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The Significant Impact of Different Insurance Enrollment Criteria on the HEDIS Chlamydia Screening Measure for Young Women Enrolled in Medicaid and Commercial Insurance Plans

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Abstract

Objective: The impact of length of enrollment in a health plan on eligibility of women under the Healthcare Effectiveness Data and Information Set (HEDIS) chlamydia screening measure is not fully understood. We assessed the representativeness of the measure among the proportion of women aged 15 to 24 years with a gap in coverage for Medicaid and commercial health insurance.

Methods: Truven Health Marketscan Medicaid and commercial health insurance data from 2006 to 2012 were used to make comparisons between proportions of women with a gap in coverage to those enrolled in insurance plans for different numbers of months.

Results: Approximately 48% of Medicaid-insured women and 31% of commercially insured women had an at least 2-month gap that disqualified them from eligibility for inclusion in the HEDIS chlamydia screening measure. Extending eligibility to women with at least 6 months of coverage, regardless of gap, would increase the proportion of insured women included in the HEDIS measure to 76% (from 52%) for Medicaid and 83% (from 69%) for commercial insurance, without much effect on chlamydia testing rate. This would make the measure more representative of all insured women.

Conclusions: The large proportion of young women who had a 2-month or greater gap in coverage in Medicaid had a significant impact on the overall representativeness of the current HEDIS chlamydia screening measure.

Chlamydia trachomatis is the most reported bacterial infection, with more than 1.4 million cases reported in the United States in 2013.¹ The chlamydia cases are more common among 15- to 24-year-old adolescents and young adults.^{2,3} Untreated infections can lead to comorbidities, such as pelvic inflammatory disease, and its sequelae of chronic pelvic pain, ectopic pregnancy, and infertility for women. Because of the asymptomatic nature of chlamydial infection, the Centers for Disease Control and Prevention (CDC) and other

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organizations, such as the American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, and the US Preventive Services Task Force, have recommended annual chlamydia screening for all sexually active women 25 years or younger.⁴⁻⁷

To monitor chlamydia testing, the National Committee for Quality Assurance, a nonprofit entity dedicated to the improvement of health care quality in the United States adopted the Healthcare Effectiveness Data and Information Set (HEDIS) performance measure for chlamydia screening for all sexually active young women.⁸ The HEDIS measure for chlamydia testing represents the continuously enrolled and sexually active young women who were tested for chlamydia in the measurement year. The current HEDIS measure for chlamydia screening is defined to exclude women enrolled with 1 gap of at least 46 days or multiple gaps in a commercial health plan or women enrolled with 1 gap of at least 2 months or multiple gaps in Medicaid plans in the measurement year.⁸ The HEDIS enrollment criterion is designed to achieve the balance of health care utilizations captured during the measurement year and the numbers of women classified as eligible for chlamydia testing measure. If the enrollment criterion changed to include only women with 365 days of enrollment coverage, the number of eligible women included would be much smaller than the number of women included under the current criterion. This change would also make the eligible women have more complete health care utilization. The proportion of women with commercial and Medicaid insurance plans who are included in the HEDIS measure for chlamydia screening among all women, to our knowledge, has not been fully examined. If a large proportion of insured women are excluded from the HEDIS measure, it could weaken the value of the measure itself as an indicator of the likelihood of receiving chlamydia screening because the measure might not represent the generalized insured population.

To better understand and improve the representativeness of the current HEDIS measure for chlamydia screening, we sought to estimate and compare the proportions of young women who had a gap of at least 2 months of coverage in commercial or Medicaid insurance plans. We also examined the differences in the proportion of women with a gap of at least 2 months in coverage versus annual enrollment for at least 6 months and at least 9 months. Furthermore, we assessed sexual activity and the HEDIS chlamydia screening pattern by different enrollment coverage measures for Medicaid and commercial health plans.

