Supplemental Online Content

Powers BW, Drzayich Antol D, Zhao Y, et al. Association between primary care payment model and telemedicine use for Medicare Advantage enrollees during the COVID-19 pandemic. *JAMA Health Forum*. 2021;2(7):e211597. doi:10.1001/jamahealthforum.2021.1597

eMethods.

This supplemental material has been provided by the authors to give readers additional information about their work.

© 2021 Powers BW et al. *JAMA Health Forum.*

eMethods.

Cohort Identification and Attribution

We began by identifying 1,984,914 patients who met all of the following criteria: enrolled in a Humana health maintenance organization (HMO) plan with an individual policy from 1/1/2019 to 9/30/2020; age 65 or older on 1/1/2020; not enrolled in hospice at any point from 1/1/2019 to 9/30/2020; and not attributed to a primary care organization to which Humana delegates claims. From these 1,984,914 patients, we excluded 853,538 who lacked continuous enrollment from 1/1/2019 to 9/30/2020. We required continuous enrollment from 1/2019 to 12/31/2019 in order to observe a full year of claims from which to construct comorbidity data. We required continuous enrollment from 1/1/2020 to 9/30/2020 to observe all telehealth claims over the period of interest.

HMO plans require patients to select a primary care clinician, which we used to attribute the remaining 1,131,376 patients to a primary care clinician. We lacked attribution data for 5,238 patients, who we excluded from the analysis. We excluded 192 patients who resided in Dartmouth Hospital Referral Regions (HRRs) where all patients had either 0 or 1 qualifying telemedicine visits. The final study population was 1,125,946 patients.

Since payment models are administered at the level of the contracting organization, we then attributed patients to a primary care organization based on the affiliation of their primary care clinician. These organizations could be exclusively primary care practices, or multi-specialty group practices.

Payment Model Taxonomy

We used contract data to identify the payment model under which the primary care organization was reimbursed for the patients care. We classified payment models according to the following taxonomy, in which payment models are ordered by increasing levels of accountability for cost and quality outcomes: fee-for-service; shared savings with upside-only financial risk; shared savings with downside financial risk; or capitation. We considered shared savings with downside financial risk and capitation to represent advanced value-based payment models. Below is a description of the taxonomy used to classify primary care organization payment model.

- *Fee-for-Service* – Primary care organizations receive fee-for-service (FFS) payments for services provided. They may or may not receive additional compensation for meeting quality measures.

- *Shared Savings (Upside Only)* – Primary care organizations receive fee-for-service (FFS) payments for services provided and additional compensation for meeting quality measures. They can receive additional bonus payments if spending for their attributed population is below a determined benchmark.

- *Shared Savings (Downside)* – Primary care organizations receive fee-for-service (FFS) payments for services provided and additional compensation for meeting quality

© 2021 Powers BW et al. *JAMA Health Forum.*

measures. They receive additional bonus payments if spending for their attributed population is below a determined benchmark, and pay a penalty if spending is above the benchmark.

- *Capitation* – Primary care organizations take full financial responsibility for total spending, through capitated, quality-adjusted payments.

Identifying Telemedicine Visits

We used Common Procedural Terminology (CPT) codes from paid outpatient claims to identify telemedicine visits. We included both audio-visual and audio-only visits. Audio-only visits were identified using CPT codes 99441-99443. Audio-visual visits were identified using the modifier codes GT, GQ, or 95 on the following eligible outpatient visit codes: '77427', '90954', '92012', '96127', '97112', '97802', '99473', 'G0438', '90785', '90955', '92012', 96130', '97155', '97803', '99483', 'G0439', '90791', '90956', '92014', '96131', '97156', '97804', 99495', 'G0442', '90792', '90957', '92507', '96132', '97157', '99201', '99496', 'G0443', '90832', 90958', '92508', '96133', '97158', '99202', '99497', 'G0444', '90833', '90959', '92521', '96136', 97161', '99203', '99498', 'G0445', '90834', '90960', '92522', '96137', '97162', '99204', '0373T', G0446', '90836', '90961', '92523', '96138', '97163', '99205', 'S9152', 'G0447', '90837', '90962', 92524', '96139', '97164', '99211', '0362T', 'G0506', '90838', '90963', '92601', '96156', '97165', 99212', 'G0108', 'G0513', '90839', '90964', '92602', '96158', '97166', '99213', 'G0109', 'G0514', 90840', '90965', '92603', '96159', '97167', '99214', 'G0270', 'G2086', '90845', '90966', '92604', 96160', '97168', '99215', 'G0296', 'G2087', '90846', '90967', '94005', '96161', '97530', '99354', G0396', 'G2088', '90847', '90968', '94664', '96164', '97535', '99355', 'G0397', '97116', '90853', 90969', '96110', '96165', '97542', '99406', 'G0410', '97150', '90875', '90970', '96112', '96167', 97750', '99407', 'G0420', '97151', '90951', '92002', '96113', '96168', '97755', '99441', 'G0421', 97152', '90952', '92004', '96116', '96170', '97760', '99442', 'G0436', '97153', '90953', '97154', 96121', '96171', '97761', '99443', 'G0437'.

To be included in our analysis, visits had to be conducted by a clinician affiliated with the attributed primary care organization. We did not restrict based on the specialty or type of clinician (e.g. physician vs. nurse practitioner).

© 2021 Powers BW et al. *JAMA Health Forum.*