have been several studies related to the efficacy of ABA treatment programs, and the costs associated with ASD treatments, care, and supports. In this section, we summarize some of these studies.

Societal Costs of Autism- Ganz Report

One of the most often cited reports explaining the financial costs of ASD is *The Lifetime Distribution of the Incremental Societal Costs of Autism* by Michael Ganz, MS, PhD which was published in 2007. This report summarized the modeled costs of a hypothetical cohort of children born in 2000 and diagnosed with autism in 2003. A study result is that the incremental societal cost of autism is \$3.2 million per capita in 2003 dollars.²¹ The report is very helpful in identifying specific costs of ASD, and in providing a framework for quantifying these costs, as well as providing actual cost estimates.

Direct Medical

- Physician and Dental
- Drugs
- Complementary and Alternative Therapies
- Behavioral Therapies
- Emergency and Hospital
- Home Health Care
- Travel

²¹ Ganz, Michael L. *The Lifetime Distribution of the Incremental Societal Costs of Autism*. Archives of Pediatrics & Adolescent Medicine. April 2007. Volume 161.

Direct Nonmedical

- Child Care
- Adult Care
- Respite Care
- Home Improvements
- Special Education
- Supported Work
- Other

Indirect

- Own Indirect- lost productivity and lower wages
- Not Own Indirect - lost productivity and lower wages of others (typically family)

Cost Savings to State and Local Governments

The Ganz study is probably the most comprehensive in terms of assessing the breadth of the financial costs associated with caring for individuals with ASD. Several other studies have attempted more limited quantifications of costs and savings to governments associated with providing early intensive behavioral interventions (EIBI) or ABA programs for young children. In summary, the studies quantify the costs of EIBI, assume success rates associated with EIBI based on efficacy studies, and then assume cost savings to educational and other government financed programs, like Medicaid, associated with these treatments.

Virginia’s independent Joint Legislative Audit and Review Commission (JLARC) issued a report in August 2009: *Report of the Joint Legislative Audit and Review Commission To the Governor and The General Assembly of Virginia - Assessment of Services For Virginians With Autism Spectrum Disorders*. As part of this report, JLARC reviewed several studies related to the efficacy of EIBI, and potential cost savings to State and Local governments associated with effective EIBI treatments. The JLARC report outlines their assessment of the cost savings associated with EIBI as follows²²:

“A study published in a national journal found that Pennsylvania could save an average of \$187,000 to \$203,000 on each child who received three years of EIBI relative to one who received special education services until age 22. The Pennsylvania study also suggested that cost savings would likely continue to accrue after children exit the school system. The study found that the state could save from \$656,000 to \$1.1 million per child if expenditures up to age 55 are included. Another study published in a national journal found that Texas could save an average of \$208,500 in education costs for each student who received three years of EIBI relative to a student who received 18 years of special education from ages four to 22. Applied to the estimated 10,000 children with ASDs in Texas, it was estimated that the state could save almost \$2.1 billion by implementing intensive treatment programs.

By applying the methodology used in the Pennsylvania and Texas studies to Virginia-related data, JLARC staff estimate that the Commonwealth could save approximately \$137,400 in special education costs per student with an ASD if EIBI was consistently provided. In fact, the analysis

²² Report of the Joint Legislative Audit and Review Commission To the Governor and The General Assembly of Virginia - Assessment of Services For Virginians With Autism Spectrum Disorders, p. 15. <http://jlarc.virginia.gov/reports/Rpt388.pdf>. Accessed December 2009.

indicates that Virginia could realize savings as long as at least 42 percent of students with ASDs who received EIBI make moderate improvements (require less intensive services and fewer supports), which is a substantially more conservative outcome than the outcomes reported in the research literature.”

