

# Transforming Healthcare in India Through Design Innovation

Author: Arti Gugnani

India's healthcare system faces numerous challenges, including accessibility issues and outdated infrastructure. However, design innovation offers a transformative opportunity to address these gaps. By focusing on patient well-being, overcoming barriers in rural healthcare, and creating sustainable solutions, design can be crucial in reshaping the future of healthcare in India.



As part of Safdarjung Hospital's redevelopment in Delhi, the New Emergency Block was designed to enhance patient experience and streamline emergency care delivery.

#### **Patient-Centric Designs That Heal**

Healthcare spaces must go beyond functionality to foster healing. Patient-centric designs prioritise their needs, creating comfortable spaces that inspire recovery and holistic healing. Incorporating cultural elements —such as local art, traditional motifs, and region-specific or user-specific aesthetics—helps establish familiar and welcoming environments, reducing patient anxiety and strengthening their connection to the space.



Our redesign strategy at Ashirvad Hospital, Varanasi, includes interventions that work to ease the patient experience and improve mental wellness.

For the Ashirvad Hospital in Varanasi, the primary objective was to expand its capacity from 50 to 150 beds while integrating new and existing structures. We implemented a vertical zoning system to define public and private areas, optimising spatial efficiency. The redesign introduced widened passageways, modular operation theatres, and a muted material palette to create a calming environment. Functional enhancements such as intuitive signage and ergonomic furnishings improved patient experience and hospital efficiency.

Beyond spatial planning, sensory-focused design elements play a crucial role in promoting mental and physical healing. The Mother and Child Block at AlIMS, New Delhi, incorporates biophilic design principles that connect patients with nature, utilising natural light, ventilation, and greenery to create a calming atmosphere. These features enhance patient outcomes and ease caregiver stress, fostering a more supportive environment for everyone. Similarly, at Ashirvad Hospital, the NICU wing features vibrant illustrations as visual engagement tools, crafting a comforting and child-friendly space for paediatric care.



The NICU wing at Ashirvad Hospital, Varanasi, is designed to improve functionality while maximising natural light and ventilation, creating a healing environment that supports patient recovery and reduces caregiver stress.

## **Innovative Approaches to Rural Healthcare**

Design innovation is key to addressing the challenges of rural healthcare, where climate and cultural context must be carefully considered to create effective and welcoming environments. Integrating sustainable strategies that respect local conditions can transform healthcare spaces into accessible healing environments for rural populations.



At Ashirvad Hospital, Varanasi, we harnessed natural light and ventilation to reduce infections, enhance comfort, and improve efficiency.

Harnessing natural elements like sunlight and wind helps reduce the spread of infections while ensuring thermal comfort. Strategic building orientation and natural ventilation lower reliance on mechanical cooling, making facilities more cost-effective.

Traditional architectural features—such as verandas, courtyards, and indigenous materials—enhance ventilation while fostering community engagement, making healthcare spaces less intimidating and more inclusive.

Climate and culture can be strong collaborators in defining the design ethos for rural healthcare facilities. By prioritising sensitive design that respects local conditions and integrating efficient spatial programming, we can transform rural healthcare into inclusive, accessible, and healing spaces. Features like deep overhangs, stepped terraces, and naturally ventilated non-critical spaces ensure a comfortable environment while reducing energy dependence.

Integrating local art and greenery further enriches the healing environment, encouraging a connection with nature that supports recovery. Through context-sensitive design, rural healthcare facilities can be effective and sustainable, providing communities with essential care in a supportive setting.



At the Mother and Child Block at AlIMS, New Delhi, we integrated biophilic design principles to foster a healing environment through natural connections and greenery.

## Strategic Design for a Resilient Future

Healthcare design must align with long-term goals of ensuring accessibility, sustainability, and adaptability in medical infrastructure. It should incorporate strategic elements that enhance flexibility and efficiency:

- **Optimised Layouts**: Thoughtful placement of departments reduces unnecessary patient movement, improving care delivery.
- **Technology Integration**: Facilities must accommodate advanced medical technologies and digital health solutions.
- Flexibility: Multi-functional spaces that adapt to evolving needs ensure longevity and relevance.

Strategic design improves the patient experience and creates resilient systems capable of meeting future healthcare demands. When designing the New Emergency Block at Safdarjung Hospital in Delhi, the focus was on streamlining emergency care delivery. Serving over 1,000 patients daily, the facility required an approach that consolidated medical, diagnostic, and referral services under one roof. The layout facilitates rapid patient assessment and immediate medical intervention, allowing for efficient patient transfer to definitive care. A hospital management system supports digital record-keeping, reducing paperwork and improving response times.

Similarly, spatial planning was a key challenge due to site constraints at SKG Cancer Hospital in Jodhpur. The design carefully delineates outpatient and inpatient areas to minimise unnecessary movement, while emergency and diagnostic services are strategically placed for accessibility. Vertical zoning accommodates specialised facilities, including radiation therapy and modular operating theatres, within a compact footprint. By optimising layout and workflow, the hospital enhances operational efficiency without compromising the quality of care.

Strategic design also requires a multidisciplinary approach, incorporating data analytics, patient-centric environments, and streamlined processes. By adopting a systems-oriented perspective and interdisciplinary thinking, healthcare providers can enhance patient satisfaction, increase efficiency, and position themselves for a future driven by patient-centered care.



Serving over 1000 patients daily, our design for the New Emergency Block at Safdarjung Hospital utilises an approach that consolidates medical, diagnostic, and referral services under one roof, for swift assessment and intervention.

#### A Vision for the Future

Design innovation in healthcare is about creating environments that support patient care and hospital efficiency. From modular rural units to large-scale emergency facilities, strategic design ensures accessibility and long-term viability. By addressing spatial organisation, material selection, and workflow optimisation, healthcare facilities can function effectively while remaining adaptable to future advancements. Through a structured and thoughtful approach, India's healthcare infrastructure can evolve to meet the needs of diverse populations.