METHODS

Truven Health MarketScan commercial and Medicaid data from 2006 to 2012 used for this study include patient enrollment and claims data (inpatient services, outpatient claims, and outpatient prescriptions). The commercial database consists of 100 large employers enrolling approximately 40 million people from health maintenance organizations, preferred provider organizations, and point-of-service and fee-for-service insurance plans. The Medicaid database includes approximately 7 million Medicaid beneficiaries from 10 to 12 unidentified states.⁹⁻¹¹ The database includes health-related information, such as places of service, physician or hospital visits, diagnosis codes, procedure codes, retail or mail order prescription drugs, provider information, and other billing-related information. Each

enrollee was assigned a unique identification number which provided links across different data files.^{9–11}

We analyzed data for women aged 15 to 24 years in the 2006–2012 commercial and Medicaid databases. Although the HEDIS measure applies to women aged 16 to 24 years at the end of the measurement year, we included women aged 15 to 24 years in this study because the data we used do not have birthday information and we need consider many women aging into 16 years at the end of the measurement year. We grouped all women aged 15 to 24 years, based on their health insurance coverage, in 2 ways: (1) women with 1 or more gaps of coverage lapses of 2 or more months, herein referred to as a 2-month gap in coverage, versus women without a 2-month gap, and (2) women with a total of 0 to 5 months of enrollment, 6 to 8 months of enrollment, and at least 9 months of enrollment throughout the year. We determined gaps based on the monthly enrollment variable (0 = not enrolled, 1 = enrolled). If a person had a 2 consecutive months indicating not enrolled, we included them as individuals with a 2-month gap as indicated by first group. Any inclusion for the second group was not based on the gap or gaps in coverage. The second group was further analyzed as at least 6 months (6–8 months of enrollment and 9 months combined) and at least 9 months. For example, a woman with 5 months of enrollment, then a gap of 3 months, and then another period of enrollment of 4 months would be included in the 9-month group. Women with coverage lapses of 2 months or greater for Medicaid are not considered continuously enrolled, so they are ineligible for inclusion in the current HEDIS measure for chlamydia screening. For comparison, we also used 2 months as the enrollment criterion for the commercial insurance, although the current criterion for women enrolled in the commercial insurance is 45 days or greater. Using the HEDIS measurement specifications, only the women with at least one claim during the year were included for sexually active consideration.

Following HEDIS specifications, women were classified as sexually active if they had a diagnosis, procedure, or prescription code for any of the following during that year in the inpatient services, outpatient claims, or prescription claims data: (1) pregnancy, (2) sexually transmitted disease, (3) infertility, (4) Papanicolaou test, or (5) contraceptive use.⁸ Using the procedure codes, we traced chlamydia testing among the sexually active women and calculated proportions of sexually active women who were tested for chlamydia (chlamydia testing rate). We compared the Medicaid and the commercial claims to observe and understand coverage differences based on the coverage gap and the annual months of enrollment, and we assessed sexual activity and the chlamydia testing trends by the 2 insurance coverage measures. We used SAS version 9.3 for all analytical procedures. The χ^2 test statistic was used in data analysis, and statistically significant difference was defined as a 2-tailed probability of less than 0.05.

RESULTS

An average of approximately 3 million commercially insured women and 0.7 million Medicaid-insured women aged 15 to 24 years were identified from our annual data (Table 1). Of these women, 69.3% in commercial health plans and 51.6% in Medicaid were without a 2-month gap. Among both commercial and Medicaid enrollees without a 2-month gap,

approximately 100% of those women were enrolled for at least 9 months. Among Medicaid enrollees with a 2-month gap, 49.2% were enrolled for 0 to 5 months and 50.8% were enrolled for at least 6 months; among commercially insured with a 2-month gap, 54% were enrolled for 0 to 5 months and 46% were enrolled for at least 6 months. Women in Medicaid were more likely to have at least 6 months of coverage (76.1%) or at least 9 months of coverage (61.7%) than coverage without a 2-month gap (51.6%; Table 1). Similarly, commercially insured women were more likely to have at least 6 months of coverage (83.4%) or at least 9 months of coverage (74.1%) than coverage without a 2-month gap (69.3%).