The actual success rates of EIBI treatments will drive the benefits derived from these treatments. Also, as noted in the JLARC report, moderate improvements in functioning could also lead to significant financial savings. The JLARC report also discusses various studies of the efficacy of EIBI and Table 3 on page 15 of the report summarizes the findings on the efficacy of EIBI of three research studies. This table is reproduced below:

Table 3: Multiple Studies Demonstrate Children Who Receive Intensive Treatment Fare Better Than Those Who Receive Less Intensive Services

Group	Outcomes	
	Average Change in IQ Points	Educational Placement
<i>EIBI compared to less intensive public school special education (2006 study)</i>		
Treatment	+25	<ul style="list-style-type: none"> 29% in general class without supports 52% in general class with supports
Comparison	+14	<ul style="list-style-type: none"> 5% in general class
<i>EIBI compared to less intensive parent-training model (2000 study)</i>		
Treatment	+16	<ul style="list-style-type: none"> 27% in general class without supports
Comparison	-1	<ul style="list-style-type: none"> No children in general class without supports
<i>EIBI compared to less intensive treatment (1987 study)</i>		
Treatment	<ul style="list-style-type: none"> 47% achieved IQ in normal range (94-120) 	<ul style="list-style-type: none"> 47% in general class without supports 42% in less intensive special education class for language delayed 11% in intensive special education class for children with autism or intellectual disability (ID)
Comparison	<ul style="list-style-type: none"> 2% achieved IQ in normal range 	<ul style="list-style-type: none"> 2% in general class without supports 45% in less intensive special education class for language delayed 53% in intensive special education class for children with autism or ID

Note: A more detailed table on the results of these studies can be found in Appendix C.

While a complete cost-benefit analysis is beyond the scope of this review, under the assumption that the costs of ASD services and efficacy of EIBI are in line with those indicated in the studies noted, we expect that the costs of ABA treatments covered under HB 79 / SB 74 could be recovered through reductions in educational and medical expenditures, alone.

We also expect that benefits associated with successful treatments would be realized in the areas noted in the beginning of this section through reducing other costs of care and improving the productivity of individuals with ASD and their caregivers, in addition to non-economic or quality of life benefits.

Appendix

Cost Assumptions – Illustrative Exhibits and
HB 79 / SB 74 Text

EXHIBIT I - SUMMARY OF House Bill 79/Senate Bill 74 "MIDDLE" SCENARIO ASSUMPTIONS AND COSTS

<u>State</u>	Alaska				<u>Key Assumptions:</u>	<u>United States Treated Prevalence</u>		<u>% of Diagnosed Children with Autistic Disorder with ABA</u>		
					<u>Diagnostic Subtype</u>	<u>Ultimate Prevalence</u>	<u>Average Age of Diagnosis</u>			
					Autistic Disorder	1 in 450	3	Under 6	65.0%	
					PDD-NOS	1 in 300	3	6	48.8%	
					Asperger's	1 in 900	6	7	32.5%	
					All ASD	1 in 150		8	21.7%	
								9	14.4%	
								10	9.6%	
								11	6.4%	
								12	4.3%	
								13 to 21	3.3%	
<u>Age Limits for Autism Benefits</u>					<u>Alaska Treated Prevalence</u>	<u>Diagnostic Subtype</u>	<u>Ultimate Prevalence</u>	<u>Average Age of Diagnosis</u>	<u>Average Annual ABA Program Hours for a child with Autistic Disorder</u>	
Minimum	None					Autistic Disorder	1 in 450	3	Ages Under 8	1,500
Maximum	20					PDD-NOS	1 in 300	3	Ages 8 to 12	671
						Asperger's	1 in 900	6	Ages 13 to 21	401
						All ASD	1 in 150			
<u>Additional Annual Medical Costs for Non ABA Services</u>										
Up to age 21	\$	3,525	per person w/ ASD							
<u>Annual Limits by Covered Service</u>										
	<u>Hours Limit</u>	<u>Max Hours</u>	<u>Dollar Limit</u>	<u>Max \$s</u>						
ABA	No	-	No	No Cap						
				</						

