

Best Practices

Although the Institute executes several unique practices, the two best and most unique practices are:

- A. Hospital revolving fund
- B. Hospital Information System

A: Hospital Revolving Fund (HRF) for patient care

Objective: Hospital Revolving Fund (HRF) is an initiative by the Institution to finance the specialized and customized nature of modern Hospital Supply Chain Management of Drugs and Consumables. It was created with the aim and objective of ensuring bedside availability of quality drugs and consumables at best price on 24 x 7 basis, 365 days a year to the patients and the staff.

To fulfil the goals of supplying all, HRF procures the medicines and consumables directly from manufacturers, the best quality at the cheapest possible rates, avoiding the additional margins of retailers, maintaining the inventory and supplying directly to the patients and caregivers across the Institute.

Context

On an unfortunate day, a 65-year-old widow from Deoria, with a 15 years old sick son with fever and hypotension, came to emergency at midnight without any helpers. She was prescribed emergency medicines, which were not available in the hospital. The lady was stressed and started crying for help and was not willing to leave her son who was deteriorating. The treating physician called the ward boy for help, and the medicine was brought and given. However, the delay in administering the medicine was blamed on the hospital authorities. Such incidents were not uncommon. Delays in medication administration used to result in causality for which patient's helpers used to commonly blame doctors or hospital authorities. To address this issue, on a fortunate day in 1997, it was decided by the then Director Prof Mahendra Bhandari to start a self-sustainable system of provision of medicines and consumables named HRF (Hospital Revolving Fund), after approval from the Visitor and the President of the institute, which became the country's most famous hospital pharmacy system and an icon for this premier Institute.

Practice

The Institute adopted a unique system of funding and sustaining Supply Chain Management of Drugs and Surgical Consumables for all patients coming to the Institute. HRF is able to procure medicines and consumables directly from manufacturers and reputed suppliers in bulk with locked-in rate contracts, thus supplying at reduced costs and assured quality for our patients and healthcare workers.

Our HRF is an evolving system open to the needs of the patients and healthcare workers. The HRF Management Committee, chaired by a senior professor of the Institute, manages the activities of HRF. The management committee takes a call with input from all concerned people. The workflow of HRF is such that it encompasses all faculty members, nurses, and technicians and directly or indirectly affects each staff, patient and caretaker of patients visiting this tertiary care Institute. Continuous feedback is collected from patients, doctors and paramedical staff regarding the requirement and quality of new/existing drugs, consumables and surgical items available in HRF. The workflow of HRF is distinctively designed, which can be viewed here ([view link](#)).

Salient features:

1. Operations and Compliance

The HRF maintains a transparent vendor selection system with faculty members' involvement in product evaluation and techno-commercial deliberations. A team of 20 officials, including Officers and 240 outsourced human resources, works under the strict supervision of a team known as the HRF Management Committee, constituted in compliance with Institute Regulations and a periodic report is submitted regularly before the apex body of the Institute.

2. HRF ensures the **availability of 10000+ drug molecules and 5000 types of surgical consumables** which are delivered bedside and to the operation theatres 24x7 through its 35 Peripheral Unit outlets across the hospital area.

3. Purchase, Utilisation/Consignment and Inventory Management

HRF has a robust database of the required inventory and its consumption pattern that helps decide the quantity to procure. The entire inventory is managed by HRF today on HIS (Hospital Information System) in two major parts, namely Unit items, which patients purchase and miscellaneous items, which are cost-free for indoor patients. The entire inventory stocked in HRF is procured either after purchase, on utilisation/consignment, or managed on a vendor basis. The Store structure and organization follows a **Hub and spoke model**, wherein there is a central Main store, 35 Unit stores and 170 Miscellaneous/departmental and other Stores, that are located all over the hospital. No area of the hospital is left untouched and as the hospital has expanded, the footprint of HRF has kept pace with it.

The consumable distribution model to patients is also unique and remarkable. A pictorial representation of the bedside delivery of drugs is attached. [HRF Delivery Model](#)

4. **Role During the Pandemic and Crisis:** HRF stood the test of time in Supply Chain Management during the COVID-19 pandemic while the entire globe faced the challenges of supply of consumables and protective gear for healthcare workers.

