Internship

at

Bhagwan Mahaveer Cancer Research Hospital, Jaipur

By

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BMCHRC Hospital

A NABH accredited institution, Bhagwan Mahaveer Cancer Hospital and Research Centre, Jaipur (BMCHRC) came into existence in the year 1997 as a cancer specialty hospital offering cancer prevention, treatment, education and research with just 50 beds at an initial stage. 20 years later, it grew into a super-specialty, 200-beded hospital with leading-edge infrastructure housing several wards, laboratories, utility services and specialties. Organ-specific departments at BMCHRC include Surgical Oncology, Medical Oncology, Radiation Oncology, Radiology, Pathology, and Blood Bank. A separate seven-storied IPD block is a recent addition in the better interest of patient care.

BMCHRC was established with the mission to provide most advanced medical services to Cancer Patients in an environment that primarily focuses on humanity, compassion and concern. The hospital aims to serve patients not only within Rajasthan but also from neighboring states who earlier had no alternative other than to go to metro cities. With this approach BMCHRC effectually eradicated numerous hassles faced by the patients including heavy financial burden due to high cost of accommodation in far off cities. Besides BMCHRC under its objective of lending a hand to the underprivileged, not only treat patients under BPL category for free up to the extent of 25% but also offer subsidized cost of treatment for the patients belonging to the weaker strata.

Mr. Navrattan Kothari, Chairman of BMCHRC has been managing the hospital for over 20 years and under his guidance the institution has achieved numerous milestones and has grown manifolds. His spirit of imparting knowledge to the next generation has been inspirational and motivating to move the hospital ahead. Younger son of Mr. Navrattan Kothari Mr. Sandeep Kothari is carrying on the legacy led by his father and managing the hospital as Vice Chairman with interest and enthusiasm.

Armed with exceedingly qualified and infinitely experienced team of Medical professionals BMCHRC have been able to achieve significant landmarks marking numerous milestones in a very brief journey by now. The institution has always kept itself ahead of times by accumulating latest technologies in cancer treatment. Works from faculties that serves with utmost humaneness have also been published both in National and International journals.

BMCHRC is also active in the education segment and has marked its unmatched presence by introducing College of Nursing in the year 2006 with the purpose of molding qualified aspirants into competent nurses to meet the increasing demand of the health care industry. The Institute offers Diploma in General Nursing & Midwifery, B.Sc. Nursing and Master's degree in Nursing and takes pride for being the first college to offer M.Sc. Nursing (Medical Surgical Nursing) programme in Rajasthan.

In conjunction with the above mentions, the welfare initiatives commenced by the hospital truly defines the core objective of the institution, i.e. to selflessly serve the mankind and manifests that at BMCHRC CURE IS CARE!

Facilities

BMCHRC provides various facilities and services. Besides professional care and support, hospital management is taking care of patients' inner comfort as well.

Diagnostic Service

Radio Diagnosis Department

- 16 SLICE CT Scan
- Digital Mammography
- Color Doppler
- Digital X-Ray
- OPG

Pathology Department

- Hematology
- Biochemistry
- Histopathology including frozen section
- Clinical Pathology
- IHC (Immunohistochemistry)
- Cytology
- Serum Marker Studies
- Microbiology
- Flow cytometry

Nuclear Medicine Department

- PET CT (First In Rajasthan)
- Gamma Camera
- Radio Iodine Therapy (First & Only In Rajasthan For Thyroid Disorder Patients)
- Samarium Therapy for Bone Metastasis.
- Gallium – 68 generator for Neuroendocrine Tumors and Prostate Tumors

Treatment Facilities

Radiation Oncology Department

- Linear Accelerators (First In Rajasthan With Technology Of Rapid Arc, IGRT, IMRT And 3DCRT)
- PET based planning
- Brachytherapy
- Intraoperative Radiotherapy

Medical Oncology Department

- Chemotherapy – As per International Protocols (Adult & Children)
- Targeted Therapy
- Immunotherapy
- Solid Tumor Chemotherapy
- Hemato Oncology Unit
- Day Care Ward (60 Bedded For Chemotherapy Patients)
- MICU
- AML Ward
- Neutropenia Ward

Surgical Oncology Department

- Integrated Modular Operation Theatres
- Laser Cancer Surgery
- Endoscopy Facility
- Micro Laryngeal Surgery
- Laser Surgery
- Operation Theatres
- 1 Integrated OT
- 3 Modular OTs
- 2 Other OTs
- 1 Endoscopy Theatre
- 14 Bedded Surgical I.C.U

