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Short Communication

Auto-assignment of providers in Medicaid Managed Care and factors influencing seasonal flu vaccine uptake: a retrospective analysis

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Abstract

Objectives: Over 50 million people in the USA are enrolled in a Medicaid Managed Care plan. If they do not select a primary care provider, they are auto-assigned to one. The impact of auto-assignment has largely been understudied outside the context of patient satisfaction with the insurance plan. The purpose of the study was to explore the association between auto-assignment and flu vaccination use, which will contribute to our understanding of factors influencing the COVID-19 vaccine uptake.

Methods: Retrospective data from the Enterprise Data Warehouse of a health system were obtained for adult Medicaid enrolees assigned to a Midwestern health system in 2019. Descriptive statistics, independent t-tests and tetrachoric correlations were used to explore the relationship between auto-assignment and flu vaccine receipt among a large sample of Illinois residents ($N = 7224$). The sample was then divided into those who chose their provider ($n = 6027$) and those who were auto-assigned ($n = 1197$).

Key findings: Individuals who selected their provider were deemed to have flu vaccine coverage over those who were auto-assigned (33.2% vs. 6.6%). Furthermore, among those who were auto-assigned, age, number of office visits and having chronic morbidities, including chronic obstructive pulmonary disease ($P < 0.01$), diabetes ($P < 0.01$) and heart failure ($P < 0.01$), were positively associated with flu vaccine receipt.

Conclusions: Individuals who are auto-assigned to a primary care provider are less likely to be flu vaccine recipients than those who choose their provider. This suggests that auto-assignment is a risk factor that influences vaccine receipt. This research provides perspectives for outreach efforts that target individuals who are auto-assigned to a provider.

Keywords: managed care; health policy; health services research

In the USA, over 74 million Americans are enrolled in Medicaid, with over 50 million enrolled in risk-based Medicaid Managed Care (MMC) plans.[1] However, the impact of MMC on reducing medical costs and increasing access to care is mixed.[2] Research suggests that MMC enrolees face significant challenges in understanding their coverage and accessing primary care.[3]

Illinois is one of the numerous states that has implemented mandatory MMC, meaning that enrolees have to choose a managed care plan and a primary care provider (PCP) within 30 days of enrolment. Those who do not choose a PCP are automatically assigned to an insurer and provider by the state using a sophisticated algorithm that considers multiple variables. Notably, in other states individuals who were auto-assigned a plan were less positive about their experiences, had more difficulty navigating their plan and reported a decreased quality of care.[4] Furthermore, they are more likely to switch MMC plans,[5] are less prepared to make choices and might place a lower priority on preventive care.[5, 6]

Research on the impact of auto-assignment is scarce. To the authors' knowledge, only two publications have addressed the association between auto-assignment and use,[5, 7] with only one examining more than office visits.[6] In that study, auto-assigned infants in Michigan were found to be less likely to participate in the recommended number of well-child visits and be up-to-date with required immunizations.[6] These findings suggest a possible negative association between auto-assignment and vaccine use, which is important given the current COVID-19 pandemic. Medicaid currently covers the cost of the influenza (flu) vaccine and recently, the costs for the COVID-19 vaccine. Prior research has shown that flu vaccine receipt has been linked to the willingness to take the H1N1 vaccine,[7] thus suggesting that flu vaccine uptake might also be linked to willingness to receive the COVID-19 vaccine.[8] The purpose of this study was to explore the association between auto-assignment and flu vaccination use, which will contribute to our understanding of factors that might influence COVID-19 vaccine acceptance.

Methods

A retrospective limited dataset was obtained from a Midwestern health system's Enterprise Data Warehouse (EDW), which is a central repository of integrated health data (e.g. *Epic*, *PeopleSoft* and external claims data). The sample was comprised of Medicaid patients whose primary care provider was affiliated with the health system in 2019. Auto-assigned patients were identified using a specific data indicator that the payer assigned to the patient. Both self-report and/or claims data for influenza immunization for Medicaid patients' receipt of the flu vaccine (irrespective of care location) are also retained in the EDW. Descriptive statistics were used to describe sample characteristics (Table 1). To examine bivariate relationships between flu vaccine receipt and control variables, we used tetrachoric correlations as some variables were binary. The study was reviewed by the University of Illinois College of Medicine Peoria Institutional Review Board-1 and deemed as not human subject research per federal regulations.

Results

The sample consisted of 7224 patients from 2019, including 6027 patients who selected a PCP and 1197 patients that were auto-assigned to a PCP. Data (Table 1) show that for those who selected a PCP, 2000 (33.2%) were documented as receiving their vaccine in 2019, compared to those that were auto-assigned to a PCP, 79 (6.6%). Based on an independent samples *t*-test, there was a significant difference in flu vaccine receipt between patients who selected a PCP and patients that were auto-assigned a PCP ($P < 0.01$). Note, there were also significant differences between these two subsamples ($P < 0.01$) based on age (older patients were more likely to select a PCP), gender (women were more likely to select a PCP compared to men), office visits and health conditions.