5. Over the years, HRF has supported the **Kamdhenu AtinirdhanChikitsa Sahayata Society** of the Institute which was formed by the

Institute to financially support patients below the poverty line in immediate care situations.

6. HRF Procurement Cell ensures the timely purchase of items already approved under the HRF Rate Contract and the tendering process by issuing the Supply Order and ensuring availability to the patient at a reduced supply cost as low as 30% of the MRP.

7. **Contracts for the high-cost items- zero investment of working capital:**

A few items of high cost or add-ons to the HRF inventory are procured on a consignment basis, and dues to the vendor are released only after the item is utilised and charges have been recovered from the patient. This policy allows zero investment of working capital.

8. **HRF contribution to the research and scholars:** HRF supported with Rs. Five Crore in setting up the Core Research laboratory at SGPGIMS for enhancing research at the Institute.

9. **External audit of HRF:**

Looking at a high amount of turnover and volume of work, besides internal audits, mandatory audits by the auditor general Team Allahabad are performed. HRF has appointed one professional Chartered Accountant to monitor the entire activities.

Evidence of success of HRF

The success of HRF is evident from its annual turnover, which was started from token money of 50 lakhs in 1997, and increased to **annual turnover of Rs. 237.00** Crores during the financial year 2022-23. [View Link](#)

The best part of HRF is the seamless availability of drugs and consumables of **high quality at low cost, up to 30-70% of MRP**, at the bedside of the indoor patient as well in OPD.

Inspired by the success of the HRF, the Institute management **launched the Investigation Revolving Fund (IRF)** on the lines of HRF for procurement of test kits, reagents and other related consumables.

PhD degrees have been awarded based on a thesis exploring the working of HRF. PhD degrees awarded on HRF-related work at SGPGIMS. [View Link](#)

This unique model of HRF has proved to be a **role model in Government and the corporate health sector hospitals**. The institute has received requests for establishment of HRF facilities from reputed Institutes like Institute of Liver & Biliary Sciences New Delhi, AIIMS New Delhi, IMS-BHU. HRF model has been replicated in the following leading hospitals:

- RML Hospital, Lucknow
- Kalyan Singh, Super Speciality Cancer Institute, Lucknow
- IGIMS, Patna
- Government Institute of Medical Sciences, Noida
- U.P. University of Medical Sciences Saifai, Etawah
- KGMU, Lucknow

Problems Encountered

The Institute is a vast tertiary healthcare facility with many specialities and rigorous ongoing research projects. It is sometimes challenging to cater to the flow and ebb of a wide variety of drugs and consumable requirements from different departments. With expansion of the institute, catering to all the peripheral units like Apex Trauma Centre, EMRTC etc was challenging. However, it turned out to be an opportunity to expand and fulfil the demand. Auditing the huge turnover is challenging. Balances and checks in the form of internal and external audits, became an inherent part of the working of HRF. The HRF committee is empowered with senior faculty members of various departments, which helps to meet the demands of patients and healthcare workers.

Resources required

Rapid advances in medical sciences mean adding newer drugs and tests in the armamentarium of clinicians and researchers in their quest for excellence in patient care. The HRF strives to incorporate all new products in its inventory. The self-evolving system of HRF makes its best effort to keep pace with the ever developing medical technology to provide best possible care to patients of SGPGI. Use of inventory forecast models is also needed.

B. Hospital Information System (HIS) for all healthcare providers and users

Objective: "One for all portal, ranging from patient information, drug and consumable delivery to hospital management activities on one mouse click". The goals were to provide a wide range of services, from a web-based patient portal system for the patients and caretakers to laboratory interfacing for the technicians and doctors working in the laboratory, simultaneously providing **clinical details** to the clinicians for treatment purposes and research materials to the basic science and clinical scientists for **research purposes** with a single click portal.

