Using the OMOP Common Data Model to Advance Research about Low Value Care Delivery

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Goals of Overuse Measurement

Ultimate Goal: To efficiently generate evidence about the *effectiveness of interventions* that reduce low value care delivery

Intermediate Goals:

- Identify and quantify wasteful practices that harm patients and increase costs.
- Inform our health systems as they work towards value-based care goals
- Contribute to a learning health system by leveraging data to inform evidence-based interventions

How Might You Be Involved?

- Participate in developing and refining measures of low-value care using electronic health record data in the OMOP Common Data Model.

- Use these measures when conducting scalable and reproducible research to reduce overuse, improve healthcare delivery, and improve patient outcomes

I've Been Measuring Overuse for a Long Time (in Claims)

Zhou M, Oakes AH, Bridges JFP, Padula WV, **Segal JB.** Regional Supply of Medical Resources and Systemic Overuse of Health Care Among Medicare Beneficiaries. J Gen Intern Med. 2018 Dec;33(12):2127-2131. doi: 10.1007/s11606-018-4638-9. Epub 2018 Sep 4. PMID: 30229364; PMCID: PMC6258607.

Segal JB, Sen AP, Glanzberg-Krainin E, Hutfless S. Factors Associated With Overuse of Health Care Within US Health Systems: A Cross-sectional Analysis of Medicare Beneficiaries From 2016 to 2018. JAMA Health Forum. 2022 Jan 14;3(1):e214543. doi: 10.1001/jamahealthforum.2021.4543.

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Oakes AH, Sen AP, **Segal JB**. The impact of global budget payment reform on systemic overuse in Maryland. Healthc (Amst). 2020 Dec;8(4):100475. doi: 10.1016/j.hjdsi.2020.100475. Epub 2020 Oct 4. PMID: 33027725; PMCID: PMC7680446.

Oakes AH, Sen AP, **Segal JB.** Understanding Geographic Variation in Systemic Overuse Among the Privately Insured. Med Care. 2020 Mar;58(3):257-264. doi: 10.1097/MLR.0000000000001271. PMID: 32106167.

Chan KS, Chang E, Nassery N, Chang HY, **Segal JB**. The state of overuse measurement: a critical review. Med Care Res Rev. 2013 Oct;70(5):473-96. doi: 10.1177/1077558713492202. Epub 2013 Jun 26. PMID: 23804290.
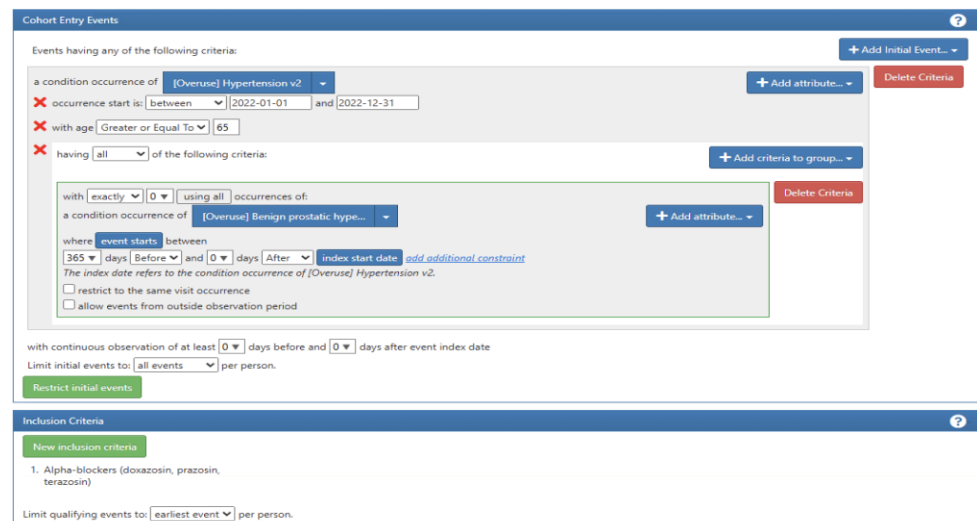
Operationalize in OMOP

Figure 1. Illustrating Measurement of Low Value Care Episodes

MRI-spine in Patient with *New* LBP	MRI-spine in Patient with *New* LBP	MRI-spine in Patient with *New* LBP
All MRI-spine	All Patients with New LBP	All Patients Attributed (by CMS) to JHM

MRI: magnetic resonance imaging, LBP: low back pain; CMS: Center for Medicare and Medicaid Services

Examples: Non-selective peripheral alpha-1 blockers

- o Recommendation
  - o Avoid use as an antihypertensive
- o Source of recommendation
  - o AGS Beers Criteria
- o Levels
  - o Clinic-level, health system-level

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Examples of Overuse Measures in OMOP

Metrics [¶]	Recommendations	N, Proportions[§] (%)				
		2018	2019	2020	2021	2022
Medications						
Antibiotics	Assesses the percentage of episodes for adult patients with a diagnosis of upper respiratory infection	13390 (63.3)	13017 (61.5)	9226 (59.2)	8079 (52.4)	10642 (57.2)
Antibiotics[*]	Assesses the percentage of episodes for adult patients with a diagnosis of acute bronchitis	8270 (62.1)	7623 (59.6)	3978 (52.3)	2550 (45.0)	4345 (54.9)
Non-selective peripheral alpha-1 blockers[†]	Avoid use as an antihypertensive	2892 (2.1)	3001 (2.1)	2426 (2.1)	2955 (2.2)	2893 (2.2)
Imaging						
DEXA	Don't use dual-energy x-ray absorptiometry in women younger than 65	1346 (1.2)	1411 (1.3)	1180 (1.1)	1709 (1.5)	1699 (1.6)
Cardiopulmonary and Neurologic Testing						
Sinus imaging	Measuring performance of sinus imaging studies for patients with acute rhinosinusitis	204 (2.3)	200 (2.1)	105 (1.5)	114 (2.0)	208 (2.6)

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- **Develop a set of measures**
  - Rigorously select from among candidate measures informed by literature review and stakeholder input
  - Collaborate with data scientists to operationalize measures using the data in the OMOP CDM building upon the existing claims-based measures
  - Explore developing an aggregate measure of low value care delivery

- **Form a workgroup (meet monthly)** to advance the use of the OMOP CDM and the ODHSI network for learning health system (LHS) science

Please response to the discussion forum (Overuse of healthcare):

https://forums.ohdsi.org/t/overuse-of-health-care/22925