Women aged 15 to 24 years were significantly more likely ($P < 0.05$) to experience a 2-month gap in Medicaid than in commercial health plans each year (Fig. 1). Women were significantly more likely ($P < 0.05$) to be identified as sexually active based on the HEDIS specifications if they were without a 2-month gap in coverage than if they had a 2-month gap in coverage for both Medicaid and commercial health plans (Fig. 2). Similarly, the chlamydia screening rates were significantly higher ($P < 0.05$) among women without a 2-month gap in coverage than with a 2-month gap in coverage for both Medicaid and commercial health plans (Fig. 3).

Overall, the rates of sexual activity were similar among the women without a 2-month gap (67.2%), women with at least 6 months of coverage (65.3%), or women with at least 9 months of coverage (67.6%) in Medicaid (Table 2). The rates of sexual activity were also similar between women without a 2-month gap (53.3%) and women with at least 9 months of coverage (53.2%) in the commercial health plans. The chlamydia screening rate was similar among women without a 2-month gap (44.5%), women with at least 6 months of coverage (44.7%), or women with at least 9 months of coverage (45.5%) in Medicaid. The chlamydia screening rate was also similar between women without a 2-month gap (27.2%) and women with at least 9 months of coverage (27.3%) in the commercial health plans.

DISCUSSION

This is the first study to investigate how a gap in health insurance coverage and the length of enrollment in health insurance affect inclusion or exclusion in the HEDIS measure for the chlamydia screening of young women. The results of our study reveal that only 51.0% of the Medicaid population and 69.3% of the commercially insured population were included in the HEDIS chlamydia screening, based on the current HEDIS specifications. It suggests that the current chlamydia screening measure might be too restrictive and not representative of the population, especially for the Medicaid plans. If the measure could be defined in a way that put a greater proportion of insured young women in the denominator, its representativeness of care typically received in the insurance plan would be improved. To make the data to represent the target population, new strategies for improving enrollment may be warranted that will permit more sexually active women to be captured and included in the chlamydia screening measure. Compared with the commercial health plans, Medicaid had a high proportion of women who had the 2-month gap. This phenomenon might be due to several factors. One such factor is called “churning,” a term commonly used for beneficiaries who are in and out of Medicaid coverage. This often is due to fluctuations in a

family income, life-changing events, such as marriage, job changes leading to employer-sponsored insurance, lapses in paperwork requirements for eligibility, or a family decision to drop out of the program.^{12,13} When enrollment is interrupted due to the churning, it has an impact on the length of coverage and access to medical care and medical care services, as well as on the current HEDIS measure for chlamydia screening. To reduce churning, the Centers of Medicare and Medicaid Services (CMS) authorized states to use section 1115 waivers under the Social Security Act, which gives them flexibility to allow up to 12 months of continuous eligibility for parents and other adults.^{14,15} A study has been conducted to show that the length of Medicaid coverage for children was improved when the 12 months of continuous eligibility policy was implemented.¹⁶ If similar policy is implemented for young Medicaid beneficiaries, reduction in churning and continuous enrollment for young women can be achieved. As a result of the Affordable Care Act (ACA) implementation, more states have expanded their Medicaid programs to include other nonelder adults without dependent children with incomes below 138% of the federal poverty level, and to simplify child eligibility criteria for all children up to age 19 years with 138% of the federal poverty level. This change in CMS policy and implementation of the Medicaid expansion through the ACA is expected to improve the length of coverage for a majority of the Medicaid population.¹⁷

Our study presents an alternative way to include more young women into the chlamydia screening measure by modifying eligibility criteria, without significant effect on the chlamydia screening rate. Our study results show that if women with at least 9 months of enrollment were included in the chlamydia screening measure, the number of women for the Medicaid population would increase from 51.6% to 61.7%, whereas the chlamydia screening rate among those without a 2-month gap and those with an annual enrollment of at least 9 months did not vary significantly. In addition, if women with at least 6 months of enrollment were included in the chlamydia screening measure, the number of women in the Medicaid population would increase from 51.6% to 86.1%, without significant variation in the chlamydia screening rate.