To add insights regarding relationships between those who were auto-assigned a PCP and flu-vaccine requirements, tetrachoric correlations in Table 2 show that age is positively related to flu vaccine receipt ($P < 0.05$), women are more likely to be covered ($P < 0.01$). There is a positive relationship between office visits and receipt ($P < 0.01$) and likewise; there are positive relationships between having chronic morbidities, including chronic obstructive pulmonary disease ($P < 0.01$), diabetes ($P < 0.01$) and heart failure ($P < 0.01$), with flu vaccine receipt. Subsequent ordinary least squares (OLS) regression modelling supports these findings with an adjusted $R^2 = 17.5$.

Discussion

Results from the study indicate that while most of the participants selected their PCP (79.1%), 19.9% were auto-assigned for the

Table 1 Demographic characteristics by provider assignment

Characteristics	Auto-assigned to a primary care provider $n = 1197$	Selected a primary care provider $n = 6027$	*t*-test P value
Age (years)			
Mean ± SD	38.05 ± 12.38	45.20 ± 14.50	0.01
Gender, *n* (%)			
Male	607 (50.7)	2300 (38.2)	0.01
Female	590 (49.3)	3727 (61.8)	0.01
Office visit, *n* (%)			
Yes	378 (31.6)	5096 (84.6)	0.01
Health conditions, *n* (%)			
COPD	28 (2.3)	724 (12.0)	0.01
Diabetes	46 (3.8)	1014 (16.8)	0.01
Heart failure	14 (1.2)	220 (3.7)	0.01
Flu vaccine receipt, *n* (%)			
Yes	79 (6.6)	2000 (33.2)	0.01

COPD, chronic obstructive pulmonary disease; SD, standard deviation.

Table 2 Tetrachoric correlations for auto-assigned individuals to a primary care provider

Variable	1	2	3	4	5	6	7
1. Flu vaccine receipt	-						
2. Age	0.06*	-					
3. Gender	–0.09**	0.12**	-				
4. Office visit	0.27**	–0.04	0.12**	-			
5. COPD	0.14**	0.14**	–0.05	0.15**	-		
6. Diabetes	0.21**	0.21**	0.00	0.15**	0.20**	-	
7. Heart Failure	0.10**	0.14**	0.05	0.09**	0.24**	0.30**	-

Sample is subset of the study population that were auto-assigned.

COPD, chronic obstructive pulmonary disease.

n = 1197

*$P < 0.05$. **$P < 0.01$.

calendar year. Researchers have indicated that other preexisting barriers to care may be associated with auto-assignment or the low importance placed on primary care by individuals.[5, 6] A lack of trust in public health officials, which has been shown to be related to vaccine receipt,[7] is another possible factor. Our study furthers this research by indicating that those who were male, younger, healthier and did not have a PCP visit in the study year were more likely to be auto-assigned to a provider. Within this auto-assigned category, young healthy males were also the least likely to receive a flu vaccine. Given the reported low intent to take the COVID-19 vaccine among the US population,[9] identification of those who historically have not been vaccinated is important since previous vaccine use is considered as a predictor for future use. Flu coverage of adults overall was reported as 48.4% nationally in the USA (2019–2020 season) with extensive variability among states.[10] Although, it is unknown if participants in our study were not vaccinated because the vaccine was not offered or they refused. Our study highlights that all Medicaid enrolees are at risk of not being vaccinated, with those who are auto-assigned at a significantly higher risk. Thus, targeted strategies to provide the COVID-19 vaccine to MMC enrolees should be implemented.

This study has several limitations including relying on data from one health system, focusing on Illinois's MMC program, and the potential for ascertainment bias. The generalizability of the results to other populations or settings is limited. Because of the lack of current studies related to auto-assignment, we believe these findings provide initial perspectives that are relevant within the USA and require further study.

Conclusion

As the COVID-19 vaccine becomes more available, health systems should target their outreach efforts to Medicaid enrolees who are auto-assigned since they are at higher risk of not seeking receipt of the vaccine. Encouragement for vaccine uptake by healthcare professionals via phone or video encounters could influence those who otherwise would not have contact or relationships with healthcare providers.

Author Contributions

All authors contributed substantially to the study conception, design, data interpretation and analysis and drafting of the manuscript. L.W. assumed primary responsibility for data analysis and R.F. assumed primary responsibility for data acquisition. All authors also reviewed and approved its final version.

Conflict of Interest

The authors report no conflict of interests.

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