Center for Patient-Reported Measures of Diagnostic Excellence
Johns Hopkins University
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Honorable Mehmet Oz, M.D.
Administrator
Centers for Medicare & Medicaid Services
7500 Security Boulevard
Baltimore, MD 21244-1850

RE: CMS-0042-NC; RIN 0938–AV68; Health Technology Ecosystem

Dear Dr. Oz,

The Center for Patient-Reported Measures of Diagnostic Excellence at Johns Hopkins University deeply appreciates the opportunity to comment on the ongoing discussion surrounding the integration of technology in healthcare, particularly focusing on the imperative of empowering patient voices to enhance patient safety. Recognizing the collective efforts of numerous patient advocacy organizations, such as Patients for Patient Safety US, Mothers Against Medical Errors, Patient Safety Action Network, and the Beryl Institute Patient Experience Forum, we assert that there is an urgent and compelling need to enhance how patient feedback is captured and utilized. This will foster improved patient safety and elevate the quality of care provided within our healthcare systems.

The current situation reveals a stark absence of robust mechanisms that empower patients and their families to report harmful events, resulting in significant gaps in data quality and oversight in patient safety. Systematic barriers experienced by patients often inhibit their voices from informing safety monitoring processes. In this context, we contend that integrating technology, specifically through the employment of patient-reported measures augmented by artificial intelligence (AI), offers a promising pathway to bridge existing gaps and facilitate better engagement of patient voices in healthcare. This AI-augmented patient-reported measurement strategy is foundational to making care safer and closing quality gaps for all patients.

Evidence of Technological Innovations Revolutionizing Patient-Reported Measures

Artificial Intelligence (AI) represents a transformative opportunity that enhances how patient feedback is collected and utilized in various healthcare settings. A growing body of evidence suggests that the integration of these technologies can yield valuable insights regarding patient safety events that frequently go unreported:

1. The study titled "Analyzing patient experiences using natural language processing: development and validation of the artificial intelligence patient-reported experience measure (AI-PREM)" highlights the validity and the profound impact of AI in synthesizing patient feedback, enabling healthcare providers to obtain immediate insights into patient experiences and safety concerns (Van Buchem et al., 2022).
2. Insights from the "Using patient-reported measures to drive change in healthcare…" study underscore the importance of continuous and systematic PREMs observations in leveraging patient feedback to affect quality improvement significantly (De Rosis et al., 2020).
3. The recent reviews, “Chatbots in Health Care: Connecting Patients to Information…” and “The Role of Artificial Intelligence in Improving Patient Outcomes…” highlight the effectiveness of chatbots in healthcare settings and the role of voice recognition technologies in enhancing patient communication and experience. (Clark & Bailey, 2024; Gala et al., 2024)
4. There is an expanding evidence base regarding the utilization of Natural Language Processing techniques for extracting and analyzing patient experiences and sentiments from various data sources. (Nawab et al., 2020; Jefry et al., 2024)

Exploiting AI to Enhance Patient Experience Surveys

Given the substantial advancements made in AI technology, we believe there exists a robust opportunity to enhance the data collection and processing framework of existing patient experience surveys—such as the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)—and other CAHPS surveys. Enhancements to that framework will lead to the following:

1. Collecting More Responses

AI technologies can increase survey response rates through diverse collection methods:

- **AI Chatbots**: Deploying AI chatbots enables 24/7 engagement with patients, providing them with the opportunity to respond to surveys at their convenience. Chatbots can conduct conversational interviews to collect feedback in real-time, enhancing patient willingness to engage.
- **Voice Recognition Technologies**: Utilizing voice recognition offers an alternative collection method for patients who may have difficulties with traditional survey formats. This mode is particularly beneficial for individuals with disabilities or those with literacy challenges.

- **Adaptations for Language Proficiency**: AI can facilitate translations and provide materials in multiple languages, ensuring that language barriers do not hinder patient participation. By adapting questions to accommodate various levels of language proficiency, AI ensures broader representation of patients and their voices in feedback collection.
- **Selecting Relevant Questions:** AI systems can optimize the survey process by selecting the most pertinent questions from HCAHPS ensuring that those are answered first and alleviating the survey fatigue from answering all the questions. AI system are able to identify trends from previous patient responses, enabling a tailored survey experience that focuses on areas highlighted by patients as most critical.

2. Analyzing Unstructured Free Text Responses

AI possesses the capability to analyze patient narratives from unstructured data, identifying sentiments, topics, and specific concerns articulated in free-text responses. AI enables mapping those patient narratives onto HCAHPS response options, making it possible to summarize complex patient experiences into quantifiable measures, ensuring that the rich, qualitative feedback does not get lost in translation. AI enhances patient storytelling and using qualitative insights for structured assessment of patient safety and quality of care.

3. Real-time Responses and Patient Engagement

AI tools can provide immediate responses to patient inquiries based on their survey feedback. This real-time engagement helps patients feel heard and valued, improving their overall experience. Surveys can be processed efficiently, and patients receiving tailored information and responses can build trust and satisfaction. Engaging patients in a dialogue after survey completion assures them that their feedback carries weight; this not only enhances their willingness to participate again but also leads to improved patient-provider relationships.

