

Do payment modalities incentivize screening for unhealthy alcohol use in ambulatory care?

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Background

- National surveys suggest that, despite recommendations, screening for unhealthy alcohol use, particularly high-quality screening, occurs infrequently in ambulatory care settings (McKnight-Eily et al., 2020, Chatterton et al. 2022).
- One oft-cited barrier to alcohol screening is misalignment of incentives, but it remains unclear which financial arrangements common in practice contribute to or alleviate this misalignment.
- A better understanding of incentives is necessary for developing policies, programs, and reimbursement schedules that improve rates of screening and the provision of quality alcohol-related care.

Objective

To investigate whether various methods of payment typical in ambulatory care encourage or discourage guideline-concordant alcohol screening in ambulatory care visits. Methods of payment considered include those that determine receipt of patient care revenue and those that determine individual physician income.

Data & Variables of Interest

Data: National Ambulatory Medical Care Survey (2015, 2016, 2018, 2019), a nationally representative cross-sectional sample of health care visits to office-based physicians.

Sample: Limited to visits by patients who are new to a practice or who had zero physician visits within the last 12 months (n=16,325). 5,718 observations missing data on covariates were eliminated. Final sample includes 10,607 visits to 1,609 physicians.

Outcome: Whether the visit included some type of alcohol screening (such as the AUDIT, MAST, CAGE, T-ACE), as indicated in the patient record form.

Payment method variables:

Potential care revenue determinants:

- Receipt of **>25% of revenue from capitation** (vs. 25% or less).
- Receipt of **>25% of revenue from Medicaid** (vs. 25% or less).

Physician income determinants:

- Physician compensated based on **share of practice billings** or workload vs. fixed salary, shift, hourly, or other time-based payment.
- Factors reflective of **productivity explicitly considered** in compensation.
- Patient satisfaction surveys explicitly considered** in compensation.
- Full or part **ownership of practice** vs. employee or contractor.

Control variables:

- Physician specialty (primary care, surgical care, medical care)
- Practice ownership (physician or physician group; medical/academic health center, community health center, or hospital; insurance company).
- Solo practice vs. multi-physician practice
- Practice has a fully electronic health record (vs. some or all paper records)
- Time spent in visit
- Patient sex, race and ethnicity, age, # of chronic conditions

Methods

- Logistic regression was estimated to test the association of screening with payment methods, adjusting for control variables. Model included year fixed effects, incorporated complex survey design, and was weighted to account for non-response.
- For sensitivity analyses, the model was re-estimated:
 - Excluding visits by individuals who are pregnant (n=223) and who had been previously diagnosed with alcohol use disorder (AUD) (n=77), as screening protocols may vary.
 - On subsample including visits to primary care physicians only (n=2,201).

Results

- Only 142 of the 10,607 visits under study had alcohol screening (2.9% of weighted sample).

Table 1. Characteristics of ambulatory care visits, n=10,607

	Included Alcohol Screening	
	No	Yes
	n=10,465	n=142
	Weighted %	Weighted %
Patient age (mean ± standard deviation)	± 23.3	± 12.6
Patient sex		
Female	58.1%	61.8%
Male	41.9%	38.2%
Patient race and ethnicity		
Non-Hispanic White	68.3%	58.7%
Non-Hispanic Black	10.7%	15.3%
Hispanic	13.5%	21.8%
Non-Hispanic Other	7.5%	4.1%
Patient has 1+ chronic conditions	51.4%	69.7%
>25% of patient care revenue from capitation	12.9%	46.9%
>25% of patient care revenue from Medicaid	15.7%	18.9%
Physician paid with share of practice billings	64.7%	65.2%
Factors that reflect productivity considered in determining compensation	56.9%	78.7%
Patient satisfaction surveys considered in determining compensation	12.1%	42.1%
Physician is full or part owner in practice	70.2%	73.2%
Physician specialty		
Primary care	34.6%	73.5%
Surgical care	31.8%	10.6%
Medical care	33.6%	15.9%
Practice owned by		
Physician or physician group	81.0%	88.2%
Medical/academic health center, community health center, hospital	7.5%	11.4%
Insurance company, health plan, HMO, or other health corporation	11.5%	0.5%
Solo practice	40.0%	24.5%
Fully electronic health record	73.9%	91.7%
Time spent in visit		
0-15 minutes	34.3%	30.4%
16-30 minutes	46.4%	52.7%
>30 minutes	19.4%	16.9%

Note: HMO=health maintenance organization.
Boldface indicates statistically significant difference at p<0.05 level compared with no alcohol screening.

