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(分担)研究報告書

地域間での乳幼児医療費助成の違いが就学前児童の医療サービス利用と健康に与える影響

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研究要旨

本研究の目的は，子ども医療費助成による医療費無料化が就学前の子どもの医療サービス利用と健康に与えた影響を分析することである．1990年代の『患者調査』，『社会医療診療行為別調査』，『国民生活基礎調査』，『人口動態調査』の個票データと東京都特別区と政令指定都市の議会議事録より公開されている子ども医療費助成の導入状況を突合し，医療費助成の対象有無と医療サービスの利用状況及び健康状態との関係を分析した．その結果，医療サービスの利用については，外来において統計的に有意な関係が観察された一方で，入院では統計的に有意な関係を観察することができなかった．ただし，手術を伴う入院患者については，入院日数が有意に増加することが分かった．健康状態については，自覚症状のある子どもの割合が有意に減少し，入院患者においては退院時転帰が治雄となった割合が有意に増加することが明らかになった．また，0歳児のみにおいて1000人当たり死亡率が0.8人減少したことが分かった．推定結果より，費用対効果を計算したところ，便益（死亡率減少×統計的生命価値）は費用（医療費の増加）を大きく上回り，子ども医療費助成による医療費無料化政策は費用対効果の面では有効であろう．

A．研究目的

A-1．研究の背景

To improve children’s health and healthcare accessibility, many developed countries have provided generous healthcare coverage, often free of charge, to child patients. The United States has expanded Medicaid eligibility to include the children of low-income parents since the 1980s. Even countries with universal healthcare systems (e.g., Germany, Sweden, Taiwan, South Korea, and Japan) provide subsidies in addition to universal health insurance for child patients. These policies are considered investments for their futures because it is widely recognized that a healthy childhood results in various long-term benefits in health, education, and even labor. Besides the benefits for the child, which are enjoyed throughout his or her life, improving health equity for children in the community would prevent the intergenerational perpetuation of poverty and poor health outcomes that cause future financial burdens on the healthcare system.

A-2. 研究の目的

In this study, we investigated the effect free healthcare provision had on the healthcare use and health outcomes of children of preschool age (that is, those aged zero to six years) by exploiting the unique variation of eligibility for the children's healthcare subsidy among Japanese municipalities. In the 1990s, some Japanese municipalities introduced the subsidy to decrease cost-sharing for children from 30% to 0%, thus augmenting universal health insurance coverage. Because each municipality introduced and expanded the subsidy to different eligible ages at different times, subsidy eligibility varies substantially at the municipality-age-time levels, allowing us to adopt the difference-in-differences (DID) framework. To this end, we collected data on the subsidy statuses of 33 municipalities with relatively large populations by reviewing the available minutes on each municipal council's homepage and then merged this information with four nationally representative individual-level datasets on healthcare use and health status. We then investigated the subsidy's short-term effects on children's outpatient and inpatient care use (e.g., number of patients, visit intervals, length of hospitalization, and monthly spending) and health outcomes (e.g., subjective symptoms that were easily recognized and therefore reported by parents, discharge outcomes measured by physicians, and mortality rates). Therefore, it should be noted that our results are limited to urban regions.

B. 研究方法

B-1. 分析に用いたデータ

To collect information on subsidy status by the municipality, we reviewed the minutes of each municipal council. The Ministry of Health, Labour, and Welfare (MHLW) has published comprehensive information on the subsidy status for all municipalities as of 2011, but none is available before that date. In particular, this information was not published in the 1990s, when most municipalities introduced subsidies. To compensate for this shortage, we collected the following information through a review of the minutes available on the homepages of each municipal council: 1) the time (year and month) of the introduction of the subsidy, 2) the maximum age of eligible children, and 3) the amendment of the eligible age and its timing (year and month). We collected this information for 33 municipalities with populations of more than 0.5 million from 23 specified districts ("Tokubetsu-ku") in the Tokyo Metropolis and 10 government-designated cities ("Seirei Shitei Toshi") across Japan. This study included 19% of preschool-age children in the 1990s. The main reason for focusing on the 33 municipalities is that they have taken the initiative to introduce the subsidy and expand eligible age.

Table 1 shows the introduction of timing and changes in the eligibility age for each municipality. For example, Chiyoda introduced the subsidy for children aged 4 or under in April 1993. Then, it was expanded to children aged 6 or under in September 1995. As shown in the table, the subsidy expanded dramatically in the 1990s. Therefore, to save space, we show only the year in which the subsidy was introduced, although the month also differs across municipalities.

