

Early Effect of Affordable Care Act on Access to Health Care of Children with Special Health Care Needs

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Abstract

Children with special health care needs require more access to health care for an improved quality of life. Health insurance helps these children to have access to the needed care. The Patient Protection and Affordable Care which was enacted in 2010 is aimed at increasing access to primary health care. In this study we used the difference in difference propensity score match to analyze the effect of the introduction of the affordable care act to health care access with respect to children and a special focus on children with special needs. This study used the 2007 and 2011/2012 National Survey of Children Health to assess the difference in health care accessibility before and after the implementation of the affordable care act. The main findings from the study indicate that there has been an increase in access to health care after the implementation of the ACA. However there was no significant difference in the reported unmet health needs between the two periods. Additionally, in the post ACA period, more people reported they did not have access to a private dr. or not. Policy makers must increase infrastructure to accommodate the surging rise in the number of people demanding health care.

Keywords

Health Care Provision; Health Care Access; Health Insurance.

1. Background and Introduction:

Children require a significant amount of health care provision during their early ages to ensure continued good health. Children with special health care needs (CSHCN) even require more health services. Children with special needs refers to “children who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally” [1-3]. CSHCN though make up a small percentage of the population, they account for a significant amount of the total health care expenditures than children in general. [4-6]. One study finds CSHCN utilize 80% of all health expenditure and make up 20% of children population [7]. A more recent study estimates that 43% of US children currently have at least 1 of 20 chronic health conditions assessed and this increases to 54.1% when other factors such as overweight, obesity and developmental delays are included [8]. CSHCN are the most vulnerable and access to health care provides them with improved quality of life and it reduces financial burden of care takers [9]. Health insurance is one avenue through which parents and care givers can reduce the burden of caring for CSHCN. The aim of this research is to analyze the extent to which the Patient Protection and Affordable Care Act has contributed to increase in access to health care and reduction of the burden of caring for CSHCN.

Improvement in medicine, technology and changing disability insurance laws have all contributed to increasing number of children with special needs [10]. Additionally, about 90% of children with special needs make it to adult hood due to early intervention programs ([11]. Health care expenditures have also been increasing due to improved technology and increased

access to different health care services [12]. In the U.S health care alone makes up about 17% of the GDP [13]. Medical expenditure for CSHCN is expected to increase, and this is at about 20 percent for those with private insurance and 10 percent for those with public insurance based on Medical Expenditure Panel Survey data between 2000 and 2004 [14]. CSHCN have about three times more annual health care expenditures and their parents have higher out of pocket medical costs [15]. Having a CSHCN coupled with increasing health care costs puts a lot of strain on the parents, caregivers and the children affected. This includes mental, social and financial challenges and in some cases it affects the employment of the parent [16, 17].

Health insurance, both private and public, is an avenue for parents and guardians to access health care and to cover some of its related costs. [18]. Past studies have indicated that access to private insurance especially by CSHCN has decreased while public insurance has increased though in general, access to health insurance has increased [18]. The impact of type of insurance on health care access is not very clear. While some studies have found that children with private insurance get better services [9], others have reported the contrary [19, 20]. Continuous and adequate insurance is linked to better access to primary care, medical home and reduction in forgone care [21].

The Patient Protection and Affordable Care Act hereafter known as ACA was implemented in 2010. The aim of ACA is to make health care affordable and accessible to all. ACA requirements made it impossible for anyone to be denied health access due to a preexisting condition and also prevented coverage being rescinded when an individual becomes ill. It also required that health insurance plans in all markets must cover claims related to children's pre-existing conditions and no one could be refused due to pre-existing conditions. Furthermore the ACA also aimed at providing more primary care for people with prevention as its main focus while eliminating cost barriers. This presents various opportunities, such as increase in access to health care by all, those with private insurance who could not get their children enrolled due to pre-existing conditions can now have these children enrolled which could be translated to a general increase in coverage for all as well as increase in access to primary care. Those with public insurance are also able to get access to care without any cost barriers. This legislative also provides expansion of services for those in Medicaid, CHIP as well as extended coverages through the health exchanges [4].