- In the adjusted model, odds of screening occurring were higher in visits to physicians for whom >25% of patient care revenue came from capitation compared to ≤25% revenue from capitation (adjusted odds ratio (aOR)=6.08, 95% confidence interval (CI)=2.41, 15.31).

- Odds of screening were also higher in visits to physicians for whom patient satisfaction was used to determine compensation compared to those for whom satisfaction was not considered in compensation (aOR=3.47, 95% CI=1.47, 8.16).

- Results were consistent when sample excluded visits by individuals who were pregnant or were previously diagnosed with AUD. In model restricted to visits to primary care physicians, only receipt of revenue from capitation was significantly associated with odds of screening.

Table 2. Association of alcohol screening with income determinants, n=10,607.

	Odds Ratio
	P-value
	(95% CI)
>25% of revenue from capitation	6.076
	<0.001
	(2.412 - 15.307)
>25% of revenue from Medicaid	1.057
	0.918
	(0.368 - 3.034)
Paid via share of practice billings	1.289
	0.544
	(0.567 - 2.928)
Factors that reflect productivity considered in compensation	1.243
	0.709
	(0.397 - 3.894)
Patient satisfaction surveys considered in compensation	3.466
	0.004
	(1.471 - 8.163)
Physician is full or part owner of practice	1.496
	0.541
	(0.411 - 5.447)

Note. Table presents odds ratios, p-values, and 95% confidence intervals (CI) from logistic regression model. Model additionally controls for physician specialty, practice ownership, whether the practice is a solo or multi-physician practice, practice electronic capabilities, length of patient visit, and patient sex, race and ethnicity, age, and chronic condition burden. Model includes year fixed effects, incorporates the complex survey design, and is weighted to account for non-response.

Boldface indicates statistical significance at p<0.05 level.

Conclusions

- In a national sample of ambulatory care visits, guideline-concordant screening for unhealthy alcohol use is infrequent.
- The provision of screening is associated with the receipt of patient care revenue via **capitation** and with the consideration of **patient satisfaction** measures in determining physician compensation.
- Payment methods that reward **value** and **patient-centered outcomes**, rather than productivity, may help incentivize alcohol screening.
- However, the low rates of alcohol screening observed suggest that transitioning towards such payment models is may be one tool in the effort to improve screening rates but will likely need to be accompanied by training and other resources to facilitate screening processes.

Implications for Diversity, Health Equity, and Inclusivity

- There are well-documented disparities in alcohol treatment seeking, access, and completion by gender and by race and ethnicity as well as intersectional disparities (Vaeth et al., 2016, Gilbert et al., 2019, Delk et al., 2024).
- Given a more diverse population seeks ambulatory care, strategies that improve rates of screening and subsequent brief intervention and referral to treatment in these settings have the potential to improve health equity and inclusivity.

References Cited

- Chatterton B, Agnoli A, Schwarz EB, Fenton JJ. Alcohol screening during US primary care visits, 2014–2016. *Journal of General Internal Medicine*. 2022 Nov;37(11):3848-52.
- Delk J, Bensley K, Ye Y, Subbaraman MS, Phillips AZ, Karriker-Jaffe KJ, Mulia N. Intersectional disparities in outpatient alcohol treatment completion by gender and race and ethnicity. *Alcohol: Clinical and Experimental Research*. 2024 Feb 1.
- Gilbert PA, Pro G, Zemore SE, Mulia N, Brown G. Gender differences in use of alcohol treatment services and reasons for nonuse in a national sample. *Alcoholism: Clinical and Experimental Research*. 2019 Apr;43(4):722-31.
- McKnight-Eily LR, Okoro CA, Turay K, Acero C, Hungerford D. Screening for alcohol use and brief counseling of adults—13 states and the District of Columbia, 2017. *Morbidity and Mortality Weekly Report*. 2020 Mar 3;69(10):265.
- Vaeth PA, Wang-Schweig M, Caetano R. Drinking, alcohol use disorder, and treatment access and utilization among US racial/ethnic groups. *Alcoholism: Clinical and Experimental Research*. 2017 Jan;41(1):6-19.

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