We used the four nationally representative data sources from the MHLW to evaluate the effects of subsidies on comprehensive healthcare use and children's health outcomes. From the entire survey sample, we extracted data on children aged 0–6 years living in 33 municipalities and merged individual-level data from each survey with subsidy status, residential municipality/location of the medical institution, and survey year-month as identifiers. All data contained the age of each child and the survey date. Furthermore, we have information on the exact date of the subsidy introduction. Using this information, we identified whether each child was eligible for the subsidy on the day of each survey. Using this merged data, we investigated the subsidy's short-term effects on the following variables: 1) the number of patients, visit intervals, and monthly spending, which represent outpatient use; 2) the number of patients, length of hospitalization, and monthly spending, which correspond to inpatient use; and 3) subjective symptoms that were easily recognized and therefore reported by parents, discharge outcomes measured by physicians, and mortality rates, which represent health outcomes.

B-2. 記述統計

Table 2 summarizes the descriptive statistics of major outcome variables used in this study from each survey. Panel A describes the Patient Survey (PS) and indicates that the mean number of outpatient visit interval, representing the frequency of outpatient care use, is 21.6 days. The mean length of hospital stay was 9.0 days, and 10.9% of child patients were discharged as cured. Note that this discharged outcome represents the objective health status evaluated by a physician. Panel B summarizes the monthly spending collected by the Statistics of Medical Care Activities (SMCA). These amounts are the total costs paid by patients/municipalities and insurance to medical institutions. Child patients spend an average of JPY 8.3 and 84.6 thousand per month on outpatient and inpatient care, respectively. Panel C reports the basic statistics of the Comprehensive Survey of Living Conditions (CSLC). On average, 20.3% and 0.4% of children currently use outpatient and inpatient care, respectively, and 24.5% of children have some subjective symptoms, representing subjective health status reported by parents. Panel D, reflecting the Vital Statistics (VS), shows that the average mortality rate is 0.8/1,000 children. The mortality rate among this age group is extremely low but is somewhat higher in infants under 12 months of age (i.e., aged zero), at approximately 4.2/1,000 infants. We also calculated the mortality rate by cause of death based on the International Classification of Diseases, Revision 8 (ICD-8). In these age groups, congenital malformations and perinatal diseases were the most common causes of death.

B-3. 推定モデル

We estimated the following equation utilizing the unique variations in subsidy eligibility across residential municipality, age, and time of introduction:

$$Y_{i,a,h,m,t} = \alpha + \beta 1[Subsidized]_{a,m,t} + X_{i,t}\gamma + \delta_h + \mu_m + \tau_t + \pi_{m,t} + \varepsilon_{i,a,h,m,t} \quad (1)$$

where $Y_{i,a,h,m,t}$ is a dependent variable that represents healthcare use and outcomes for child i of age a at hospital h living in municipality m in survey year t. The key variable, $1[Subsidized]_{a,m,t}$, is a dummy indicating whether healthcare is subsidized. This variable depends on the maximum subsidy eligibility age a in municipality m in survey year t. $X_{i,t}$ is a vector of individual-level control variables, such as gender, birth month, age, and type of insurance. We also included hospital fixed effects, δ_h, when using the PS and the SMCA; municipal fixed effects, μ_m, when using the CSLC and the VS, and survey year fixed effects, τ_t. Further, we included a municipality-specific trend, $\pi_{m,t}$, which is the interaction of the municipality and survey year fixed effects, to control for time-varying unobserved factors correlated with healthcare use and outcomes at the municipality level. The standard errors are clustered at the level of children's age and municipality to account for the correlation in the error terms within age and the municipalities.

Similar to Equation (1), we used the following equation to estimate the age-specific effect of the subsidy:

$$Y_{i,a,h,m,t} = \alpha + \sum_{a=0}^{6} \beta_a \{1[Subsidized]_{a,m,t} \times 1[Age \quad a]\} + X_{i,t}\gamma + \delta_h + \mu_m + \tau_t + \pi_{m,t} + \varepsilon_{i,a,h,m,t} \quad (2)$$

where $1[Age \quad a]$ is a dummy that takes the value of one if a child is of age a (baseline: six age). The other variables are the same as those in Equation (1). While it is possible to estimate the age-specific effect by dividing the samples by the child's age, we estimate a single equation to prevent loss of statistical power due to small sample sizes. The above equations were estimated using ordinary least squares.