Pain and Palliative Care Department

- Pain Clinic
- Nerve Blocks
- Opioid Pain Management
- Hospice Care
- Care Giver Support Program
- Home Care Facility for Terminally Ill Patients

Plastic and Reconstruction Surgery

- A Comprehensive reconstruction including both functional & aesthetic aspect.
- Breast & Genital reconstruction
- Management of facial nerve palsy

Anesthesiology – Fully Equipped Department

Bone and Soft Tissue Oncology and Limb Preservation Surgery

Neuro Oncology

- Brain Cancer Surgery
- Spine Surgery

Intervention Radiology

- Guided Biopsy/ FNAC
- Transarterial Chemo Embolization
- Radio Frequency Ablation

Well Equipped Intensive Care

- Includes advance monitoring, ventilation, diathesis, even consultation by super specialist.

Blood Bank

- 24 Hour Available (All Fractions Of Blood)

Clinical Research Department

BMCHRC endeavors has been in patient's cancer awareness program & nuances in cancer clinical research since its inception.

Pharmacy

- 24 Hour Available & Medicine Are Available At Reasonable Rates

Mission and Vision

MISSION

To provide “Affordable Care with Human Touch” to all sections of the society irrespective of economic considerations.

VISION

To make Bhagwan Mahaveer Cancer Hospital and Research Centre (BMCHRC) a comprehensive world class cancer treatment facility with cutting edge technology.

Milestones

- 1997

  Shri Navrattan Kothari embarked on a journey to serve the mankind

  BMCHRC became operational

- 1998

  Cancer Care (Women’s Wing) got established to extend emotional & economical support to cancer patients & their attendants

  Radiotherapy Cobalt Machine got Installed

- 1999

  Inauguration of General Ward

- 2001

  Inauguration of Aacharya Hasti Bhavan (Dharamshala)

  Inauguration of Vistaar Bhavan (Nursing Hostel)

- 2002

  Inauguration of Transfusion Services

- 2003

  CT Scan Spiral & Color Doppler Machines got Installed

- 2005

  First Linear Accelerator Machine in Rajasthan got Installed

- 2010

  2nd Linear Accelerator (Varian) Machine got Installed

  PET CT & Gamma Camera got Installed

- 2012

  Inauguration of Palliative Care Ward

  Inauguration of Ultramodern Operation Theater and Surgical ICU

- 2013

  Facility of Radioiodine Therapy

  Inauguration of 200 bedded IPD Block

- 2015

  NABH Accreditation Awarded

  2nd CT Scan Machine got Installed

- 2017

Inauguration of AML Ward

Inauguration of Hospice Ward

Started Laser Surgery – Department of Surgery

Gallium – 68 generator for Neuroendocrine Tumors

- 2018

  31st March 2018 – NABH Re-Accreditation till 30th March 2021

  31st August 2018 – Neuro OT

  21st September 2018 – Installation of True Beam STx

  22nd September 2018 – Started RTPCR

Learnings

1. Purchasing

Minimum and maximum stock level is manually set by the purchase manager in the computer software, as soon as the current stock level falls below the minimum stock level, order quantity is generated in the software.

The setting of minimum and the maximum stock level is based on the consumption pattern of the item. It is different for different items as some items are consumed more or less depending upon the demand.

Computer order quantity is the difference between the maximum stock level and current stock level. It is not necessary that stock ordered by the purchase manager is equal to the computer order quantity; it can be more or less depending upon the consumption patterns.

E.g., Suppose the consumption of drug ‘X’ in a month is 300 units, on an average per day consumption, is 300/30 days = 10 units per day. Suppose the minimum order quantity is set on the basis of 7 days consumption which will be 10 units * 7 days consumption = 70 units and maximum order level are set on two months consumption of drug ‘X’ which will be 600 units. Whenever the

current stock level falls below 70 units, computer order quantity is generated. If the current stock is 65, computer order quantity will be 600 – 65 = 535 units; it is not necessary that the purchase manager will give an order of 535 units, it can be 550 or 500 depending upon the demand.

