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Mapping the landscape of digital healthcare services delivered by specialized oncology hospitals in China: qualitative analytical study

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Objectives

Specialized oncology hospitals are key actors in China's cancer care delivery system and are undergoing rapid digital transformation. However, limited evidence exists on the structure, scope, and integration of digital oncology healthcare services in these institutions. This study aims to assess the current landscape of digital service delivery among leading oncology hospitals and explore strategies to enhance clinical value and implementation.

Methods

A qualitative design was adopted, integrating case study methodology with document mining. Samples were selected from the top 100 specialized oncology hospitals in China. Data on digital oncology service offerings—covering service content, target population, delivery methods, and workflow—were collected and analyzed using thematic analysis.

Results

A total of 74 sample hospitals were ultimately included, all of which are tertiary-level, top-tier oncology specialty hospitals in China. Four main categories of digital oncology services emerged. (1) Convenience-enhancing services (e.g., online appointment scheduling, AI-assisted triage, digital health education) were universally implemented across all hospitals. (2) Preventive and consultative services, including cancer screening advice, prevention, and rehabilitation counseling, were provided by 52 (70.3%) hospitals. (3) Internet-based clinical services, primarily for stable follow-up patients and as a prelude to in-person visits, were offered by 64 (86.5%) hospitals. (4) Oncology-specific services, such as remote radiotherapy, cancer risk assessment, oncology pharmacy, and nursing, were significantly underrepresented, with only 21 (28.4%) hospitals offering them.

Conclusion

While digital transformation in China's oncology hospitals is well underway, most services remain concentrated in administrative and basic consultative functions. High-value, oncology-specific digital services are underdeveloped, indicating the need for targeted policy, resource allocation, and technological investment to achieve integrated, patient-centered digital oncology care.

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