Our study also showed that the chlamydia testing rate was consistently low among Medicaid young women or commercially insured young women. The lower rates of chlamydia testing among commercially insured women and Medicaid women are consistent with previous studies.^{18,19} As previous studies indicated, interventions of improving chlamydia testing are needed to prevent more women from chlamydial infections.^{19–21}

As with any other data sources, the Truven Health Marketscan data have strengths and limitations. The main benefit of using this database is the availability of a large sample size, with complete patient health care details from different settings. Data also contain a high quality of insurance claims coding, which provides a perfect environment for a comparative study like ours. This database also has its limitations, as it provides a nonrandom sample of commercial or Medicaid claims which make it difficult to generalize to the greater US insured population. The commercial sample includes only large employers, whereas the Medicaid sample only includes 12 states, so underrepresentation of the overall population could not be avoided. Also, there is variation in the plans that are included in the database year to year, which introduces another potential element of nonrepresentativeness. The

medical services used might misclassify sexual activity and the chlamydia tests performed outside of health plans might not be captured, resulting in underestimate or overestimate of sexual activity and biased chlamydia screening rate.²² The databases lack information related to race and ethnicity, as well as sexual behavior, making it more difficult to estimate chlamydia screening among high-risk populations.^{9–11} These limitations also make it impossible to differentiate screening from diagnostic testing, but this is a limitation also shared by the HEDIS chlamydia screening measure.

In summary, our study demonstrates that when the current HEDIS measure is applied, a great number of women who had at least 2 months of gap in their health insurance coverage would have been excluded from the chlamydia screening measure. A newly implemented CMS policy and implementation of Medicaid expansion through the ACA may help to improve insurance coverage for most of the Medicaid population and, in turn, reveal that a high proportion of women from the Medicaid population would be included in the chlamydia screening measure. When coverage criteria are changed to include those women enrolled at least 6 months or at least 9 months annually, the generalizability of the chlamydia screening measure can be improved significantly. New measures that are more representative of the Medicaid population provide an opportunity for better monitoring of chlamydia screening.

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FIGURE 1.
Proportions of women aged 15 to 24 years who had no 2-month gap in coverage.

FIGURE 2.

Proportion of women aged 15 to 24 years who were identified as sexually active, 2006–2012. * $P < 0.05$ between women with a 2-month gap and those without a 2-month gap.

FIGURE 3.

Proportion of sexually active women aged 15 to 24 years who were tested for chlamydia (chlamydia testing rate), 2006–2012. * $P < 0.05$ between women with a 2-month gap and those without a 2-month gap.

TABLE 1.

Overall Proportions of Women Who Had 0–5 Months, 6–8 Months, and 9 Months of Enrollment by a 2-Month Gap Status for All Medicaid and Commercially Insured Women Aged 15–24 Years, 2006–2012

	Total Enrollees	0- to 5-mo Enrollment, %	6- to 8-mo Enrollment, %	9-mo Enrollment, %
Medicaid (n)	697,180	23.9	14.4	61.7
Gap	335,652 (48.4 [*])	49.2	29.8	21
Without gap	361,528 (51.6)	0	0	100
Commercial (n)	2,946,265	16.6	9.3	74.1
Gap	885,056 (30.7 [*])	54.0	30.3	15.7
Without gap	2,061,209 (69.3)	0	0	100

^{*} $P < 0.05$ between women with a 2-month gap and those without a 2-month gap.

TABLE 2.