Context

Keeping and preserving the medical records of the patients and hospital activities is a priority of any medical Institute. The Institute was ahead of all contemporary Institutes in India in keeping electronic records of all Institute activities. The **Hospital Information System (HIS) was conceptualised by the Institute as early as 1998-99**, which became one of the **iconic features** of the Institute later on. To the best of our knowledge, this Institute was **the first in India to start keeping and using the electronic medical records** of each action of the Institute. Subsequently, it was upgraded with the latest technologies in November 2013. Institutes like Dr. Ram Manohar Lohia Institute of Medical Sciences, King George's Medical University and other upcoming State Medical Colleges, have used our HIS to develop and plan their system on a similar successful pattern.

HIS is the core of all patient-related activities at SGPGIMS. All services, starting from Patient Registration, OPD appointments, Investigations, Admission, Discharge, Billing, Operation Theatre, Blood bank, Hospital Revolving Fund, Pharmacy, etc., are integrated into HIS. [View Link](#)

HIS affects almost all employees and patients visiting the Institute. The users of different levels (Faculty, Resident doctors, nursing staff, OPD bay counter, hospital accounts, lab staff, etc.) can access patients' information depending on their roles and privileges.

Patients can also view and print their records, including all lab reports, electronic medical records, expenditure details, etc., using their unique user id and password allotted to him/her from anywhere in the globe.

By logging in to the patient portal, a patient can register online and view all the facilities that SGPGIMS offers everyone.

Login Link to Patient Portal: [View Link](#)

Practice

Salient features of Hospital Information System:

1. **Lab equipment interface with HIS** has been done following the Health Level 7 (HL-7) standards available, thus **preventing entry errors by humans** in patient reports, faster processing of lab investigations, and **reducing human interface**. HL7 is a set of international standards for transferring and sharing data between various healthcare providers. More specifically, HL7 helps bridge the gap between health Information Technology (IT) applications and makes sharing healthcare data more accessible and efficient than older methods.
2. **Integrated Picture Archival and Communication System (PACS)** is available as part of the Hospital Information system, which enables the system to store images of various imaging investigations and make them available for **treating physicians and radiologists** to view on their personal computers, laptops, mobiles, etc.
3. The Institute has its **web-based Patient portal integrated with the Hospital Information system** so that patients can view their investigation reports and radiological images and print the reports, account details, and discharge summaries using their patient ID and secure OTP based login. This helps patients skip queues and the availability of reports anytime, which increases patient satisfaction.
4. **HIS has a PED (patient's employer's deposit) facility**. Employers or any donor or helping agency of the patient can use these facilities to deposit money in hospital accounts for their patients in advance. It is particularly helpful for those employed in other public and private sector organisations and patients who do not have local bank accounts.
5. **e-Leave management** through the Human Resource Management System (HRMS) module is also added as a functional part of the HIS.

6. Unlike other institutions, the Institute has its own in-house Data centre and business continuity centre/**disaster recovery site** within the campus, which helps in rapidly recovering data in in case of any emergency and unexpected crash of the system.
7. **HIS** has made electronic data retrieval safe and easy, thus significantly improving the **Institute's research**, for which the Institute is known worldwide. HIS contributed enormously to the **research avenues of the Institute** with the ready availability of all data electronically to the authorised person.
8. The hospital revolving fund (HRF), an Institute's pharmacy, is also integrated into **HIS**. The demand for medicine, surgical items, etc., and their supply can be monitored through the **HIS**.
9. **HIS is secured by multi-layered encryption and firewall systems to ensure the security of the data of patients and the hospital.**
10. The Department of Biostatistics and Health Informatics, which plans and manages the **in-house data of the Institute's patients, Hospital information system** and patient portal.

Problems Encountered and Resources Required

New departments in far-flung buildings have come up in the Institute over time. Sometimes, due to factors out of the Institute's control, there is a loss of connectivity between the central server and other departments, which hinders patient care. The Institute is continuously in touch with external experts from various reputed technical organisations like Indian Institute of Technology (IIT) and National Informatic Center (NIC) to ensure such factors are reduced.