Format of Purchase Order Sheet

XYZ Pharmacy Basement Division

Min Stock 6/Apr/2019:10:10 PM

Sr No	Item Name	Email Id	Contact Number	Pack Size	Min Stock Level	Current Stock	Max Stock level	Computer Order Quantity	Ordered Quantity	Remarks
	Chaudhary Medical Hall	xyz@abc.com	4584368465							
1	Razo 20MG			Unit	90	89	315	226		
	Deeksha Enterprises	asd@ajk.com	48879543567							
1	Posid 10MG			Unit	4	3	13	10		
	Dhruvi Pharma Pvt. Ltd.	shd@uec.com	4863158974							
1	Omnikacin 250MG			Unit	257	219	901	682		
2	Farcan 200MG			1*4	4	0	13	13		
	Life Saver	hjs@uic.com	4795632145							
1	Altraz 1MG			Unit	2389	2303	8363	6060		

In BMCHRC purchase order sheet is printed every afternoon at approximately 2'o clock and ordered quantities are placed by the purchase manager. As most of the purchases in BMCHRC are made locally from Jaipur itself the lead time of the medicine is on the same day by 8pm or by the end of the next day.

2. Physical Check

When the goods are received by the pharmacy, the person-in-charge checks for the item name, pkg, quantity, batch number, MRP and expiry if all the fundamentals are valid as per purchase invoice, he/she signs both the copies, stamps the duplicate copy with 'BMCHRC Pharmacy', stamps the original copy with 'Goods Received' and gives the duplicate copy to the person who brought the goods. Items in need of cold storage are immediately stored in cold storage. If the purchase invoice amount is more than Rs 50,000 E-way bill is sent by the supplier. E-way bill is either printed on the backside of purchase invoice or on a separate page. If the bill is printed on a separate page, E-way bill number is written on the original purchase invoice on the top right most corner.

In case if the details on the purchase invoice are incorrect, necessary changes are made on both the copies of purchase invoice and person who brought the drugs is been told to bring a revised copy of the bill. Some suppliers send the revised copy of the bill on the same day while some take 3 to 4 days.

Purchase Bill receipt register is used for manually write down details of all purchase invoices serially. The details written down are a serial number, date of goods received, party name and quantity of drugs received, invoice number, invoice date and signature of the person who checked all the details of the items physically in pharmacy. The entry serial number in the register is written behind the purchase invoice.

Uses of Purchase Bill Receipt Register:

- In case if a purchase invoice is lost one can find party name and product quantity.
- The person writing in the register becomes confident enough of the items received as the entry is done as soon as the bills are stamped.
- In case details of any items were inaccurately checked, the person who received the order can be caught easily as he/she also have to sign while writing down the details.

Format of Purchase Bill Receipt Register

Sr No.	Receiving Date	Item Name	Invoice Number	Invoice Date	Sign
0025	7/11/2019	ABC Pharma	ABC123	6/11/2019	
		Drug A			
		Drug B			
		Drug C			
0026	7/11/2019	DOF Pharma	GHDS001	7/11/2019	
		Drug L			
		Drug M			
0027	7/11/2019	OEL Medicals	TUSK89	7/11/2019	
		Drug W			
0028	8/11/2019	TUSV Pharmaceuticals	REV14	8/11/2019	

Before the entry of purchase bill in the computer system rate checking takes place.

Before going to calculations, the rate is first directly checked with previous net rate, if they are similar, purchase manager directly calculates the sale rate, if not first net rate is calculated and then purchase manager calculated the net sale rate.

3. Purchase Rate Checking

If the MRP of drug 'X' is Rs 200 on the purchase invoice inclusive of 12% GST, the rate can be checked by the following calculations:

MRP - Tax (GST) percent - Margin given by the Supplier (Market Margin on a product by supplier)

200 - 10.71% - 15% = 151.79

The purchase rate given by the supplier on drug 'X' should be equal to Rs 151.79. If the amount exceeds than Rs 151.79, a revised copy of the bill is ordered by the pharmacy to the supplier.

Note 1. If we add 12% to 100, we get 112, but if we deduct 12% from 112, we get 98.56. Hence 10.71% is deducted from MRP.

Note 2. Margin given by the Supplier is different for different items.

4. Setting of Sale Rate

After checking the purchase rate given by the supplier, the sale rate is calculated by the following calculations:

Suppose in the above example pharmacy get a 6% additional discount; the net rate is calculated by deducting 6% from purchase rate which will be 151.79 - 6% = Rs 142.68.