Although consensus exists about the positive effect of ACA especially in terms of increasing access to primary and preventive care and also increasing access to health insurance in general [22-24], the effect of ACA on access to primary care by CSHCN is not very clear. Also the effect of ACA on quality of care is still unknown. Using data from 2007 and 2010/2011 national survey of children health (NSCH) this study uses a difference in difference method with propensity score matching to estimate the pre policy and post policy access to health care by children in general and CSHCN. Specifically, we looked at access to preventive care, that is if the respondent reports that the child has had a preventive care visit in the past 12 months, if the respondents notes that they do have a private physician or nurse and thirdly if the respondent reported any unmet health or medical needs. This study further looks at the impact of ACA on different age groups of CSHCN. The study also considered the quality of care that parents receive between the two periods.

Previous studies on health care of CSHCN have considered factors such as lack of insurance and underinsurance for children with special needs, private and public insurance, health financing, future of health services for children with special needs and impact of children with special needs on parental employment ([5, 9, 25]). Few studies closely relate with our study for example in one study the authors considered the health care needs of CSHCN in New York after enrolling in the SCHIP program. The author considered respondents before the SCHIP and a year after enrolment into the SCHIP program. A total of 2290 respondents were accessed. The

results indicated that there were improvements in access to health care and reduction in unmet needs with the introduction of the SCHIP among New York residents [26].

Our study differs from the previous study in a number of ways. First we use a unique data set, the National Survey of Children Health which covers children from every State in the US. Additionally, the huge data set allows us to use the difference in difference propensity score matching method to analyze the effect of the ACA of child health.

The study presents very significant findings. First among all children there was an increase in preventive care services at the post ACA period compared with the pre ACA period. Additionally, the post ACA period provided CSHCN with more access to preventive care, more relationship between patients and doctors. This was more dominant among CSHCN between the ages of 13-17 years. One explanation could be because children who formerly were ineligible have become eligible after the introduction of ACA. There were some challenges that have also been identified with the ACA. Due to increase in demand for health care and no increase in the supply of physicians, there is still a high level of unmet health needs by most children. Also doctors end up spending less time on their patients than pre ACA period. The less time physicians reportedly spend on their patients is also a sign of lower quality of care that the patients might be getting. These results have several policy implications. First the introduction of the ACA has been beneficial to all in terms of quantity of health care based on these early effect analysis. ACA has provided the opportunity for more people to have access to health insurance. Additionally it has also increased the number of CSHCN to have insurance and access to care. We see that these benefits are more pronounced among those who are between the ages of 13-17 years. Increasing the number of health care facilities and infrastructure is very important to meet the increasing demand for health care as a result of the ACA to meet the increasing unmet health needs. Also policy should focus on providing more services within the ACA for children with special needs since they have a high level of varied demand.

2. Data:

The 2007 and 2011/2012 National Survey of Children's Health (NSCH) is a nationally representative survey of parents/ caregivers of non-institutionalized children between the ages of 0-17 years of age. The NSCH is a population based random digital dial survey that was conducted using State and Local Area Integrated Telephone Survey mechanism as its sampling frame. The survey was sponsored by the Maternal and Child Health Bureau. One child was randomly selected from all eligible children in the household, and the respondent was self-identified as the parent or guardian who knew the most about the child's health and health care. Though this data is cross sectional, various characteristics make it suitable for this study. First the large sample size (>90,000) for each year surveyed means that a representative sample of children in the country could be estimated. Data that did not have all the needed variables for the analysis were deleted. The data also provides an enormous information on multiple aspects of children's lives including physical and mental health, access to quality health care and the child's family and neighborhood, school and social context. Furthermore the data allows for comparison of children with and without health insurance as well as children with private insurance and those with government insurance. Finally the data includes multiple sociological, familial and demographic factors that are important in identifying the model. Further information about the data is available at www.childhealthdata.org.

3. Methodology:

We use difference in difference propensity score matching (DID) to estimate the access to health care by children due to the enactment of the ACA. This approach helps us identify the difference in health care access before ACA and after its enactment. This in effect would be used

to estimate the difference in health care access attributable to the ACA. The DID matching helps us identify similarities between the population and covariates in 2007 and 2011/2012 when the data was collected. DID matching is used since it eliminates selection bias and also estimates the Average Treatment Effect on Treated and Average Treatment Effect. The validity of the DID matching relies on the fact that the difference between access to health care between 2007 and 2011/2012 should be constant given that there was no policy change and also there are similarities between respondents in 2007 and respondents in 2011 and 2012.

