Author’s response to reviews

Title: Validation of Use of Billing Codes for Identifying Telemedicine Encounters in Administrative Data

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Author’s response to reviews:

Thank you for the opportunity to respond to the reviewers’ comments on our manuscript. We have responded to individual items below, and believe that this process has strengthened our manuscript.

Reviewer 1: Overall, the authors have presented a clear and concise paper on the validity of using administrative CPT codes and modifiers to correctly identify telemedicine encounters within their institution.

&gt;Thank you.

There are some minor revisions which may strengthen the paper.
The authors refer to "charts" reviewed, it is more specific to state "encounters" reviewed. If chart is used, it implies that multiple telemedicine encounters could have been sampled from the same patient.

&gt;Thank you. We agree with the reviewer that clarifying our unit of review as “encounters” is more accurate than “chart.” We left a few references to “chart review” as a general reference to the step of manually reviewing clinical information, but updated all text and tables to reflect that such manual review occurred at the encounter level. (Changes made throughout manuscript text, as well as in Tables 1-3).

Were there any exclusions in the encounters that were sampled? For example, how did you treat any potential technical failures? If the patient was unable to connect in a live telemedicine encounter, is there any possibility a billing CPT code could have still been dropped?

&gt;If clinical documentation was not available for a sampled encounter, we selected a replacement encounter, because review of encounter documentation was not possible in that circumstance. Documented technical failures would have been assessed based on the billing codes entered and the clinical services that actually occurred; however, we did not identify any encounters where technical failure was documented. Additionally, there were no sampled GT encounters where clinical documentation was not available, and only 2 GQ encounters where clinical documentation was not available, compared to 22 charts with no modifiers that required resampling.
We updated the methods to reflect this: “Sampled encounters with no available clinical documentation were replaced with another randomly-selected encounter from the same sampling strata, with 2 additional GQ encounters, no additional QT encounters, and 22 additional encounters with neither modifier sampled.” (Methods, Page 10, Paragraph 1).

Please give some additional detail in the Methods section on the telemedicine platforms that were utilized in this study. Were they consistent across departments? Again, do you have any data on the technical failure rate?

We added within the methods section that multiple electronic health record systems and multiple telemedicine platforms are used across this system. Our analysis was not confined to a specific EHR or a specific telemedicine platform and instead looked at billing codes and clinical documentation across the system. To address this reviewer comment, we added the following text to the methods: “Multiple electronic health records are used across inpatient and outpatient services within this system, and our analysis was not limited to a specific electronic health record or a specific telemedicine platform.” (Methods, page 6, paragraph 3 – page 7, paragraph 1).

Please provide some context with regards to telemedicine parity laws within your state. It is surprising that the telemedicine median copay was zero.

Pennsylvania does not have telemedicine payment parity. Given that payment is not the focus of this analysis, we removed payment from table 4 because we agree with the review that these data points warrant more detailed investigation and discussion than this analysis allows. (Table 4)

On page 17, line 44-46, make explicit that telemedicine reimbursement during this time was limited to health care shortage areas.

We revised to indicate the geographic limitations in place through both Medicare and Pennsylvania Medicaid during the study period: “Specifically, Medicare telemedicine reimbursement was limited to health professional shortage areas during the study period, and Pennsylvania Medicaid policy in place during the study period suggests that providers should consider travel time greater than 60 minutes in rural areas or greater than 30 minutes in an urban area when considering telemedicine use.” (Discussion, Page 18, paragraph 1)

It is surprising that the median reimbursement for live telemedicine visits appears higher than that in person visits. Intuitively, it would seem that telemedicine visits would reimburse less due to downcoding due to the fewer organ systems that can be examined via telemedicine than during an in person visit. It may be interesting to see how many of these were time based coding vs HPI/ROS/PE/MDM level based coding.

We suspect the difference in reimbursement are due to the distribution of inpatient versus outpatient visits and the level of complexity during visits, but because payment was not the focus of this analysis, we removed the two lines of payment data from table 4 to provide a more focused analysis. (Table 4).

Reviewer 2:
1. Include rationale for excluding codes used by allied health professionals such as pharmacists

We added rationale as requested, so that the revised methods states the following: “We did not
investigate CPT codes designed for use by allied health professionals (e.g., G0270) to allow more focused study and because of the potential for such services to be documented outside of systems available for manual review.” (Methods, page 7, paragraph 2).

2. Correct typos throughout document

&gt; Thank you. We reviewed and corrected typos throughout.