Net rate + Pharmacy Margin + Tax = Sale rate

142.68 + 18% + 12% = Rs 188.57

Note 1. If scheme is provided for an item like 12 + 2, net rate can be calculated by using following calculations:

(Total quantity of item received – Quantity of scheme) * Sale rate / Total quantity of item received

Net rate = (14 - 2) * Sale Rate / 14

All other calculations remain same as above.

Note 2. Usually in pharmaceutical products, retailers' margin is kept at 16%, 18%, and 20% while stockist margin is kept at 8%, 9% and 10%.

After updating the purchase invoice in the computer system, the bill is passed by the purchase manager and three more details are written by the purchase manager, which are purchase number generated by the software, passing date (the day on which bill was passed) and the amount payable

to the party. This bill is filed serially in purchase report index file. The new index file is used after every 10 days that is 3 files for a month. This index file is then sent to the accounts department on the 10th day of each month.

Barcodes are printed once the purchase invoice is stored in the system. Two full-time personnel are used to stick the barcodes on individual units of items. The items with barcodes are placed on their own place by 9pm at night. The whole above process from receiving the items to items going on their own place with barcodes on it takes approximately a day to complete.

5. Store Management

Pharmacy Stock Management:

- Drugs which are ordered in bulk are kept where wholesale stock is held, and just 1 - 3 boxes are kept in the front pharmacy.
- Drugs are stored alphabetically on shelves in front pharmacy, cold storage and the place where wholesale stock is stored.
- Shelves of high risk, sound alike, look alike, anti-cancer and narcotics drugs are marked and easily visible.
- Surgical, ointments, antibiotics, injectables and syrups are kept separately and can easily be found on their own place.
- FIFO system is used in the pharmacy.
- The products which are yet to be barcoded are kept in the red shaded area shown in figure 10 and which are already barcoded are kept on their respective place.

Storage Conditions:

- The temperature of cold storage is kept at 2 to 8-degree Celsius.
- The temperature of the refrigerator is maintained at 8 to 15-degree Celsius.
- The room temperature is maintained at below 30 degree Celsius.
- Power is backed up by generators in the whole pharmacy in case of power outages.
- Daily temperature recording takes place by pharmacy personnel.

Safety Measures:

- There are three fire extinguisher, eight smoke detectors and one fire water pump in case of fire emergencies.
- Surveillance cameras cover each part of the pharmacy.

- Protocols for a code red (fire), code blue (medical emergency), code yellow (external disaster), code black (internal disaster), code violet (violence likely) and code pink (child abduction) are clearly mentioned on a paper in front pharmacy.
- List of anticancer, narcotics, lookalike, soundalike and high-risk drugs are mentioned on a paper, visible in front pharmacy.

6. Dispensing

When the patients come to the pharmacy with prescriptions, the prescriptions are first collected and kept in the tray. Prescriptions are kept in such a way that the patient receives the drugs on a first come first serve basis. Personnel working in pharmacy takes the prescription removes all the items as per prescriptions and keeps it in a tray. This tray is taken to the billing counter, and the biller crosses checks all the items as per prescription, if there is full strip or syrup, it is scanned by the barcode scanner or else information is manually entered in the software. Sale bill is generated which is then exchanged for money at the counter.

Note 1. Prescriptions of chemotherapy patients come in preprinted format, with a physician just circling down the items and quantities required. If additional drugs are required for such patients, it is written on a separate page.

Note 2. There are two types of sale bills generated by the software depending upon the patients, cash bills and credit bills; credit bills are given to empaneled patients.

7. Managing Returns and Expiry

BMCHRC also accepts the return of the drugs at the same rate as sold. A patient comes with medicines he wants to return. Sale return bill is generated in the system. Only the items which were sold and mentioned in the bill are accepted, and the refunded amount is given to the patient.

Note 1. Cold storage items are not accepted by the pharmacy due to quality issues.

Note 2. Four copies of sale and sale return bills are generated for the empaneled patient; one copy is given to the patient, one is kept with the pharmacy, two copies are given to the accounts department, out of which one copy is sent to the concerned department by the accounts department. For cash patients only two copies are removed, one for the patient and other for the pharmacy.

Expired products are collected and returned to the respective vendors within three months of its expired date. If the drugs are expired for more than three months and are not returned to the supplier, the loss is beared by the pharmacy.