Exhibit II - Treated Prevalence by Age

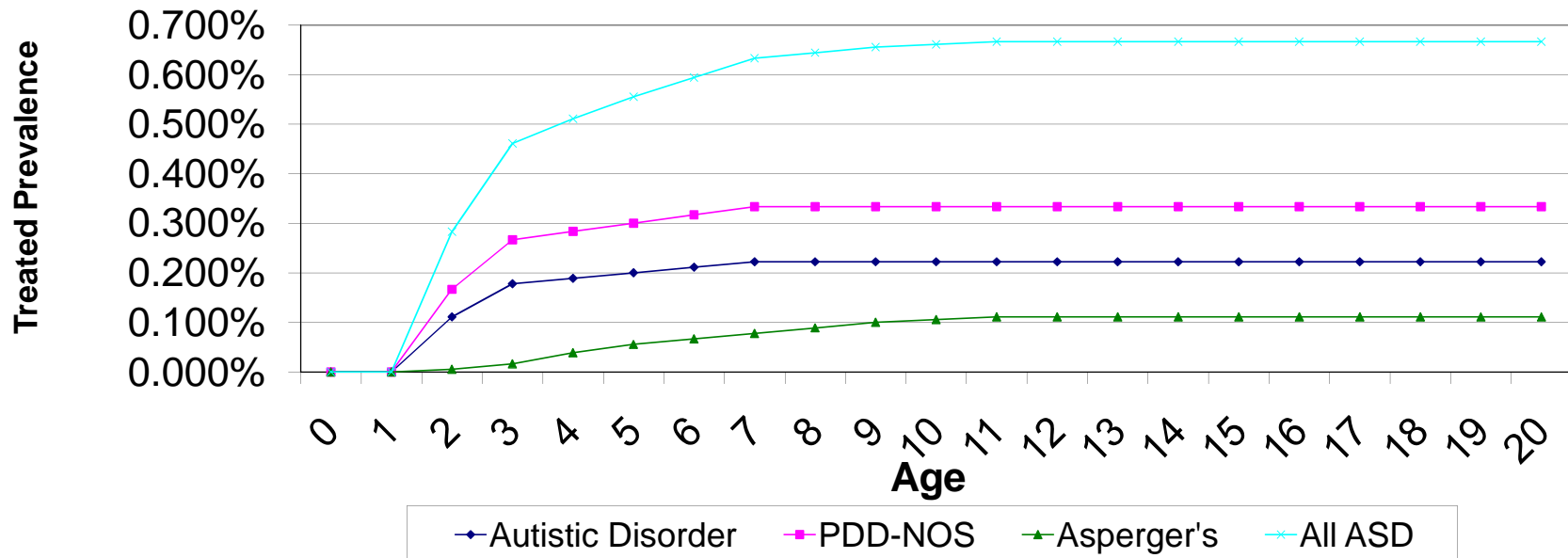


Exhibit III - Annual Cost Per Diagnosed/Treated Child

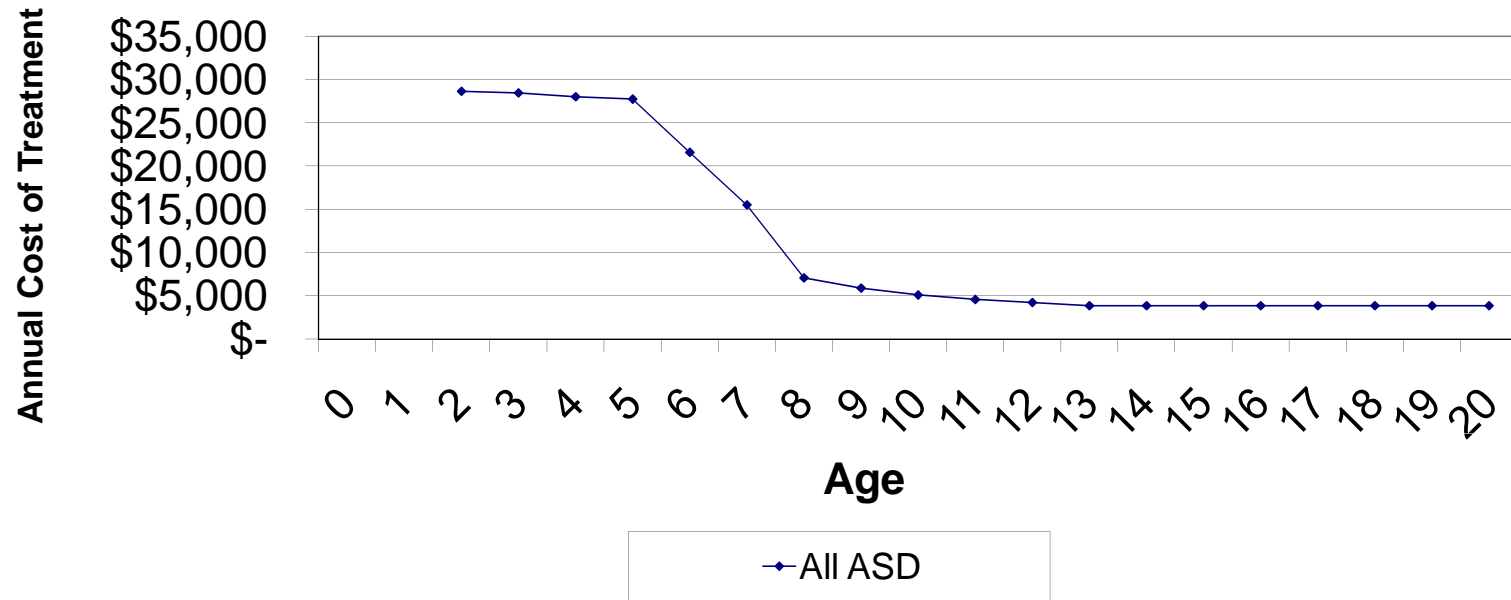


Exhibit IV - Annual Cost Per Autistic Child

(Includes both Diagnosed and Undiagnosed Children)

