Internship Training

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Effect of Covid19 Pandemic on usage and Disposal of surgical disposables: A comparative study of a government and private hospital

by

Name Dr. Somya Mathur

Enroll No. PG/20/085

Under the guidance of
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PGDM (Hospital and Health Management)

2020-22

International Institute of Health Management ResearchNew Delhi

(Completion of Dissertation from respective organization)

The certificate is awarded to

Name Dr. Somya Mathur

in recognition of having successfully completed his/her
Internship in the department of

Title **Operations Strategy**

and has successfully completed his/her Project on

Effect of Covid 19 Pandemic on usage and disposal of surgical disposables: A comparative study of a government and private hospital

Date 21/6/22

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She comes across as a committed, sincere & diligent person who hasa strong drive & zeal for learning.

We wish her all the best for future endeavors.

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The Candidate has successfully carried out the study designated to him during internship training and his/her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements. I wish her all success in all her future endeavors.

Dr. Sumesh Kumar
Associate Dean, Academic and Student Affairs
IIHMR, New Delhi

Mentor

IIHMR, New Delhi

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The following dissertation titled "Effect of Covid 19 Pandemic on usage and disposal of surgical disposables: A comparative study of a government and private hospital" at **"MEDI KARMA" A Part of Kansons Overseas Ltd"** is hereby approved as a certified study in management carried out and presented in a manner satisfactorilyto warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood thatby this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

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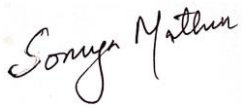

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KANSONS OVERSEAS LTD.

Area of Dissertation: OPERATION & STRATEGY

Attendance: DECEMBER'21 To PRESENT

Objectives achieved: Dr. Sonya helped the organization in evaluating and designing growth strategy for the organization. And helped in developing the Training module for new trainees

Deliverables:

Strengths: Diligent, Hard working, Intelligent, Is able to have candid feedback with Team and is a team player

Suggestions for Improvement:
In depth understanding of H/Care sector, Communication skill

Suggestions for Institute (course curriculum, industry interaction, placement, alumni):

IIHMR → Should expand their horizon of current curriculum. They should make students aware of the overall healthcare sector and make them upto date on the latest changes in Healthcare sector. The ~~Int~~ Institute should also focus on Medical Device

Signature of the Officer-In-Charge/ Organisation Mentor(Dissertation)

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Place: New Delhi

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Acknowledgment

The internship opportunity I had with MeriKarma was an excellent chance for learning and professional development. Therefore, I consider myself a very lucky individual as I was provided with an opportunity to be a part of it.

I am using this opportunity to express my deepest gratitude and special thanks to Mr. Puneet Kanodia(Director-Medikarma), who, despite being extraordinarily busy with his duties, took time out to hear, guide, and keep me on the correct path and allowing me to carry out my project at their esteemed organization and extending during the training.

It is my radiant sentiment to record my best regards, most profound sense of gratitude to my mentor Dr. vinay Tripathi (Professor, IIHMR Delhi), for his valuable guidance and co-operation in my endeavor.

I perceive this opportunity as a significant milestone in my career development. I will strive to use gained skills and knowledge in the best possible way, and I will continue to work on their improvement to attain my desired career objectives.

Dr. Somya Mathur

Abbreviations

PPE	Personal protective equipment
Sars Cov2	“severe acute respiratory syndrome coronavirus 2
BMW	Biomedical Waste
BMWD	Bio Medical waste disposal
AIIMS	All India Institute of Medical Sciences
WHO	World health Organization
UV	Ultra violet
OSHA	Occupational Safety and Health Administration
USEPA	United States Environmental Protection Agency
CPCB	Central pollution control board

FIGURES

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PART A

INTRODUCTION TO MEDI KARMA

[1]Established in the year 1993, the Kansons Group is a diversified business house, with each business being successfully managed by team of professional. In 2015, the group forayed into healthcare segment under the brand Medi Karma to manufacture world class Single Use Sterile - Non Sterile Protective and Hygiene wear for Indian and International market. Our product range include wide array of Surgical Drapes, Surgical Gowns, Surgical Drape Packs, Protection Kits, Scrub Suits, Hospital Linen etc.