We defined our primary outcome variable as access to health care and we used the probit model to estimate the association between our predictors of interest and this outcome variable. In our model to identify access to health care we used three dependent variables, first is access to any preventive health care visit in the past year, second presence of any unmet health need in the past year and third access to a personal doctor or nurse in the past year. The covariates used in the probit regression are age, gender, race, access to health insurance, family structure, mothers education and poverty level.

In our analysis we looked at three groups of respondents, the first was all children between the ages of 0-17 years. In the second analysis we considered CSHCN. Additionally we also considered three groups of CSHCN, those between the ages of 0-3, 4-11 and 12-17 years. This is necessary since the demands of care for CSHCN varies by age and the diagnosis. Children between the ages of 0-3 require more care and early interventions needed to make life easier as they grow. Between the ages of 4-11 years, parents may have a better idea of the child’s diagnosis and may be able to handle it better. Among adolescents between 12-17 years, this is a period where they may be transitioning to adult hood and may require other services, insurance and care. All three age groups present different challenges and therefore there is the need to understand how care is impacted.

4. Results:

4.1. Insurance Type and Access to Private Dr. Or Nurse, Preventive Care and Unmet Health Needs.

Table 1. Health Insurance Type and access to private dr. or nurse, preventive care and unmet health needs of all children in 2007 and 2011/2012 periods

	2007						2011/2012					
	Private Dr. or Nurse	S D	Preventiv e Care	S D	Unmet Heath Needs	S D	Private Dr. or Nurse	S D	Preventiv e Care	S D	Unmet Heath Needs	S D
Insurance Type												
public insurance	19667		18224		19707		27298		27036		27313	
mean (%)	91	0.28	77	0.42	9	0.29	90	0.31	85	0.36	8	0.28
private health insurance	64063		60950		64130		63005		62792		63040	
mean (%)	96	0.21	84	0.36	4	0.19	95	0.22	87	0.34	4	0.19
currently uninsured	6781		6539		6784		4024		3998		4022	
mean (%)	77	0.42	65	0.48	13	0.33	70	0.46	58	0.49	20	0.40
Total N	90511		85713		90621		94327		93826		94375	
mean (%)	93	0.25	81	0.39	6	0.23	92	0.27	85	0.36	6	0.24

Table 2. Health Insurance type and parent/guardian perception of quality of care based on Physician relationship

	2007								2011/2012							
	sensitive to needs	SD	partner in care	SD	listens patients	SD	spends time	SD	sensitive to needs	SD	partner in care	SD	listens patients	SD	spends time	SD
Insurance Type																
public insurance	5271		5289		5289		5285		7162		7182		7181		7176	
mean	88	0.356	86	0.368	88	0.353	79	0.429	88	0.325	86	0.351	87	0.340	78	0.413
private health	11917		11975		11987		11977		11620		11679		11678		11677	
mean	94	0.262	91	0.308	93	0.278	89	0.331	94	0.229	92	0.276	93	0.251	89	0.316
currently uninsured	884		884		884		887		474		473		475		474	
mean	87	0.482	84	0.504	86	0.496	75	0.558	80	0.402	75	0.436	77	0.418	58	0.493
Total N	18072		18148		18160		18149		19256		19334		19334		19327	
mean	92	0.308	90	0.339	91	0.316	85	0.378	92	0.276	89	0.313	90	0.295	84	0.366

Overall, access to a private doctor or nurse was higher in 2007 compared with 2011/2012 considering those with private insurance and those with public insurance (Table 1). For example 91% reported having public insurance and also a private doctor or nurse compared with 90% in 2011/2012. Similarly, 96% and 95% for those with private insurance and private doctor in 2007 and 2011/2012 respectively. In general access to preventive care was greater in 2011/2012 than 2007 irrespective of the type of insurance except in the case of those uninsured. Unmet health needs in 2007 and 2011/2012 were almost the same in both periods. We next considered the relation between insurance type and service provided to children with special needs between 2007 and 2011/2012. We looked at the parents' perception of quality of care based on what the parent thinks of the physician. We find that among those with public and private insurance there was no difference between the two periods based on the physician sensitivity to the needs of their patient, whether the physician is a partner in care, if the physician listens or spends enough time. However we find that there were differences in the perception of those uninsured in both periods. In 2007, 87 percent of the parents reported the physician were sensitive to their needs but this was lower (80%) in 2011/2012. A greater percentage (75%) in 2007 indicated that the physician spend more time with them compared with (58%) 2011/2012.