C. 研究結果

C-1. 外来への影響

We first present the results for the effect of the subsidy on the use of outpatient services. In Table 3, we report the estimated coefficient of β, derived from Equation (1), representing the difference between subsidized children, who do not need to pay any of the costs, and non-subsidized children, who pay 30% of the total cost. Column (1) shows the effect on the probability of using outpatient care, indicating no significant difference between subsidized and non-subsidized children. Next, we examined the effect on the aggregated number of patients by a medical institution and the child's age. Columns (2) and (3) present the regression results for the number of patients by first and repeat visits, respectively. Interestingly, although the estimate for the first visit was not statistically significant, we found a significant difference for repeat visits. The number of repeat patients increased by 8.8% (0.17 out of 1.93 children) due to the subsidy. This result might be consistent with that for the outpatient dummy from the CSLC, which was not statistically significant, as shown in Column (1). The outpatient dummy equals one for a repeat patient and does not change even if repeated visits increase. The point estimate in column (4) of Table 3 shows that the subsidy shortened visit intervals by 3.0 days, suggesting that subsidized children use outpatient care more frequently than those without subsidy. As the mean value for non-subsidized children was 22.5 days, the subsidy shortened outpatient intervals by 13.3%. Column (5) reveals that the monthly spending for subsidized children increased by JPY 517 (approximately USD 5.17) compared to those without the subsidy. This estimate corresponds to a 6.8% increase from the mean value for non-subsidized children, which is JPY 7,525 (USD 75.25).

Panel A of Figure 1 demonstrates the age-specific effect, which includes the interaction of subsidy status with age (baseline: age six), as presented in Equation (2). We find that the size of the effects tends to be larger for young children, particularly among infants aged zero (i.e., under 12 months of age) and one year. Specifically, the probability of using outpatient services for infants aged one is 6.3 percentage points higher than that for children aged six. Visit intervals for subsidized infants aged zero (i.e., under 12 months of age) and one year were shortened by 7.8 and 6.9 days compared to non-subsidized children aged six years, significant at the 10% level. As for monthly spending, subsidized infants aged zero (i.e., under 12 months of age) and one year spend more than JPY 2,387 (USD 23.87) and JPY 2,161 (USD 21.61), respectively, on medical care compared to non-subsidized children aged six years.

C-2. 入院への影響

Unlike outpatient services, to which patients have free access and no restrictions on the number of visits, a physician's decision is required for inpatient services. Thus, we can observe supply-side behavioral responses to a decrease in patients' cost sharing (i.e., 30% to 0%) by estimating the effects on inpatient dummy, days of hospital stay, and the number of hospitalized patients.

First, we examined the effect on the probability of using inpatient care. As shown in Column (1) of Table 4, we found no significant difference in hospitalization status between subsidized and non-subsidized children. We also examined the effect on the aggregated number of patients by medical institution and child's age. Columns (2) and (3) represent the results of the number of patients with and without surgery, respectively. We found significant results only for the number of patients with surgery, suggesting that the implementation of the subsidy encourages physicians to more carefully examine children hospitalized for serious illness. Column (4) reports the effect of the subsidy on the length of hospital stay, which represents the intensity of care. We found no significant effect, suggesting that physicians do not hospitalize children longer, even if the patients' cost-sharing is zero. Column (5) shows the estimate of monthly spending. Similarly, we found no significant difference.

Panel B of Figure 1 plots age-specific effect on inpatient use. As shown in the figure, we found that the younger the children are, the longer the hospital stay length is only for patients who are hospitalized with surgery. Subsidized infants under 12 months of age (i.e., aged zero) stay 3.8 days longer in hospitals than non-subsidized children aged six years. However, we observed no significant differences by age in children who were hospitalized without surgery. These results suggest that the implementation of the subsidy leads to more careful treatment of younger children hospitalized with serious diseases.