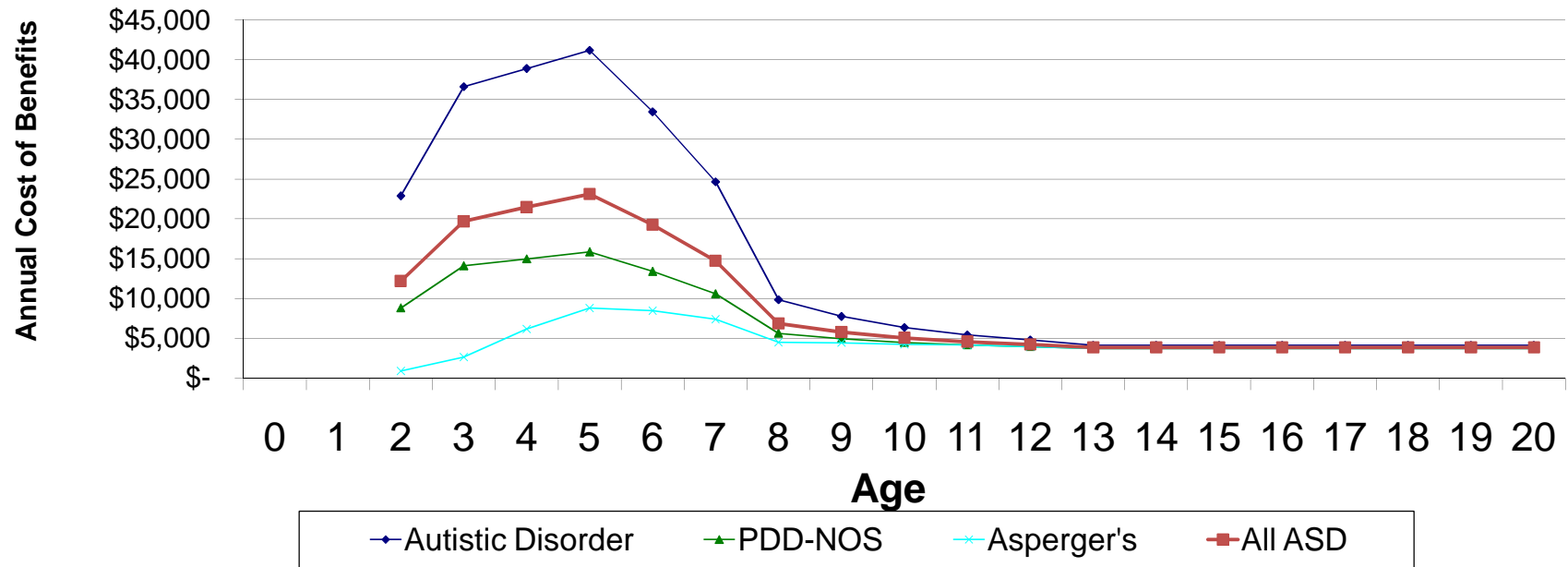


Exhibit V - ABA Utilization vs. Treated Prevalence