We take pride in our Quality Management and we are manufacturing under Clean Room Environment. Our Products confirm to the high level of liquid barrier protection with Medical Grade packing as per EN 868 Standards. All Products are sterilized as per ISO:11135. We are an ISO:13485, and BIS certified organizations.

We understand the direct impact our products can have on the lives of the patients and clinical staff, hence give most importance to the Quality. We are driven with the mission – “One Product. One Life.”

Our plant is located in Sector -2, Noida. We are consistently supplying our products to leading Corporate and Government Hospitals across India, and Exporting our products to USA, Canada, UAE, and few of the African countries.

The Group is actively engaged in girl child education and vocational skill training of young women on the lines of “Beti Bachao Beti Padhao” initiative.

OUR CORE VALUES

As depicted in our logo:

- Team work
- Perfection
- Harmony

QUALITY:

- Quality management system implemented across plant
- ISO 9001:2015 approved state of art manufacturing unit.
- Manufactured in clean room environment- class 100
- Products conform to high level of liquid barrier protection
- Medical grade packing is sourced as per EN 868 European Standards
- Products are sterilized as per ISO: 11135 level of sterility
- Each product undergoes 5 level of inspection along with proper tagging
- Business is led by experienced healthcare professionals

INFRASTRUCTURE AND TEAM

- Our plant is spread over 10,000 sqft. Based in Noida(Uttar Pradesh)
- Clean room environment – class 100
- Plant is equipped with latest automated machines
- Manufacturing is managed by Vice President, with over 30 years of experience
- Governing body includes
    - Two highly qualified and experienced surgeons
    - Industry veteran

- To ensure consistency in quality and technical specification
- Business is led by experienced healthcare professionals

General Product Offerings:

- Surgical Drapes
- Medical Clothing
- Surgical Gown
- Surgical Drape Packs
- PPE Kit
- Surgical Trolley Cover
- Hospital Uniform
- PRODUCT OFFERING
- Surgical Drapes
- Medical Clothing
- Surgical Gown
- Surgical Drape Packs
- PPE Kit
- Surgical Trolley Cover
- Hospital Uniform

FIGURE 1

Cardiology :

- Angiography Drape
- Angioplasty Drape
- CABG/CTVS Drape

Orthopedics :

- Knee 'O' Drape
- Hip or Leg 'U' Drape
- Hip 'O' drape pear shaped with side pockets
- Arthroscopy Drape

Obstetrics & Gynecology Drape :

- Caesarean Drape
- Caesarean Drape with fluid Collection pouch
- Under Buttocks drape with fluid Collection pouch

Urology :

- TURP Drape
- PCNL Drape

Ophthalmology :

- Eye Drape
- Eye Drape with pouch

Neurology :

- Craniotomy Drape
- Lamino Spinal Drape

General Surgery :

- Major Drape
- Large Drape
- Small Drape
- Basic Surgical Pack
- Cut/Fenestrated Sheet

FIGURE 2 & 3

LIMITATIONS

This study is limited to the Ophthalmology department of All India Institute of Medical Sciences and main branch of Metro group of hospitals i.e. to Metro Heart hospital Noida sec 18.

The quantitative data from All India Institute of Medical science including figures of expenditure on disposable in SCoV2 infection was not collected as per the government guidelines and ethics committee of AIIMS New Delhi.

