Data & Methods: Medicaid Contraception Workforce Tracker

Introduction

The Medicaid Contraception Workforce Tracker monitors the location, clinician specialty, density, and percent participation of the workforce providing contraception services to the Medicaid population from 2016 – 2020. The tracker allows researchers and others to compare the workforce providing 5 types of contraception services across states and counties, clinician types, and year.

Language note: In the tracker and this document, we use the term "female" to describe the population utilizing reproductive health services. We recognize that women are not the only people who need contraception services and seek to be inclusive of all genders. The datasets that this tool is based on use a binary indicator for sex.

Measures

The tracker allows users to look at two measures of the workforce providing reproductive health services to the Medicaid population.

1. Provider to population ratio: Number of Medicaid contraception providers with claims for (1) the contraceptive pill, patch, ring, (2) IUD insertion, or (3) implant placement in a calendar year (2016 – 2020) per 100,000 Medicaid female population of reproductive age (15-44) at the state or county level.
2. Percent participation: Number of Medicaid contraception providers with claims for (1) the contraceptive pill, patch, ring, (2) IUD insertion, or (3) implant placement in a calendar year (2016 – 2020) as a proportion of three different denominator options – (1) all providers (from NPPES), (2) all Medicaid providers (from the Medicaid Primary Care Workforce Tracker), or (3) all reproductive health Medicaid providers (all providers in [2] who saw at least one reproductive aged female), at the state or county level.

Data Sources

Transformed Medicaid Statistical Information System (T-MSIS) Analytical Files

T-MSIS is a national dataset that collects Medicaid and Children's Health Insurance Program (CHIP) data from U.S. states, territories, and DC. T-MSIS includes data on enrollment, demographics, service utilization, providers, fee-for-service payments, and managed care plans. We used 2016-2020 T-MSIS Other Service (OT) and Prescription (RX) files to identify primary care clinicians who provided (1) the contraceptive pill, patch, and/or ring, (2) intrauterine device (IUD), or (3) implant. The OT file includes professional/physician services provided in inpatient and outpatient settings. The RX file contains prescribed drugs filled at a pharmacy. We also used Annual Provider Files to improve servicing provider data quality. In addition, we used Demographics and Eligibility (DE) Files to identify the reproductive health aged (15-44) female Medicaid population at the state and county level.

National Plan & Provider Enumeration System (NPPES)

NPPES is a national administrative dataset. The Health Insurance Portability and Accountability Act of 1996 (HIPAA) mandated the adoption of a standard unique identifier for health care providers and health plans for electronic transmission of health information. CMS developed the NPPES to assign these unique identifiers – National Provider Identifier (NPI). The NPPES

provides mailing and practice address information, healthcare provider credentials, and provider type. We used NPPES to identify clinician primary care profession/specialty and non-Medicaid providers.

Database Construction

Reproductive Health Services

Services were identified by NDC codes (for prescription contraception), CPT codes (for IUD insertion), or by CPT and ICD-10 codes (for implant placement).

Table 1. CPT and ICD-10 codes by service type.

Service Type	CPT Codes	ICD-10 Codes
Pill, patch, ring	NDC codes from Office of Population Affairs Contraceptive Provision Performance Measures	
IUD insertion	58300	N/A
Implant placement	J3707, J3706	N/A
	11981, 11983	Z30.17, Z30. 18, Z30.19, Z30.46, Z30.49, Z30.8, Z30.9, Z30.40

Medicaid Providers

We used the same methodology as the Medicaid Primary Care Workforce Tracker. Some providers could not be assigned to counties because the FIPS code in the Medicaid data did not correspond to an actual county; however, these providers were assigned to states based on the two-digit FIPS code of their county FIPS code. These providers were assigned to a dummy county (in the downloadable dataset available upon request here, these providers are in counties with FIPS codes ending in "999"; e.g., the providers that could not be assigned to a county in Minnesota are assigned to county 27999). While these providers are not included in the county-level maps/counts, they are included in state-level maps/counts.

