

# Innovative approaches of measuring care quality in China's market for telemedicine

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Around the world, the adoption of telemedicine has not only skyrocketed following the onset of the COVID-19 pandemic, but also has become an increasingly important part of health systems globally. This is particularly true in China where even before the pandemic, the government had already been promoting “internet hospitals” and there is a rapidly growing market of “direct-to-consumer” (DTC) teleconsultation provided through private third-party platforms. As countries transition into a post-pandemic era, policy makers are beginning to grapple with the challenge of how best to integrate telemedicine into their health care delivery systems. There is a burgeoning body of research that attempts to understand the implications of growing telemedicine use on health system performance.<sup>1,2</sup> This research is critical to guide policy as new telemedicine-enabled models of care evolve, raising important questions about how these care modalities fit into the larger health system and affect overall performance.

The quality of telemedicine services remains under-explored, particularly for services delivered on DTC telemedicine platforms. DTC platforms, where patients can book remote consultations with clinicians with whom they have no prior relationship, represent a significant shift in the market for medical consultations and could have system-wide implications as patients utilise these platforms for medical advice. However, examining telemedicine quality in this new context is a complex endeavour due in part to the wide variety of consultation modes. For example, patients and doctors can communicate through voice and video calls, as well as exchanging messages containing text and images.<sup>3</sup> At the same time, DTC platforms offer new avenues for measuring quality, thanks to the digitisation of health-care interactions. This digitisation facilitates the low-cost collection of various quality metrics beyond what has been traditionally possible.

To thoroughly analyse the impacts of DTC telemedicine platforms, it is imperative to employ methods that assess different dimensions of service quality. In our research in China, we have explored two measures that are well-suited to this context. The first through

unannounced visits by standardised patients (SPs). This method, often heralded as the gold standard for measuring care quality in outpatient settings,<sup>4</sup> involves trained individuals simulating a consistent set of symptoms or medical history to engage with healthcare providers. This approach allows for the objective assessment of various aspects of care quality, including the clinical process (e.g., the percentage of diagnosis questions a doctor asks from a predefined checklist), diagnostic accuracy, and adherence to appropriate treatment protocols such as referrals and prescribing.

The standardised patient method, while widely used in offline settings, has proven to be exceptionally well-suited to the digital platform environment. Using this method to assess direct-to-consumer telemedicine providers in China, we found that doctors asked roughly less than one-third of the recommended diagnostic questions of their patients. Further, video and telephone consultations resulted in better case management compared with consultations using text and image messaging.<sup>5</sup>

Another novel mechanism to measure the quality of telemedicine leverages reputation and patient feedback systems, which are emblematic of e-commerce environments such as Ebay and Amazon. On China's telemedicine platforms, information showing doctors' popularity 'star rating', virtual gifts and detailed user feedback are presented alongside doctors' professional profiles. Similar to hospital report cards, this information assists patients in assessing the quality of providers, equipping them with information quality and cost to make an informed decision on their choice of telemedicine providers.<sup>6</sup> A recent study of doctors' ratings from Yelp, an internet crowd-sourced website that reviews businesses in the US, found that ratings are positively associated with doctors' credentials, adherence to clinical guidelines, and health outcomes.<sup>7</sup> While these systems offer a novel lens through which to assess quality, the specific dimensions of care quality these ratings and user feedback capture and their correlation with the technical quality of care is an area in need of further exploration.<sup>8</sup>

On the periphery of China's internet health market is a burgeoning market for medical and health information, as more people look to the internet for this purpose.<sup>9</sup> The internet health care landscape is rapidly evolving, and concerted investments and efforts need to be channelled into data and research to keep up pace and understand its impact on health systems.



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