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Partnered Evidence-based Policy Resource Center
A VA QUERI Center

MISSION Act of 2018 Section 401: Underserved VAMCs

SPECIALTY CARE: FY22 Model Explanation + Rankings

COVID IMPACT

The COVID-19 pandemic significantly altered health care delivery. Non-emergent care was delayed (sometimes leading to backlogs later) and virtual care modalities became critical. This impacted both Veteran demand for care and VHA supply of care. In other words, the data during this time were volatile. As such, the FY22 run of the underserved specialty care model does not use data from the COVID-19 period (February 2020 – June 2021). This exclusion helps to ensure that all model components are validated and appropriately measured. The model **does** include FY21Q4 data as analyses suggest this is when supply of and demand for care reasonably rebalanced after the brunt of the pandemic.

The FY22 list of underserved facilities should be considered within the context of COVID-19.

MODEL DESIGN

This is the first year of specialty care modeling, scoring, and ranking. This document provides underserved rankings for four specialties: cardiology, gastroenterology, orthopedics, and urology. While the underlying statistical model is the same for all four specialties, specialty-specific data are applied to the modeling approach to produce individual sets of rankings.

To account for nuances in local access, we incorporate raw wait times into our methodology. After ranking facilities using our model output, we also rank facilities by raw wait times. The final underserved rankings incorporate both. This ensures that facilities identified to Congress as underserved are flagged by both our statistical modeling and observed wait times.

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NON-NUMERICAL WEIGHTS

The underserved model produces numerical weights that describe the relative impact of each variable on the underserved score. These numerical weights are very technical, so non-numerical weights were developed to explain each variable's influence on the underserved scores more simply. The numerical weights were translated into three non-numerical weight categories: low, medium (med), and high. These are absolute value categories based on the magnitude of influence and do not demonstrate the direction of influence. For this reason, a positive or negative sign is included to explain whether the variable positively or negatively impacts the underserved score.

These are the same for all four specialties.

VARIABLE	NON-NUMERICAL WEIGHT
1. Clinic time per enrollee (physician/APP)	- HIGH
2. New patient clinic work rate (physician/APP)	- HIGH
3. Established patient visit volume per enrollee	+ HIGH
4. Veteran demand (composite score)	+ MED
5. Community care visit volume per enrollee	- LOW
6. Mental health program complexity	- LOW
7. ICU/surgical program complexity	- LOW
8. Complex clinical program complexity	- LOW
9. Facility complexity level	- LOW

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VARIABLE DEFINITIONS

The final scores and rankings are based on several independent variables that each have a unique influence on the model and scores. Some increase a VAMC's likelihood of being underserved while others reduce it.

VHA Supply Variables

These variables measure the supply of VHA care available at a VAMC. They are policy levers local management can use to improve access for Veterans.

1. **New patient clinic work rate (physician/APP)** – This variable measures the total number of new patient clinic encounters per day of clinic time (as defined below in #2) for physicians and advanced practice providers (APPs).
   a. The clinic work rate is used to estimate a VAMC's ability to provide health care to its enrollees. An important element of clinic operations, it mediates the relationship between clinic inputs (e.g., staffing) and total encounters produced by the clinic. This measure includes all in-person, virtual, scheduled, and unscheduled care provided by a physician or APP. It is based on provider-level observed data (as opposed to reported data) but is aggregated to the clinic level in the model.

2. **Clinic time per enrollee (physician/APP)** – This variable measures the total provider availability per Veteran enrollee at each VAMC for physicians and APPs.
   a. Clinic time is used to estimate a VAMC's ability to provide health care to its enrollees. This measure accounts for all physicians and APPs who generate workload in specialty care clinics and incorporates in-person, virtual, scheduled, and unscheduled care. It is based on provider-level observed data (as opposed to reported data) but is aggregated to the clinic level in the model.

3. **Established patient visit volume per enrollee** – This variable measures the number of established patient visits per Veteran enrollee in a specialty care clinic.
   a. Established patients in specialty care are defined as patients with a visit to the same specialty within the past two years. Established patient scheduling practices directly influence new patient wait times. A higher volume of established patients suggests there may fewer appointments available for new patients.

4. **Community care visit volume per enrollee** – This variable measures the number of community care visits purchased by VHA facility per Veteran enrollee.
   a. Under the MISSION Act, Veterans are eligible to use community care under certain circumstances. The number of community care visits a VAMC purchases for Veterans who might otherwise rely on VHA providers, may influence the availability of those providers to serve other patients.

5. **Mental health program complexity** – This variable calculates the complexity of the mental health (MH) services provided at a VAMC.

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6. **ICU/surgical program complexity** – This variable calculates the availability and complexity of both ICU care and surgical care provided at a VAMC.
7. **Complex clinical program complexity** – This variable calculates the number of complex clinical programs provided at a VAMC.
8. **Facility complexity level** – This variable uses the Clinical Complexity Index to measure the type of care a facility offers to its Veterans.
   a. Accounting for patient population, clinical services complexity, and education and research, the Clinical Complexity Index allows VHA to rank facilities based on the type of care they offer to Veterans. Facilities are ranked as 1a, 1b, 1c, 2, or 3, from most complex to least complex.

Veteran Demand Variables

These variables impact Veteran demand for VHA care. Local management teams have little control over these factors. Instead, they provide context within which managers can assess the appropriate amount of supply needed to care for their Veterans. They also ensure we account for local differences when measuring underservedness.

1. **Veteran demand (composite)** – The variable is a composite measure of Veteran demand for specialty care at a facility. Many factors influence a Veteran's likelihood to rely on VHA for care. The individual variables included are below.
   a. *Alternative health insurance coverage and availability* – This variable measures the percentage of a VAMC's enrolled Veteran population with private health insurance coverage or coverage under another government-sponsored health plan.
   b. *Average drive time to specialty care* – This variable measures the average drive time to a VHA facility that offers specialty care for a VAMC's enrolled population.
   c. *Medicare Advantage community penetration rate* – This variable measures the percentage of eligible individuals who have Medicare Advantage coverage in the area surrounding a VAMC.
   d. *Veteran enrollee demographics* – These are characteristics of the Veteran population in the facility area such as age, race/ethnicity, gender, and marital status.
   e. *Veteran enrollee income* – This variable measures the average income of a VAMC's enrolled Veteran population.
   f. *Veteran enrollee employment* – This variable assesses the rate of employment (full-time and part-time) for a VAMC's enrolled Veteran population.
   g. *CMS-HCC Risk Score* – This variable estimates the medical complexity of a Veteran to predict the amount of health care s/he will likely need.
   h. *Zillow Home Value Index* – This variable indicates areas throughout the country where median home values are increasing or decreasing.
   i. *HPSA score* – This variable identifies Health Provider Shortage Areas (HPSA), geographical areas with an insufficient number of providers based on population size and an overutilization or inaccessibility of existing providers.

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j. *Number of enrollees* – This variable measures the number of enrolled Veterans at a VAMC.

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