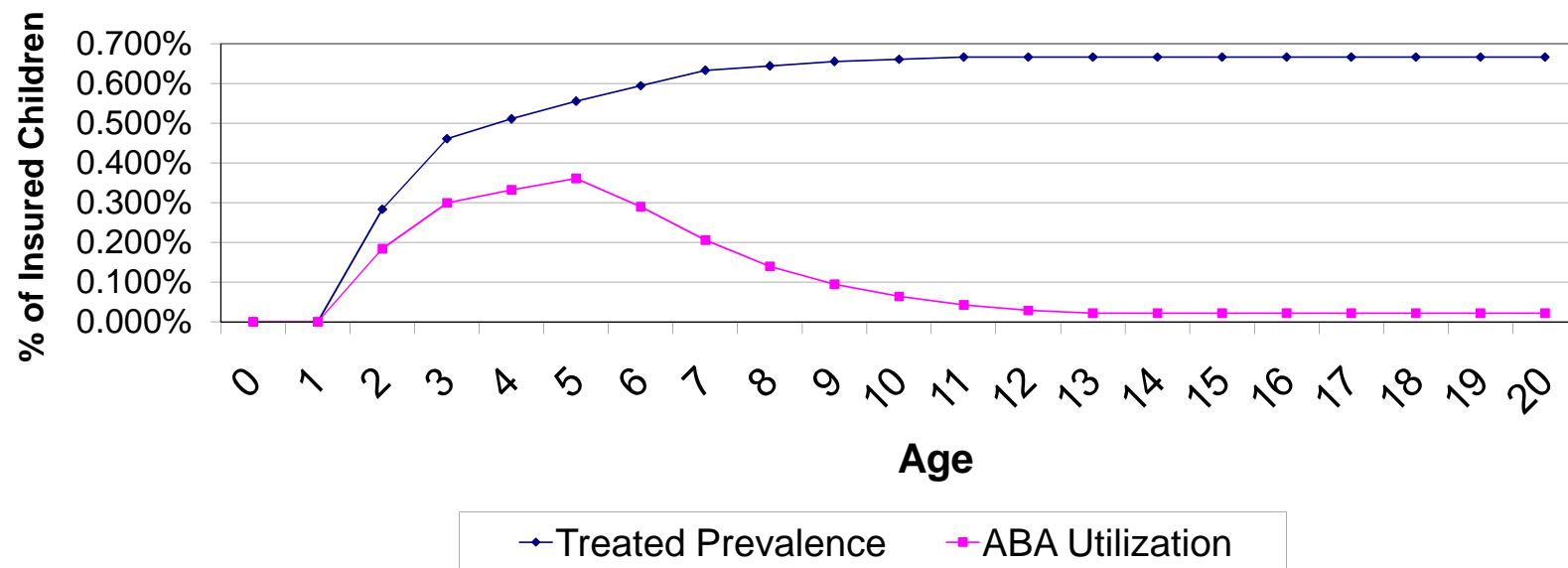
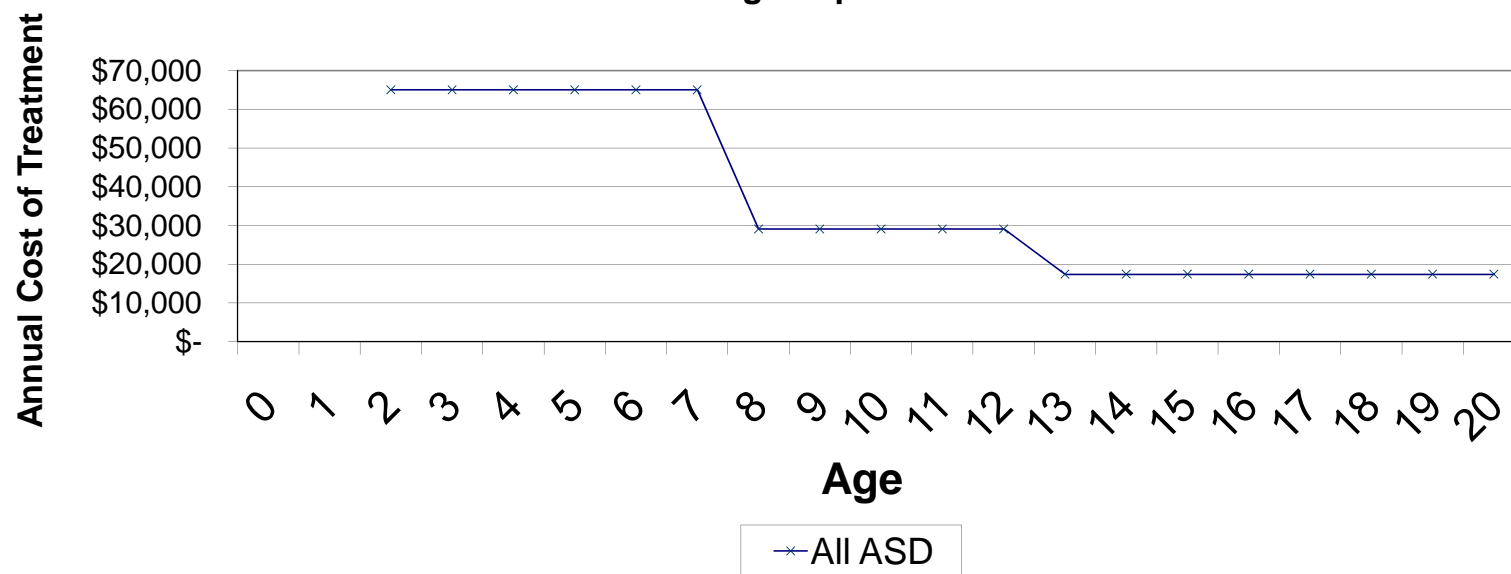