C-3. 健康への影響

Turning now to the effect on health, we investigated whether free healthcare improves children's health outcomes. Our primary focus again was on comparing outcomes for subsidized and non-subsidized children before and after the introduction of the subsidy. We first present results for subjective health, that is, the probability of having symptoms as reported by parents. Table 5 reports the estimates on the probability of having various symptoms. We found that subsidized children are less likely to have fevers, coughs, and nasal discharge compared with non-subsidized children, suggesting that the subsidy improved children's health. In particular, the probability of having a cough, the most prevalent symptom in this age group, decreased by 3.7%. Considering that the mean value for non-subsidized children is 12.1%, this effect is considerably large. As presented in previous section we found that the subsidy could significantly increase outpatient care use (e.g., shortening visit intervals and increasing the probability of current outpatient visits), thus implying that subsidized children might go to the physician early and in good time. Thus, the subsidy might contribute to promoting the healing process and finding otherwise undetected diseases, thereby improving subjective health. Meanwhile, we found no significant effects on the probability of wheezing, which might be associated with asthma, itchy eyes, tinnitus, toothache, and rash. Although we only observed significant effects for minor symptoms, it can be inferred that the benefits from decreases in children's subjective symptoms might translate into further benefits, such as an increase in the labor supply of parents. For example, if parents view their children as having better subjective health, they might have lower rates of absenteeism in the workplace.

We also examined the effects on objective health status. Column (1) of Table 6 reveals the effect on discharge outcomes, as assessed by a physician. Physicians assess patients' outcomes at discharge in five stages (i.e., cured, lightened, unchanged, worse, and dead) relative to the time of admission. Here, the dependent variable is a dummy variable that takes the value of one if a child patient was discharged as cured. We observed no significant effect on discharge outcomes, suggesting that the subsidy does not improve the health status of hospitalized children. Column (2) reports the effect on the total mortality rate, another objective measure of health status. Similarly, we found no significant change in the mortality rate due to subsidies. We obtained similar results by cause of death, as shown in Columns (3)–(7).

Figure 2 reports age-specific effects on health outcomes. We only observed significant improvements in health status for infants under 12 months of age (i.e., aged zero). Subsidized infants have a 5.3% higher probability of a cured outcome at discharge compared to non-subsidized children aged six. In addition, their total mortality rate is lower by 0.79 per 1,000 children. This result is statistically significant at the 10% level. As presented in previous section, we found that children who underwent a hospitalization involving surgery had a longer hospital stay, thus implying that the subsidy allowed patients with severe diseases, who needed a longer period of medical attention, to get more intensive high-tech treatment. Such increased use of inpatient care might lead hospitalized child patients to have good discharge outcomes, thus resulting in a decrease in the mortality rate. In summary, although we find no significant effect on overall objective health, the subsidy leads to improved health status only for infants under 12 months of age (i.e., aged zero).

D. 考察

Important interpretation of our findings is the costs and benefits of the subsidy. First, we calculated the cost of the subsidy per child saved. According to our estimates, the subsidy increases monthly outpatient spending for infants under 12 months of age (i.e., aged zero) by JPY 2,387 (about USD 23.87) and reduces their mortality rate by 0.79 per 1,000 infants. This result implies that the annual cost per saved life is approximately JPY 36 million (USD 0.36 million). Meanwhile, the statistical value of a life calculated by previous studies generally exceeds our estimated cost of saving a child's life through the subsidy. For example, Itaoka et al. (2007)[1] estimated the willingness to pay for reductions in mortality risk through environmental policies, suggesting that the value of a Japanese adult's life ranges from JPY 103 to 344 million (approximately USD 1.03 to 3.44 million). Integrating these aspects, our study suggests that the introduction of the subsidy yields an acceptable cost-benefit ratio for policymakers.

E. 結論

Investments in child health can affect various adult outcomes; thus, many developed countries provide health insurance with generous coverage for children. However, past studies on the effect of such generous health insurance predominantly focus on adults or the

[1] Itaoka, K., Krupnick, A., Akai, M., Alberini, A., Cropper, M., Simon, N., 2007. "Age, health, and the willingness to pay for mortality risk reductions: a contingent valuation survey of Shizuoka, Japan, residents." *Environmental Economics and Policy Studies* 8, 211–237.

elderly, and surprisingly little is known about children. In this study, we examined the comprehensive effect of free healthcare for preschool-age children on healthcare use and health outcomes. We utilized the unique variations in eligible age and the timing of subsidy introduction across municipalities in Japan.

