

A STUDY ON FEASIBILITY OF HOSPITAL- AT- HOME ICU SERVICES IN THE INDIAN HEALTHCARE SYSTEM.

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Introduction:

The Indian healthcare system is increasingly exploring innovative models to address the growing demand for specialized medical care and the constraints of traditional hospital infrastructure. One such emerging model is Hospital-at-Home (HaH) ICU services, which aims to deliver intensive care-level treatment within the comfort of a patient's home. Hospital-at-Home ICU services combine advanced medical equipment, digital health technologies, remote monitoring systems, and professional healthcare support to provide continuous critical care outside the traditional hospital setting. This model allows doctors and healthcare teams to monitor patients through telemedicine, wearable devices, and home-based medical support systems while maintaining clinical standards similar to those of hospital ICUs.

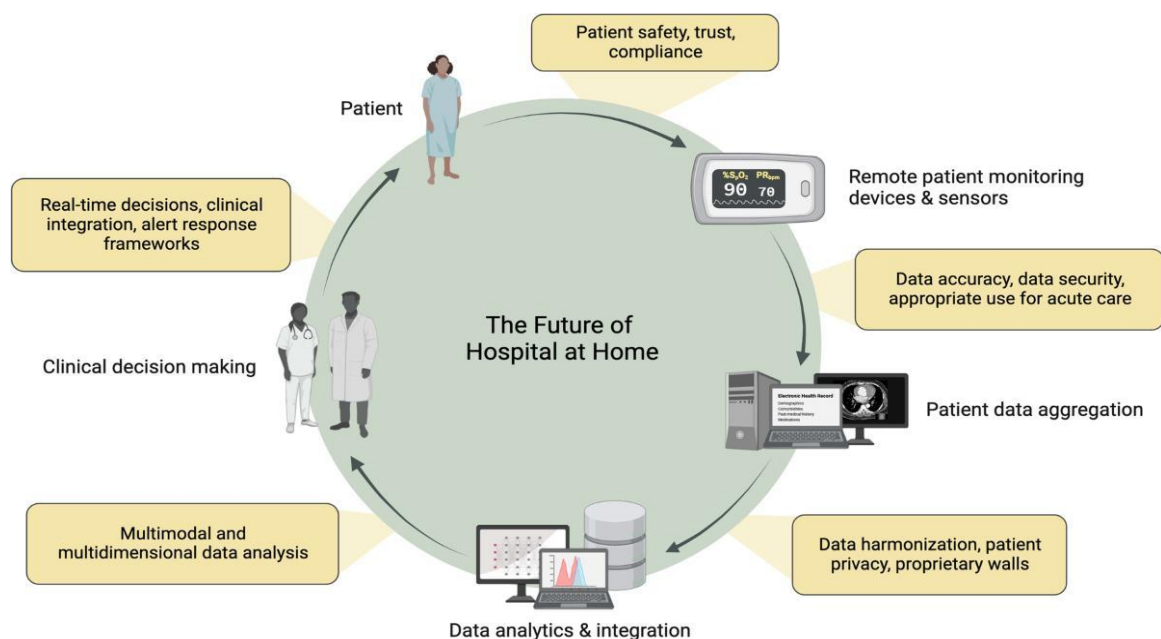


Fig: The Integrated Ecosystem of Future Hospital-at-Home Care.

Objectives:

1. To analyse the technology requirements essential for delivering ICU level care at home.
2. To evaluate the feasibility and preparedness of the Indian healthcare system for implementing Hospital at home ICU services.
3. To analyse the perceived barriers regarding ICU level care provided at home.
4. To develop a strategic implementation framework suitable for Indian hospitals to adapt hospital at home ICU services.

Methodology:

Methodology to study the Feasibility of Hospital at home ICU services.

1. Testing: To test the feasibility, usability, and safety of a basic model or prototype of ICU at-Home services.
2. Data Analysis: To interpret and evaluate all collected data to understand feasibility and readiness for implementing ICU-at-Home services in India.
3. Data collection: Data is been collected through Government Reports and policy documents, Hospital Guidelines and internal documents (ICU protocols, infection control guidelines) previous Research projects and academic reports.
4. Feasibility will be assessed across five domains: clinical feasibility, operational feasibility, economic feasibility, technological feasibility and acceptability.

Result and Conclusion:

Result: The study will produce a comprehensive understanding of how viable it is to implement Hospital-at-Home ICU services within the specific constraints of the Indian healthcare system.

The research is expected to generate concrete evidence on benefits such as reduced hospital bed shortages and more efficient resource utilization.

Conclusion: This model successfully addresses the “triple aim” of healthcare: improving the patient experience through the comfort of familiar surroundings, enhancing clinical outcomes by reducing hospital-acquired infections, and lowering the overall cost of long-term critical care. Ultimately, the success of these projects confirms that with a rigorous eligibility assessment and a robust tele-ICU infrastructure, the home can function as a viable extension of the hospital ward, providing a scalable solution to bed shortages and the rising burden of chronic illnesses.

References:

- B. Leff, L. Burton, S. L. Mader, et al., “Hospital at home: feasibility and outcomes of a program to provide hospital-level care at home for acutely ill older patients,” *Annals of Internal Medicine*, vol. 143, no. 11, pp. 798–808, 2005.
- J. Cheng, M. Montalto, and B. Leff, “Hospital at home,” *Clinics in Geriatric Medicine*, vol. 25, no. 1, pp. 79–91, 2009.

Future Scope:

1. Hospital-at-home ICU services can serve as an alternative care model for stable but critically ill patients who require continuous monitoring. By shifting appropriate patients to home-based ICU care, hospitals can reserve their physical ICU facilities for patients with severe conditions, thereby improving overall healthcare efficiency and resource utilization.
2. Scope of this project is the possibility of reducing the burden on hospitals and optimizing healthcare resources. Many hospitals in India face shortages of ICU beds, particularly during health emergencies or pandemics.
3. The project will deliver a strategic implementation framework and policy-oriented recommendations that can guide Indian hospitals in integrating and scaling hospital-at-home ICU models, as well as outline future research and pilot program directions.