Provider Specialty

We determined provider specialty by merging NPIs with NPPES. We identified primary care providers, including family medicine physicians, internal medicine physicians, OBGYNs, pediatricians, nurse practitioners (NPs), advanced midwives, and physician assistants. Advanced midwives include certified nurse midwives, certified midwives, advanced practice midwives, and clinicians who are dually certified as advanced midwives and NPs. NPs include clinicians who are NPs only (i.e., they are not dually certified as advanced midwives and NPs). We excluded family medicine, internal medicine, and pediatric physicians whose percent E&M services in the emergency room or inpatient settings was >90% in the Medicare Part B PUF and T-MSIS OT files (i.e., primarily emergency or hospitalist physicians).

Limitations

T-MSIS

While T-MSIS is the most comprehensive national Medicaid database, it has known data quality (DQ) issues tracked by CMS in the DQ Atlas, including missing NPIs. When available, we used the Annual Provider (APR) File to link state unique provider IDs to NPIs to improve DQ.

We also created our own proprietary measure of DQ for each state's contraception provision by year. After filling in missing NPIs using the APR file, we first flagged states with at least 20% missing individual NPIs for each contraceptive service by year and service type as low DQ states. We then flagged states with at least 20% change in providers from one year to the next as low DQ states. We did not use this measure for 2020 because of disruptions in the typical

healthcare environment due to COVID-19. Low DQ states appear in gray on the map and are excluded in calculations of national averages or trends in the section below the map.

Table 2. Low data quality states by measure and service type, 2016 – 2020.

Year	Service Type	Missing or Organizational NPI	Percent Change
2016	Prescription	DC, FL, GA, KY, ME, NH, RI, VA, WI	MS, MT, NC, ND, VT
2016	IUD	AR, DC, IA, MN, NJ, PA, SD, UT, WI, WV	CO, MA, MI, MS, ND, RI, TN, VT
2016	Implant	AL, AR, DC, GA, IA, IL, LA, MA, MD, MN, NJ, PA, SC, SD, UT, WI, WV	AK, AZ, CO, CT, FL, ID, MI, MO, MS, ND, NV, RI, TN, VT
2017	Prescription	FL, ME, NH, VA	
2017	IUD	AR, DC, IA, IN, MN, NJ, PA, UT, WI, WV	FL
2017	Implant	AL, AR, DC, GA, IA, IL, IN, LA, MA, MD, MN, NJ, PA, SC, SD, UT, WI	AK, FL
2018	Prescription	FL, ME	VA
2018	IUD	DE, IN, MN, NJ, UT, WI	FL, OH
2018	Implant	AL, DC, DE, GA, IA, IL, LA, MA, MD, MN, MT, NJ, OH, SC, SD, TX, UT, WI	FL
2019	Prescription	FL, ME, NH	
2019	IUD	DE, MN, NJ, UT, WI	
2019	Implant	AL, DC, DE, GA, HI, IA, IL, LA, MA, MD, MN, MT, NJ, SC, SD, TX, UT, VA, WI	FL
2020	Prescription	FL, ME, NH	N/A
2020	IUD	DE, MN, NJ	N/A
2020	Implant	AZ, DE, GA, HI, IA, IL, MA, MN, MT, NJ, SD, TX, WI	N/A

NPPES

All physician databases have known challenges regarding the accuracy of provider specialty and contact information (e.g., address). In comparing three datasets, NPPES was comparable to SK&A (now IQVIA OneKey), and both were more accurate than the AMA Masterfile. However, across all three datasets, only 65% of physicians' addresses in their sample could be confirmed by phone, with 21% no longer at the practice location. NPPES likely overcounts the total number of providers used in the % Participating measure. Advanced practice nurses and physician assistants present an additional challenge as they are less likely to self-identify a specialty area. Therefore, we likely overestimate the number of advanced practice clinicians in primary care.

Medicaid Population

The number of reproductive health-aged female Medicaid beneficiaries is sensitive to state policies (e.g., Medicaid eligibility, expansion status, family planning waiver). States with more generous Medicaid eligibility will have a relatively larger denominator. In addition, this measure may be sensitive to year-to-year variation in Medicaid population estimates. Particularly for smaller counties, changes in the Medicaid population can result in large changes in provider per population measure.

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