We found that the free healthcare subsidy for children significantly increased outpatient use, as measured by visit intervals, the number of repeat patients, and monthly spending. The size of the effects tends to be larger for young children, particularly among infants aged zero (i.e., under 12 months of age) and one year. However, we found little evidence of an increase in inpatient use under the subsidy. We found a significant increase in the length of a hospital stay only for infants who were hospitalized with any surgery. We also found that the subsidy significantly decreased the probability of having subjective symptoms, especially fever, cough, and nasal discharge. Further, the mortality rate for infants decreased by 0.79 per 1,000 individuals. In summary, our study suggests that free healthcare improves children's healthcare use as well as health outcomes, while its effect on health outcomes is limited for adults or the elderly, as shown by previous studies.

This study has several limitations, mainly due to data restrictions. First, the PS and the SMCA used in this study only observed patients who used healthcare services rather than the entire population. As shown in the main results, we found that the number of patients who visited medical institutions increased sharply under the subsidy. These results suggest that children who visit under the subsidy are probably healthier, and thus, the composition of the samples before and after the change in subsidy status would be different. Thus, the results on health outcomes using these two data sources would be underestimated, that is, biased toward not finding any effects. To compensate for this problem, individual-level panel data are required; however, such data did not exist in the 1990s, a focus period in this study. Meanwhile, unlike the PS and SMCA, the CLSC comes from the entire population, but there is another concern about the results using these data. Here, we cannot identify which households reside in each of the 23 specified districts in the Tokyo Metropolis. Hence, for these households, we assigned individual data to the subsidy status of the entire Tokyo Metropolis. However, as shown in Table 1, there are substantial variations in the timing of subsidy expansion and maximum age eligibility within these areas. Thus, it would induce measurement errors, biasing the estimates to zero. We cannot find any effect on the probability of current use of outpatient care (i.e., extensive margin) using the CSLS, in contrast to effects on the number of patients (i.e., intensive margin) using the PS. The reason for this non-result on the extensive margin is driven by the above measurement errors.

Second, we conducted a reduced-form analysis focusing on urban areas due to data availability. Because a reduced-form analysis could not ensure external validity, we are unsure whether our findings from urban areas could be generalized to rural areas. To this end, it is necessary to conduct a reduced-form analysis using rural areas' data or a structural analysis. However, it is currently difficult to collect information on subsidy status in rural areas as most municipalities do not open their municipal council minutes on their homepages. Considering that it is important policy issue to understand how the subsidy program is effective in rural areas, this is a subject for future challenging work.

Third, we focused only on the effect on children's outcomes. Considering that the subsidy aimed not only to improve children's health but also to support young parents with children, it may affect various parental outcomes, such as financial stress and health status. In particular, it seems likely that benefits from improvements in children's subjective health might translate into an increase in the labor supply of parents. For example, if parents view their children as having better subjective health, they might have lower rates of absenteeism in the workplace.

Finally, although we mainly concentrated on the demand-side responses to free healthcare, examining the effect on the supply side is equally important. Since the subsidy increases the number of outpatients, it may provide incentives for physicians to migrate to municipalities adopting generous subsidies. Considering that the number of pediatric hospitals in Japan has been decreasing recently due to a decline in the total fertility rate, such migration may contribute to significant improvements in access to healthcare services for children.

F. 健康危険情報

特に無し.

G. 研究発表

1. 論文発表

Kang, C., Kawamura, A., Noguchi, H. "Does free healthcare improve children's healthcare use and outcomes? evidence from Japan's healthcare subsidy for young children". *The Journal of Economic Behavior & Organization* (Revise & Resubmit)

2. 学会発表

July/2019: World Congress of International Health Economics Association. "Does free healthcare improve children's healthcare use and outcomes? evidence from Japan's healthcare subsidy for young children".

June/2019: World Congress of International Health Economics Association. "Does free healthcare improve children's healthcare use and outcomes? evidence from Japan's healthcare subsidy for young children".

March/2019: 第 13 回「実証的なモラル・サイエンス」研究集会. "Does free healthcare improve children's healthcare use and outcomes? evidence from Japan's healthcare subsidy for young children".

H. 知的財産権の出願・登録状況(予定を含む)

1. 特許取得
特に無し.

2. 実用新案登録
特に無し.

3. その他
特に無し.

