Changes in Provider Behavior and Patient Outcomes Attributable to COVID-19

U01 Proposal (Simon, Skinner)
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The COVID-19 pandemic substantially disrupted health care delivery in the U.S. In the early months, roughly 50-80% of outpatient and inpatient care was canceled or deferred as patients stayed home. Visits and hospitalizations rebounded in later months, though aggregate utilization in 2021 has largely remained below pre-pandemic baseline levels. Despite these large changes in utilization and economic challenges for practices and hospitals, little is known about how the pandemic may have affected provider behavior—specifically clinical decision-making around the appropriateness of care and outcomes, notably for vulnerable populations.

On the one hand, the COVID-19 pandemic disproportionately eliminated elective care, and may have led providers to deliver, on average, higher-value care for the subset of patients who needed in-person care during the pandemic. This potential reduction in low-value care—such as unnecessary procedures, imaging, and tests—may have persisted if delayed higher-value care such as cancer screening was disproportionately provided first as patients returned to in-person care. To the extent low-value services declined population-wide, some unexpected benefits for patients and savings for society may have accrued during the pandemic.

On the other hand, the pandemic was a large negative revenue shock for many practices and hospitals, which may have induced some providers—including those under certain financial incentives such as pure fee-for-service or private equity ownership—to maximize patient visits (extensive margin) or deliver more services within visits (intensive margin) to maintain financial stability. To the extent this type of behavioral response led to additional lower value care, it has the potential to harm health, especially for vulnerable populations including racial/ethnic minority patients and older populations with dementia who may be particularly susceptible to physician or supply-side preferences.

This project measures pandemic-related changes in provider behavior and patient outcomes by combining large public and private insurer claims data with survey and epidemiological data. Outcomes of interest include high-value and low-value services in defined clinical scenarios, in which the appropriateness or value of services rendered is observable in claims (e.g. preventive services in age-appropriate situations—high value, and procedures or tests in the absence of a clinical indication—low value). These clinical scenarios are defined using clinical guidelines, in which the “gray area” of medicine is susceptible to financial and other influences. The analyses use quasi-experimental methods that treat the COVID-19 pandemic as an exogenous shock, with geographic heterogeneity based on the intensity of the pandemic. Moreover, it focuses on the distributional consequences of the pandemic’s effects especially for vulnerable populations, including racial/ethnic minority patients and older patients with dementia.

Aim 1: Within defined clinical scenarios with plausible high-value and low-value clinical options, examine changes in provider decision-making on high and low value services attributable to the COVID-19 pandemic, with particular attention to vulnerable populations including older patients with dementia. Analogously, analyze pandemic-associated changes in health outcomes in these defined clinical scenarios (e.g. adverse health events, hospitalizations, mortality, etc.). Explore heterogeneity in pandemic-associated changes by patient and provider characteristics:

Aim 1a: Compare clinical decisions for racial/ethnic minority patients (e.g. Black, Hispanic, and patients of other minority groups) to those for non-Hispanic White patients.

Aim 1b: Compare provider decision-making in organizations under global payment (e.g. Medicare ACO contracts) vs. that of providers under fee-for-service.

Aim 1c: Compare decision-making in practices and hospitals owned by private equity vs. that in practices and hospitals not owned by private equity.