

# CareBridge AI: A Unified Web-Based Healthcare Assistance Platform

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Published October 2026

## Abstract

Healthcare-support information is often spread across separate services for treatment-cost planning, government assistance discovery, hospital location search, and medical-document review. This can make navigation difficult for patients and families, particularly those seeking affordable care. This paper presents CareBridge AI, a web-based prototype that organizes selected healthcare-support functions in one interface. Developed using HTML, CSS, and JavaScript, the prototype provides interfaces for medical-bill information, a funding-gap calculator, medical-report text review, scheme discovery, a hospital finder, and chat-style support. The funding-gap module estimates the remaining amount from user-entered treatment cost, available funds, expected assistance, and other contributions. The current implementation uses browser-side logic and demonstration storage. It does not demonstrate a trained or clinically validated AI/ML model, a production-grade patient database, or an IoT deployment. A qualitative comparison identifies integration and navigation as the main design opportunity. A proposed evaluation plan covers calculation correctness, official-link validity, usability, privacy, and future AI validation. No clinical or performance improvement is claimed without measured testing.

**Keywords:** digital health; healthcare assistance; healthcare costs; hospital finder; scheme discovery; web application

## 1 Introduction

Digital services are increasingly used to present information and support access to public and private services. In healthcare, patients and families may need to estimate treatment expenses, find possible financial assistance, locate hospitals, and understand medical-document terminology. These activities often require navigation across different websites and providers, which can create a fragmented user journey.

The World Health Organization's global strategy on digital health emphasizes that technology must be supported by governance, resources, and suitable implementation practices [1]. Research on digital-health interventions in India also highlights the potential of digital tools to improve access while recognizing that implementation context matters [2]. These sources motivate accessible healthcare-support interfaces, but they do not prove that this particular prototype improves clinical outcomes.

CareBridge AI is a web-based prototype designed to provide a common entry point for selected support tasks. It is not intended to replace clinicians, hospitals, government authorities, insurance providers, or emergency services. The current contribution is the organization of basic calculations and information-navigation interfaces in one place.

## 2 Background and motivation

The project idea arose from the difficulty users may experience when treatment-cost planning, scheme discovery, and hospital search are separated across multiple services. The project report and presentation identify the following needs: clearer medical-bill information, a calculation of the remaining treatment funding gap, a starting point for medical-report text review, government scheme discovery, hospital-location search, and a chat-style support interface.

The reviewed background sources include the WHO digital-health strategy [1], a scoping review of digital-health interventions for primary-care access in India [2], research on healthcare-cost prediction [3], the Government of India's myScheme portal [4], Google Maps Platform documentation [5], and web technology references [6, 7]. These sources provide context for the design. They do not establish that CareBridge AI itself is accurate, secure, or clinically effective.

The research gap is framed as an integration and usability opportunity rather than a claim that no similar products exist. The proposed interface aims to help users move between selected tasks while directing them to official sources for decisions and eligibility confirmation.

## 3 System design and findings

### 3.1 Proposed system

The current prototype is front-end centred. HTML structures the website, CSS controls presentation, and JavaScript handles supported browser-side interactions and calculations. Demonstration records may be stored in LocalStorage or SessionStorage. External functions, such as maps or checkout, depend on correct configuration. A production backend, secure patient database, trained AI/ML model, and IoT platform are not demonstrated in the current build.

### 3.2 Main functional modules

- **Medical-bill information:** provides a user interface for bill-related information. It should not be described as automatic bill verification unless extraction and validation are implemented and tested.
- **Financial-gap calculator:** estimates the remaining amount using values entered by the user. The calculation is given in Equation (1).

$$G = \max(0, C - F - A - O) \quad (1)$$

where  $G$  is the funding gap,  $C$  the treatment cost,  $F$  the available funds,  $A$  the expected assistance and  $O$  other contributions.

For example, a treatment cost of ₹250,000, available funds of ₹80,000, expected assistance of ₹50,000, and other contributions of ₹0 produce an estimated gap of ₹120,000. This is an illustrative arithmetic example, not a measured experimental result. Expected assistance must not be treated as approved or guaranteed funding.

- **Medical-report text review:** provides an interface for basic text-based review. It does not diagnose illness or replace professional interpretation. Any future natural-language-processing model would require suitable data, expert review, and safety testing.

- **Scheme discovery:** helps users navigate scheme-related information and official links. Eligibility depends on current scheme rules, location, documents, and other conditions; final confirmation must come from the official source.
- **Hospital finder:** may use map services to show hospital locations. Map results alone do not confirm opening status, beds, specialist availability, service quality, or scheme acceptance.
- **Chat-style support:** demonstrates a support interface. A live AI assistant requires a connected backend and tested model; such functionality should not be claimed unless actually implemented.

### 3.3 Comparison with existing approaches

Official scheme portals provide authoritative scheme information but may not combine it with personal funding calculations or hospital search. Map services help with location and route discovery but cannot confirm clinical capacity or scheme acceptance. Manual calculations are transparent but can be inconvenient or prone to arithmetic errors. Professional report review provides clinical context and must remain the authority for diagnosis and treatment. CareBridge AI proposes to group selected entry points together, but it is not a replacement for these established services.

### 3.4 Evaluation and findings

The supplied project materials describe expected functions but do not provide controlled test logs, benchmark datasets, user-study results, or measured accuracy and speed. Therefore, no numerical performance claim is made. A future evaluation should test calculator outputs against manually verified cases; check official scheme links; test map loading and search behaviour; measure task completion and user feedback; and review data storage, access control, and privacy.

The funding-gap calculator should be tested with positive values, a zero gap, missing inputs, negative values, and invalid numeric entries. Any future AI feature should report its dataset, metrics, limitations, failure cases, and expert-review process. These are proposed evaluation activities, not completed experiments.

## 4 Future improvements

Potential improvements include a secure backend and database, authenticated user accounts, role-based access control, server-side validation, encrypted communication, audit logs, and a clear data-retention and deletion policy. Scheme information should be checked against official sources and updated periodically. Hospital listings should include clear warnings that users must confirm services directly with the facility.

The interface could be expanded with Marathi, Hindi, and other relevant languages, accessibility improvements, and mobile-responsive layouts. AI/NLP-based explanation of general medical terminology may be considered only after selecting an appropriate model, evaluating representative data, obtaining qualified review, and testing for unsafe or misleading outputs. IoT should be considered only where a justified use case and secure device workflow exist.

## 5 Conclusion

CareBridge AI presents a web-based prototype for organizing selected healthcare-support activities in one interface. Its intended contribution is improved navigation among a funding-gap calculator, scheme discovery, hospital-location search, and interfaces for bill-related information and report-text

review. The literature supports the broader relevance of digital-health access and web-based service delivery, while emphasizing the importance of reliable information and appropriate governance. The current prototype does not establish clinical accuracy, trained AI/ML performance, secure long-term patient-data storage, or IoT functionality. Its real-world value must be assessed through documented functional tests, usability evaluation, verified information sources, and a security review.

## Acknowledgment

The author thanks Prof. Pawar A. N. and the Department of Artificial Intelligence and Machine Learning Engineering at Navashyadri Groups of Institute Faculty of Engineering for academic guidance and support during the CareBridge AI project.

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