4. Improving Performance Assessment and Predictive Modeling

AI-driven patient-reported data can be paired with other safety and quality data sources, enabling healthcare organizations to assess performance comprehensively. By merging patient-reported feedback with clinical data, patient demographics, and even external benchmarks, healthcare providers can develop predictive models that identify potential issues before they escalate into actionable safety concerns.

5. AI-Assisted Patient Support for Prevention

Beyond capturing and analyzing patient-reported data, AI can help provide targeted responses and support. When AI systems identify specific needs or concerns articulated in patient feedback, they can automatically generate educational materials. Tailoring resources such as FAQs, symptom management tips, or self-care guidelines to the context of the patient's feedback fosters a more informed and engaged patient population. This is especially promising in the context of promoting evidence-based prevention and empowering people to achieve their health goals, delineated in Make America Healthy Again.

Counterarguments to Administrative Burdens of Patient-Reported Measurement

While concerns about the administrative burden associated with suggested enhancements may be raised, we argue that the capture of patient experiences should not be viewed as an additional burden. Instead, it must be recognized as an essential investment in safety and quality improvement. Any arguments about wastefulness or burdensome processes must be balanced against the critical need for comprehensive patient engagement and proactive collection of their valuable insights about their health care experiences and outcomes.

Implementing structured mechanisms for reporting patient harm offers numerous efficiencies and advantages that can offset perceived administrative burdens:

- **Streamlined Regulatory Compliance**: By utilizing AI and automated systems for capturing and analyzing patient feedback, hospitals can maintain compliance with safety reporting requirements efficiently. This would mitigate the need for separate, cumbersome reporting structures, thereby reducing redundant administrative tasks.
- **Improved Patient Outcomes**: Investing in technology to elevate patient voices ultimately leads to higher quality care, reduced harm events, and improved patient trust and engagement. As illustrated in rigorous studies, when patients feel heard, it contributes to a culture of safety and accountability. (Hibbard & Greene, 2013; Weingart et al., 2011; Marzban et al., 2022)
- **Cost Efficiency**: By recognizing and addressing patient concerns early, hospitals can diminish costly adverse events—often leading to higher expenditures—helping to reduce administrative waste and streamline processes while delivering higher-quality care more cost-effectively.

Recommendations for CMS

In light of our statements and the insights from recent literature, we recommend that CMS actively consider the following propositions that utilize modern technology to enhance patient safety and quality improvement efforts:

1. **Investment in Patient-Reported Technologies**: Allocate resources and provide incentives for healthcare facilities to adopt technologies that facilitate patient-reported measure administration, collection, analysis, and integration into performance dashboards. Integrating AI and digital tools can enhance patient feedback collection, thereby ensuring that patient voices are prioritized in safety monitoring processes. This is a strategic investment into future efficiencies and improved patient care, investments that should rely on federal funding.
2. **Pilot Programs for Patient Reporting**: Establish demonstration projects, including initiatives under the Center for Medicare and Medicaid Innovation (CMMI), leveraging AI-driven platforms to gather patient-reported data from diverse hospitals and outpatient settings, which will assess their impact on safety outcomes and overall quality measures. Those projects should build upon the existing critical infrastructure of CAHPS surveys enhancing the structural and organizational frameworks associated with safety and quality improvement. Eventually other data collection and processing frameworks could be tested, but enhancing the current CAHPS family of surveys framework is likely more expedient.
3. **Integration with the Patient Safety Structural Measure (PSSM)**: The PSSM embodies a commitment to integrating patient feedback into safety protocols, and consequently, it is well positioned to promote AI-enhanced patient reporting and encourage the application of AI tools that facilitate more robust and comprehensive understanding of patient sentiments, improving reporting accuracy and response strategies. The PSSM provides patients with assurances that their voices are being valued and acted upon, which is essential in closing the feedback loop. Similar structural safety measures are needed throughout the healthcare system to systematically implement patient reporting on their experiences and outcomes across settings, providers, and insurance statuses.

4. **Retaining Disincentives for Information Blocking Practices:** Enhanced data sharing and access to comprehensive patient records are fundamental for integrating AI solutions that elicit and analyze patient-reported data effectively, leading to richer insights for improving patient safety and care quality. Informed

patients are more likely to participate actively in their care, be effective in identifying errors in their medical records, and contribute their valuable feedback.

In summary, fostering a truly safe, effective, and efficient healthcare environment necessitates the integration of patient voices through technology, as well as a readiness to respond to the insights gained. The synergy of AI, patient-reported measures, and a commitment to reducing administrative complexities is a truly transformative action for the healthcare landscape. The promise of AI extends beyond operational efficiencies; it encompasses a paradigm shift towards more patient-centered, responsive care.

We appreciate your consideration of our perspectives on these critical matters and look forward to collaborating in the pursuit of improved patient safety outcomes along with other patient-centered outcomes.

The Center for Patient-Reported Measures of Diagnostic Excellence at Johns Hopkins University is committed to advocating for these technological advancements within our healthcare system.

On behalf of the Center for Patient-Reported Measures of Diagnostic Excellence at Johns Hopkins University,

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