Exhibit VI - Annual Cost of ABA Program per Child with Autistic Disorder



HOUSE BILL NO. 79

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SEVENTH LEGISLATURE - FIRST SESSION

BY REPRESENTATIVES PETERSEN AND KAWASAKI, Gruenberg, Gara, Kerttula, Holmes

Introduced: 1/18/11

Referred: Health and Social Services, Labor and Commerce

A BILL

FOR AN ACT ENTITLED

1 **"An Act requiring insurance coverage for autism spectrum disorders, describing the**
2 **method for establishing a covered treatment plan for those disorders, and defining the**
3 **covered treatment for those disorders; and providing for an effective date."**

4 **BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:**

5 *** Section 1.** AS 21.42 is amended by adding a new section to read:

6 **Sec. 21.42.397. Coverage for autism spectrum disorders.** (a) Except for a
7 fraternal benefit society, a health care insurer that offers, issues for delivery, delivers,
8 or renews a health care insurance plan in this state shall provide coverage for the costs
9 of the diagnosis and treatment of autism spectrum disorders. Coverage required by this
10 subsection must include treatment prescribed by a licensed physician or psychologist,
11 provided by or supervised by an autism service provider, and as identified in a
12 treatment plan developed following a comprehensive evaluation. Covered treatment
13 may include medically necessary pharmacy care, psychiatric care, psychological care,
14 habilitative or rehabilitative care, and therapeutic care. In this subsection,

(1) "habilitative or rehabilitative care" means professional counseling, guidance services, and treatment programs, including applied behavior analysis or other structured behavioral therapies necessary to develop, restore, and maintain the functioning of an individual to the maximum extent practicable; in this paragraph, "applied behavior analysis" means the design, implementation, and evaluation of environmental modifications, using behavioral stimuli and consequences, including direct observation, measurement, and functional analysis of the relationship between environment and behavior, to produce socially significant improvement in human behavior or to prevent the loss of an attained skill or function;

(2) "therapeutic care" means services provided by or under the supervision of a speech-language pathologist licensed under AS 08.11 or an occupational therapist or physical therapist licensed under AS 08.84.