Table 1. Evolution of the subsid y by municipality

	’70s	’91	’92	’93	’94	’95	’96	’97	’98	’99	’00	’01
23 specified districts in Tokyo												
Chiyoda				④		⑥						
Chuo				②		⑥						
Minato				②			⑥					
Shinjuku		②			⑥							
Bunkyo			②						⑥			
Taito				③			⑥					
Sumida					②		⑥					
Koto				②			⑥					
Shinagawa				①	②				⑤	⑥		
Meguro				②					④	⑥		
Ota			①		②		⑥					
Setagaya			①		②		⑥					
Shibuya					②				④	⑥		
Nakano	①			③					④	⑥		
Suginami				②					⑥			
Toshima				②			⑥					
Kita				②					⑥			
Arakawa			②			⑥						
Itabashi					②		⑥					
Nerima				②				⑥				
Adachi				②					⑥			
Katsushika					③			⑥				
Edogawa					③		⑥					
10 government-designated cities												
Sapporo	⓪					①					②	
Sendai	②											
Yokohama						⓪	②			③		
Kawasaki	⓪					②				③		
Nagoya	⓪				②						③	
Kyoto				①						②		
Osaka				⓪			②	③			④	⑤
Kobe	⓪				②							⑤
Hiroshima	⓪				②				②			③
Fukuoka	②											

Notes: This table shows the timing of subsidy introduction and changes in the eligibility age for each municipality. The numbers in circles represent the maximum eligible ages. For example, Chiyoda introduced a subsidy for children aged four years or less in 1993. It was then expanded to children under six years in 1995. Although the month and year of the introduction of the subsidy differ across municipalities, we report only the year of introduction to save the space.

Table 2. Descriptive statistics

	Mean	*SD*
Panel A: from the *PS*		
Outpatient (*N*=9,664)		
Visit interval	21.604	37.669
Subsidized	0.468	0.499
Inpatient (*N*=18,600)		
Days of hospital stay	8.961	10.750
Cured Outcome at discharge compared to admission	0.109	0.312
Subsidized	0.634	0.482
Panel B: from the *SMCA*		
Outpatient (*N*=26,564)		
Monthly spending (in JPY 1,000)	8.272	7.526
Subsidized	0.496	0.500
Inpatient (*N*=2,938)		
Monthly spending (in JPY 1,000)	84.603	65.428
Subsidized	0.711	0.453
Panel C: from the *CSLC* (*N*=18,083)		
Outpatient dummy	0.203	0.403
Inpatient dummy	0.004	0.065
Having any subjective symptoms	0.245	0.430
Fever	0.050	0.218
Cough	0.114	0.318
Wheezing	0.032	0.177
Nasal discharge	0.120	0.325
Itchy eyes	0.001	0.024
Tinnitus	0.001	0.025
Toothache	0.008	0.089
Rash	0.040	0.195
Subsidized	0.347	0.476
Panel D: from the *VS* (*N*=693)		
Mortality rate (per 1,000 individuals)	0.810	1.556
Caused by infectious and parasitic diseases	0.018	0.076
Caused by neoplasms	0.028	0.083
Caused by diseases of the nervous system	0.034	0.129

Caused by diseases of the circulatory system	0.024	0.094
Caused by diseases of the respiratory system	0.064	0.178
Caused by congenital malformations	0.481	1.177
Subsidized	0.448	0.498

Notes: This table reports descriptive statistics of the main sample. Here, to save space, we report only the means and standard deviations of the outcome and key variables.

Table 3. Effect on outpatient use

	Outpatient dummy	The number of patients		Days from the previous visit	Monthly spending
		First visit	Repeated visits		
	(1)	(2)	(3)	(4)	(5)
Subsidized	0.003	0.118	0.170*	-2.997**	0.517***
	(0.009)	(0.081)	(0.089)	(1.363)	(0.197)
Hospital fixed effects		X	X	X	X
Municipality fixed effects	X	X	X	X	X
Year fixed effects	X	X	X	X	X
Municipality-specific trend	X	X	X	X	X
R^2	0.012	0.058	0.286	0.110	0.109
Sample size	17,979	2,891	4,854	9,664	26,564
Mean of no subsidy	0.212	1.433	1.926	22.457	7.525
Data source	*CSLC*	*PS*	*PS*	*PS*	*SMCA*

Notes: This table reports coefficients and standard errors (in parentheses) derived from Equation (1). The standard errors are two-way clustered at the municipality and age levels. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table 4. Effect on inpatient use