4.2. Average Treatment Effect on the Treated for all Children in 2007 and 2011/2012

Table 3 depicts the early effect of ACA on access to preventive care, access to a private doctor or nurse and presence of any unmet health need among all children between the ages of 0-17 years. We compared the period 2007 that is the pre ACA period and 2011/2012 post ACA period. We find that, using the PSM and DID, that there were significant difference between access to care before and after the ACA period among children. Children in the post ACA were more likely to have preventive care compared with those in the pre ACA period. However

unmet needs was higher in the post ACA period than the pre ACA period. Also, children in the post ACA were reportedly less likely to have access to private doctor or nurse than those in the pre ACA period. Based on these initial results it seems that the impact of ACA in general on children has been felt in some areas while other areas may be having challenges.

Table 3. Average Treatment Effect on Treated and access to care by all children

	ATET	SE	z value	N
Private Dr. /Nurse	-0.015***	0.001	-11.93	169,967
Preventive Care	0.043***	0.002	22.3	164,926
Unmet health Need	0.004***	0.001	3.87	170,090

4.3. Impact of ACA on Children with Special Health Needs Access to Health.

Table 4 depicts the early effect of ACA on health access to children with special needs. Similar to Table 3 we first considered the impact on preventive health care, presence of a private doctor or nurse and unmet health needs. In general for CSHCN, we find that access to preventive care was higher post ACA than pre ACA. However there was no significant difference between unmet health needs in both periods and also having access to a personal doctor or nurse was less in the post ACA period compared with pre ACA period.

Table 4. Average Treatment Effect on Treated and access to care by Children with Special Needs

	ATET	SE	z value
Private Dr./Nurse	-0.012***	0.002	-5.020
Preventive Care	0.036***	0.004	10.220
Unmet health Need	-0.002	0.004	-0.630
Dr. Sensitive	0.010***	0.003	3.240
Dr. Partner	0.007**	0.004	2.120
Dr. Listens	0.004	0.003	1.180
Dr. Time	-0.007*	0.004	-1.720

We also considered other factors that could affect the quality of care for CSHCN. We find that respondents reported that the doctors were more sensitive and served as partners in the care of the children in the post ACA period compared with the pre ACA period. Respondents reported that the doctors were less likely to spend more time with the children. There was no significant difference between how doctors listened to patients in both periods.

4.4. Impact of ACA on Children with Special Health Needs Age Variations.

In Table 5 we considered the effects of care provision for CSHCN with different age groups. Specifically we looked at three main age groups, 0-3 years (column1), 4-11 (column 2) and 12-17 years (Column 3). In all three age groups we find that there was no significant difference in respondents unmet health needs and reports of whether the doctor listened to them or not. Furthermore there was no significant difference between doctors being sensitive to the needs of their patients and respondents report of seeing doctors as partners in care in both periods among individuals between the ages of 0-3 and 4-11 years. However we find that there were significant difference among children between the ages of 12 and 17 years. The respondents indicated that the doctors were more sensitive and served as partners in care for this group of children. While we see that children between in the 0-3 year group are more likely to have

access to preventive care, this was lower for those in the 12-17 year group and there was no significant difference among those in the 4-11 years group.

Table 5. ATET for different age groups of children with special needs

	0-3 years			4-11 years			12-17 years		
	ATET	SE	Z value	ATET	SE	z value	ATET	SE	Z Value
Private Dr./Nurse	0.001	0.008	0.14	-0.014***	0.003	-4.21	-0.012***	0.003	-3.5
Preventive Care	0.549***	0.016	33.75	-0.005	0.005	-1.13	-0.028***	0.005	-6.2
Unmet health need	-0.014	0.011	-1.28	-0.003	0.005	-0.58	0.006	0.005	1.16
Dr. Sensitive	0.004	0.010	0.43	0.005	0.005	1.16	0.013**	0.004	2.95
Dr. Partner	-0.013	0.011	-1.19	0.004	0.005	0.8	0.012**	0.005	2.4
Dr. Listens	-0.016	0.011	-1.51	0.003	0.005	0.55	0.004	0.005	0.74
Dr. Time	-0.030**	0.013	-2.31	-0.030**	0.013	-2.31	0.003	0.006	0.58

5. Discussion:

Our study looked at the early effect of ACA on access to primary health care and quality of care reported by parents and guardians of CSHCN. This study primarily considered the pre ACA period that is 2007 and post ACA period that is 2011/2012. The main variables considered were access to preventive care, access to a personal doctor or nurse and whether the parent had reported any unmet medical need. Other factors considered specifically for CSHCN were the quality of care CSHCN received. This included questions like how sensitive was the physician to the family needs, the time spent by the physician, if they saw the physician as a partner in care and finally if the physician listened to them.