Proportions of Women Who Were Identified as Sexually Active and Proportions of Sexually Active Women Who Had Chlamydia Testing by a 2-Month Gap Status and by Number of Month Enrollment for Medicaid and Commercially Insured Women Aged 15–24 years, 2006–2012

Year	Medicaid Enrollees With or Without Gap										Medicaid Enrollees With Annual Months Enrollment														
	2-mo Gap					Without 2-mo Gap					0- to 5-mo Enrollment					6- to 8-mo Enrollment					S9-mo Enrollment				
	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims		
2006	395,271	55.5	219,530	36.3	390,701	66.9	261,407	42.1	209,780	47.0	98,605	30.3	110,857	63.5	70,400	39.9	465,335	67.0	311,932	42.3					
2007	311,114	57.2	177,816	38.4	292,379	66.0	192,863	41.8	160,151	48.4	77,555	30.6	89,932	64.2	57,691	42.5	353,410	66.6	235,433	42.7					
2008	324,952	58.0	188,348	41.5	304,903	67.0	204,324	46.3	164,438	49.3	81,092	33.0	96,109	64.6	62,110	45.3	369,308	67.6	249,470	47.2					
2009	355,016	58.8	208,622	43.0	345,275	67.8	233,977	46.9	179,181	49.1	87,971	34.4	104,127	66.6	69,316	46.7	416,983	68.4	285,312	47.9					
2010	317,640	60.2	191,159	41.8	361,298	67.8	245,114	45.2	147,544	50.0	73,770	31.9	99,054	67.1	66,477	45.1	432,340	68.5	296,026	46.4					
2011	287,526	60.4	173,737	43.2	337,771	68.8	232,280	44.5	136,218	50.5	68,810	34.9	87,480	67.3	58,871	46.3	401,599	69.3	278,336	45.7					
2012	358,047	57.5	205,859	44.8	498,369	65.9	328,644	44.8	160,297	48.2	77,317	36.7	111,345	63.7	70,892	47.5	584,774	66.1	386,294	45.9					
Mean	335,652	58.2	195,010	41.3	361,528	67.2	242,658	44.5	165,373	48.9	80,731	33.1	99,843	65.3	65,108	44.7	431,964	67.6	291,829	45.5					
Year	Commercially Insured With or Without Gap										Commercially Insured With Annual Months Enrollment														
	2-mo Gap					Without 2-mo Gap					0- to 5-mo Enrollment					6- to 8-mo Enrollment					S9-mo Enrollment				
	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims	CT Test, %	Total Enrollees With claims	Sex Active, %	Sex Active, With claims		
2006	408,623	37.6	153,738	18.7	820,220	50.6	415,209	21.3	221,283	28.8	63,694	15.1	119,863	46.3	55,519	19.9	887,697	50.7	449,734	21.5					
2007	728,804	36.4	265,094	20.6	1,477,174	50.9	751,353	23.5	403,568	27.5	111,108	17.2	212,909	45.6	97,054	22.2	1,589,501	50.9	808,285	23.5					
2008	869,318	38.9	338,402	23.0	1,770,454	53.6	948,670	26.2	459,905	29.6	136,217	18.5	271,285	47.4	128,633	24.7	1,908,582	53.6	1,022,222	26.3					
2009	905,432	39.7	359,781	24.1	2,101,968	54.2	1,139,400	28.0	477,583	30.2	144,433	19.2	278,027	48.5	134,956	26.0	2,251,790	54.2	1,219,792	28.1					
2010	1,021,085	36.6	373,336	24.3	2,346,871	53.1	1,245,264	28.5	554,582	27.7	153,393	19.8	309,853	45.2	140,179	26.1	2,503,521	52.9	1,325,028	28.6					
2011	1,123,007	36.6	410,468	26.0	2,892,041	54.9	1,586,145	30.9	594,968	27.5	163,811	20.5	356,291	44.5	158,619	28.5	3,063,789	54.6	1,674,183	30.9					
2012	1,139,123	35.4	403,745	26.3	3,019,732	56.1	1,693,264	31.9	633,073	26.0	164,515	21.5	332,961	45.1	150,109	28.1	3,192,821	55.8	1,782,385	31.9					
Mean	885,056	37.3	329,223	23.3	2,061,209	53.3	1,111,329	27.2	477,852	28.2	133,882	18.8	268,741	46.1	123,581	25.1	2,199,672	53.2	1,183,090	27.3					