	Inpatient dummy	The number of patients		Days of hospital stay	Monthly spending
		With surgery	Without surgery		
	(1)	(2)	(3)	(4)	(5)
Subsidized	0.002	0.374***	0.575	-0.017	-3.506
	(0.002)	(0.131)	(0.372)	(0.341)	(4.178)
Hospital fixed effects		X	X	X	X
Municipality fixed effects	X	X	X	X	X
Year fixed effects	X	X	X	X	X
Municipality-specific trend	X	X	X	X	X
R^2	0.006	0.487	0.182	0.117	0.491
Sample size	18,083	1,996	5,819	18,600	2,938
Mean of no subsidy	0.003	1.520	2.364	7.930	80.036
Data source	*CSCL*	*PS*	*PS*	*PS*	*SMCA*

Notes: This table reports coefficients and standard errors (in parentheses) derived from Equation (1). The standard errors are two-way clustered at the municipality and age levels. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

Table 5. Effect on subjective health

	Fever	Cough	Wheezing	Nasal discharges	Itchy eyes	Tinnitus	Toothache	Rash
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Subsidized	-0.015**	-0.037***	-0.003	-0.019***	-0.001	-0.000	0.000	-0.001
	(0.006)	(0.008)	(0.004)	(0.008)	(0.001)	(0.001)	(0.002)	(0.005)
Municipality fixed effects	X	X	X	X	X	X	X	X
Year fixed effects	X	X	X	X	X	X	X	X
Municipality-specific trend	X	X	X	X	X	X	X	X
R^2	0.009	0.014	0.006	0.016	0.005	0.004	0.011	0.005
Sample size	18,083	18,083	18,083	18,083	18,083	18,083	18,083	18,083
Mean of no subsidy	0.048	0.121	0.031	0.127	0.001	0.001	0.012	0.037
Data source	*CSLC*	*CSLC*	*CSLC*	*CSLC*	*CSLC*	*CSLC*	*CSLC*	*CSLC*

Notes: This table reports coefficients and standard errors (in parentheses) derived from Equation (1). The standard errors are two-way clustered at the municipality and age levels. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$.

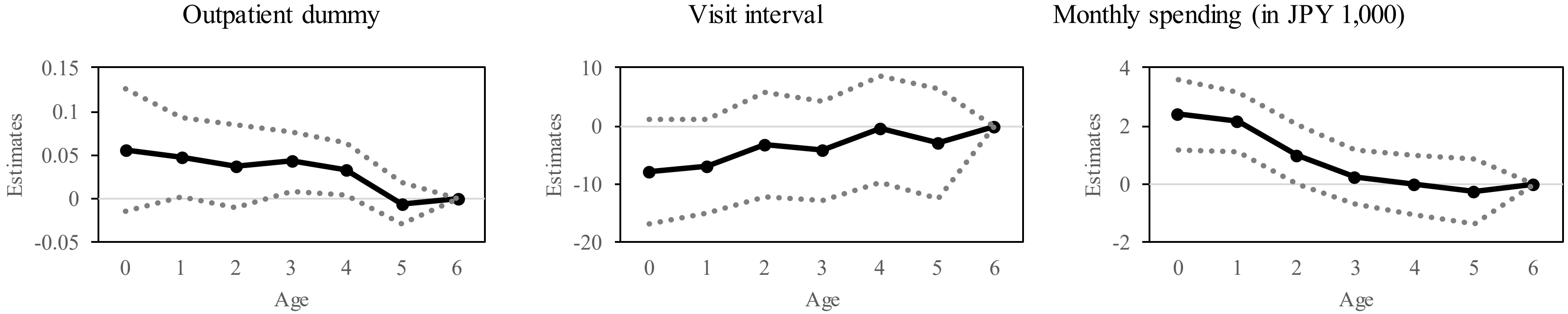
Table 6. Effect on objective health

	Cured outcome at discharge	Mortality rate (per 1,000 individuals)					
		Total	Neoplasms	Neuropathy	Circulatory diseases	Respiratory disease	Congenital malformations
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Subsidized	0.002	-0.072	0.002	0.005	0.005	-0.018	-0.123
	(0.009)	(0.148)	(0.010)	(0.021)	(0.013)	(0.026)	(0.150)
Hospital fixed effects	X						
Municipality fixed effects	X	X	X	X	X	X	X
Year fixed effects	X	X	X	X	X	X	X
Municipality-specific trend	X	X	X	X	X	X	X
R^2	0.320	0.398	0.147	0.151	0.171	0.210	0.351
Sample size	18,600	698	693	695	693	695	695
Mean of no subsidy	0.088	0.592	0.031	0.031	0.021	0.042	0.286
Data source	*PS*	*VS*	*VS*	*VS*	*VS*	*VS*	*VS*