As expected we find that there was a significant increase in access to preventive care during the post ACA period compared with the pre ACA period. A major factor could be the fact that in general the ACA allows more people to get access to health insurance. Also people who formerly did not qualify for insurance now get qualified due to elimination of preexisting conditions which was previously a limitation to access to insurance. Additionally, compared to formerly the post ACA period is causing an increase in both private and public insurance which also means that more people could have access to preventive/ primary health care services. With increase in the number of people getting health insurance and health care there is the need for an increase in the number of facilities and physicians providing these services. [27] estimated that there is the need to have about 2.5 percent increase in the physicians providing these services. It may be possible that the number of physicians has not matched up to the number of people getting access to care. This may be the reason why there is a decrease in the people having access to personal physicians or nurses in the post ACA period compared to the pre ACA period. Similarly, an increase in the number of people with insurance also implies an increase in the needs. So if the number of facilities and services are not enough to meet the needs then it will cause an increase in the unmet needs reported. The introduction of the ACA we believe has also provided the opportunity for more children with special needs to get access to health care than previously and this includes both private and public insurance. [28] for example explains that the ACA has also provided an opportunity for people who were experiencing job locks to consider moving to other jobs without losing their insurance.

The post ACA period has also provided an increase in the patient and physician relationship. Interestingly we find that most parents/ guardian reported that physicians were more sensitive to their needs and treated them as partners in care. However the time spent was not enough especially in the post ACA period compared with the pre ACA period. We also realized that the needs for different age group having special needs was different. In the post ACA period there

was no difference between access to preventive care however this was significant among the 12-17 year olds. This is in contrast to previous studies that have shown that CSHCN between the ages of 12-17 were the most vulnerable in terms of access to care. This could be because whereas in the pre ACA period this age group may not have qualified for some services, the new ACA makes these services and insurance available to this group of children and so the increase in the reported access to preventive care. Another explanation is the fact the ACA allows children to stay on their parents insurance till the age of 26 which means these children will have more opportunities to receive services that they previously may not have qualified for.

A significant finding of the study indicated that the out of pockets cost for parents in the post ACA period reduced compared with the pre-ACA period. This could be because the post ACA period provided more opportunities for parents to get some financial assistance in the care of their children. This results is similar to [9] who find that insurance serves as a financial help to parents of children and insurance reduces financial burdens as a result of health.

In general, health care provision for children in the post ACA period has been better than the pre ACA period. More children have been able to access health care, more people are insured and those who did not qualify due to pre-existing condition now are able to purchase insurance in the insurance market. However there still remains some challenges, given the increase in the access to insurance there has also been an increase in the demand for services however the supply for services has to increase in the same manner. There is the need for more physicians to be trained to provide quality services. Also the need for more infrastructures is important.

6. Conclusion

This study compared access to care, quality of care and financial burden of parents of children and CSHCN specifically between the pre ACA period and post ACA period. ACA was put in effect in 2010 and it aimed at making preventive care more available to more people. The ACA also provided an avenue for increase in number of people with insurance by eliminating pre-existing conditions as a barrier in health care access. This study is aimed at looking at the early effect of the ACA on children health access.

The major findings of the study showed that in general there has been an increase in access to care to all children in general; and CSHCN during the post ACA period. Additionally, physician and patient relationship were better in the post ACA period compared to the pre ACA period. There were some challenges in some areas that were observed. There was an increase in parent's report of unmet health needs in the post ACA period compared with the pre ACA period. Furthermore parents reported that physicians were less likely to spend more time with them compared with the pre ACA period. This study has some limitations such as the inability to differentiate those who were affected by the ACA in the post ACA period especially those with grandfathered plans. However this does not limit the results of the study which shows that CSHCN have better access to preventive health care services in the post ACA period than in the pre ACA period.

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