(b) Coverage under this section

(1) is required to be provided only to individuals under 21 years of age;

(2) may not limit the number of visits to an autism service provider for treatment;

(3) is subject to copayment, deductible, and coinsurance provisions, and other general exclusions or limitations included in a health insurance policy to the same extent as other health care services covered by the policy; and

(4) must cover medically necessary treatment that is coordinated with an education program, but may not be contingent on the coordination of treatment with an education program.

(c) This section does not limit benefits that are otherwise available to an individual under a health care insurance plan.

(d) A health care insurer may not refuse to deliver, execute, issue, amend, or renew coverage to an individual or terminate coverage because the individual is diagnosed with or received treatment for autism spectrum disorders.

(e) In this section,

(1) "autism service provider" means an individual who is licensed, certified, or registered by the applicable state licensing board or by a nationally

1 recognized certifying organization and who provides direct services to an individual
2 with an autism spectrum disorder;

3 (2) "autism spectrum disorders" means pervasive developmental
4 disorders, or a group of conditions having substantially the same characteristics as
5 pervasive developmental disorders, as defined in the American Psychiatric
6 Association's Diagnostic and Statistical Manual of Mental Disorders-IV-TR, as
7 amended or reissued from time to time;

8 (3) "health care insurance plan" has the meaning given in
9 AS 21.54.500;

10 (4) "health care insurer" has the meaning given in AS 21.54.500;

11 (5) "medically necessary" means any care, treatment, intervention,
12 service, or item prescribed by a licensed physician or psychologist in accordance with
13 accepted standards of practice that will, or is reasonably expected to,

14 (A) prevent the onset of an illness, condition, injury, or
15 disability;

16 (B) reduce or ameliorate the physical, mental, or developmental
17 effects of an illness, condition, injury, or disability;

18 (C) assist to achieve or maintain maximum functional capacity
19 in performing daily activities, taking into account both the functional capacity
20 of the individual and the functional capacity of other persons of the individual's
21 age.

22 * **Sec. 2.** The uncoded law of the State of Alaska is amended by adding a new section to
23 read:

24 **APPLICABILITY.** AS 21.42.397, enacted by sec. 1 of this Act, applies to a health
25 insurance policy that is offered, issued for delivery, delivered, or renewed on or after
26 January 1, 2012.

27 * **Sec. 3.** This Act takes effect immediately under AS 01.10.070(c).

SENATE BILL NO. 74

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWENTY-SEVENTH LEGISLATURE - FIRST SESSION

BY SENATORS ELLIS, French, Wielechowski

Introduced: 1/28/11

Referred: Health and Social Services, Labor and Commerce

A BILL

FOR AN ACT ENTITLED

1 **"An Act requiring insurance coverage for autism spectrum disorders, describing the**
2 **method for establishing a covered treatment plan for those disorders, and defining the**
3 **covered treatment for those disorders; and providing for an effective date."**

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6 environmental modifications, using behavioral stimuli and consequences, including
7 direct observation, measurement, and functional analysis of the relationship between
8 environment and behavior, to produce socially significant improvement in human
9 behavior or to prevent the loss of an attained skill or function;

10 (2) "therapeutic care" means services provided by or under the
11 supervision of a speech-language pathologist licensed under AS 08.11 or an
12 occupational therapist or physical therapist licensed under AS 08.84.

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20 same extent as other health care services covered by the policy; and

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22 an education program, but may not be contingent on the coordination of treatment
23 with an education program.

24 (c) This section does not limit benefits that are otherwise available to an
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OLIVER WYMAN

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