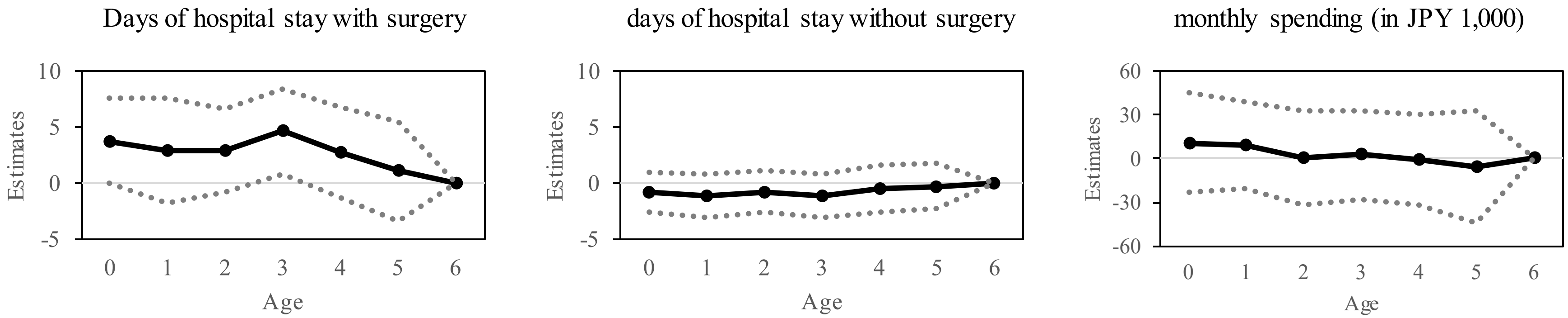
Notes: This table reports coefficients and standard errors (in parentheses) derived from Equation (1). The standard errors are two-way clustered at the municipality and age levels. $^{***}p<0.01$, $^{**}p<0.05$, $^{*}p<0.1$.

Figure 1. Effect on healthcare use by age

A. Outpatient use

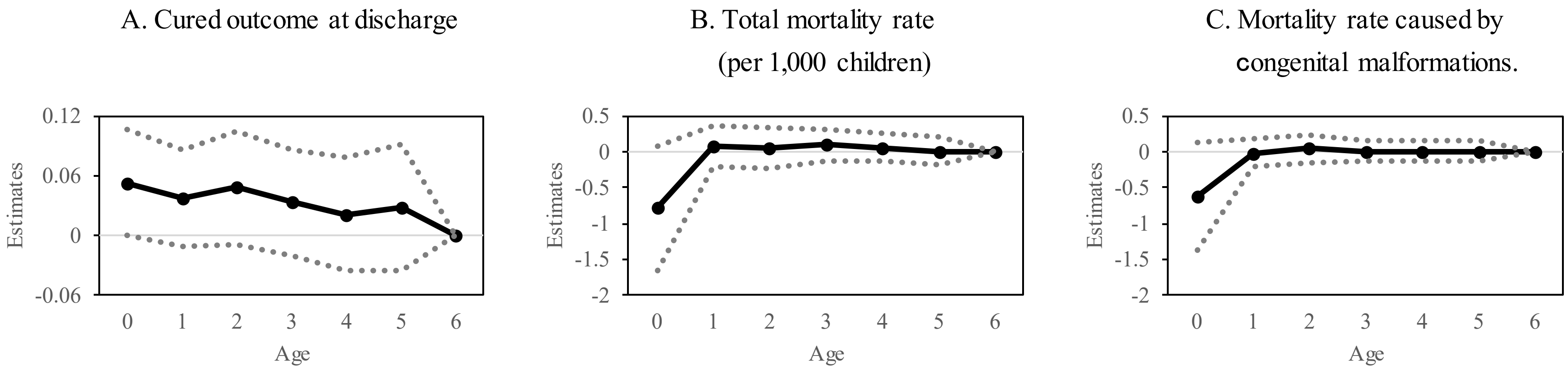


B. Inpatient use



Notes: The solid lines represent the estimates of β_a for each age (baseline: age six) derived from Equation (2). The dotted lines represent 95% confidence intervals.

Figure 2. Effect on health outcomes by age



Notes: The solid lines represent estimates of β_a for each age (baseline: age six) derived from Equation (2). The dotted lines represent 95% confidence intervals.