PART B

PROJECT REPORT

INTRODUCTION:

Infection control has always been a major area of concern in medical industry. It not only helps in the prevention of spread of infection but also reduces the burden on hospitals and thereby reducing the length of stay of a patient in a hospital. Medical surgical disposable are the devices that are used one time on one patient during a medical procedure and then are discarded. The medical surgical disposable device industry is a billion dollar industry as the cost of these surgical disposable devices is on a higher side as compared to the reusable surgical devices. But the demand of these disposable surgical items are on a rise as the use of surgical disposable plays a very critical role in the infection control during and after surgery. Unlike reusable medical surgical device which needs to be sterilized before every use, disposable surgical devices are pre sterilized and can be directly used on a patient and thereafter can be discarded. This also reduces the chances of cross contamination between patients and hospital staff.

Medical disposables are the products that are used on a single patient for a single procedure for one time and then are discarded as they get soiled. These are generally made up of micro plastics. Some of the wearable disposable such as drapes, gowns, head caps, shoe covers et are made up of fibers of cotton infused with micro plastic to give them strength to withstand the forces of wear and tear.

Surgical disposable gloves are made up of latex or nitrile like material that is used for various general and surgical procedures.

During Covid19 pandemic another kind of surgical disposable that was widely used were the Personal Protective equipment or PPE. They are the wearable surgical disposable that were used by healthcare providers widely across the globe to protect them for getting exposed to the deadly Covid19 infection.

However the availability of these surgical disposable was in scars as the demand was high and the country preparedness for fighting such kind of Pandemic was not up to the mark. The hospitals across the globe suffered difficulty in procurement of the required PPE kits.

The second problem that surfaced in the later stage of the usage of the PPE kits was the disposal of all the waste that was generated in various healthcare setups. Although the government has already a good and widely used methodology and guidelines for biomedical waste disposal but the increased used of surgical disposables with micro plastic has raised new concerns in the waste management of soiled disposables.

The already existing protocols of Biomedical waste disposal was amended a little for covid19 waste management and new protocols where introduced by the “”

Fig:4 Biomedical waste disposal guidelines 2016[6]

As per BMW Management Rules 2016 & its Amendments, BMW generated during screening, treatment, management & immunisation, etc from COVID-19 Patients and Healthcare Staffs working in wards should be segregated as follows. Onsite Pre-treatment of certain categories of waste and segregation are the core responsibilities of the Healthcare Facilities (HCF). Collection, processing, treatment & disposal will be done by the Common Biomedical Waste Treatment & Disposal Facility (CBMWTF).

CATEGORY OF WASTE	COLOR CODE (NON-CHLORINATED BAGS)	PRE-TREATMENT REQUIRED OR NOT	FINAL DISPOSAL OPTION AT CBMWTF
Soiled waste like items contaminated with blood (excluding blood bags) & body fluids, cotton swabs, etc	YELLOW	Not required	Incineration
Chemical used in the labs, Liquid waste generated in Labs, used or disinfectants to be discarded, infected secretions, aspirated body fluids, floor washings & other housekeeping & disinfecting activities	YELLOW	Separate Collection system leading to Effluent Treatment Plant for pre-treatment & neutralization	The pre-treated liquid waste shall conform to the discharge norms and then is lead to the general drain.
Personal Protective Materials like face mask, gown, caps, etc (made of fibre material or others except those made of disposable plastics)	YELLOW	Not required	Incineration
Discarded Linen, beddings contaminated with blood or body fluid	YELLOW	Not Required	Non-chlorinated Chemical Disinfection followed by incineration.
Microbiology & Laboratory waste like cultures, stocks, specimens, vaccines, dishes and devices used for cultures, blood bags, etc.	YELLOW	Pre-treatment with non-chlorinated chemicals or autoclave, microwave or hydro-clave in safe plastic bags or containers.	Pre-treated and followed by incineration.
Gloves even if contaminated with blood & body fluids	RED	Not required	Autoclaved, shredding followed by recycling.

IV tubing, bottles, sets, catheters, urine bags, vaccutainers, etc	RED	Not Required	Autoclaved, shredding followed by recycling.
Broken or intact glassware's, medicine vials, ampoules except those contaminated with Cytotoxic Waste.	BLUE Puncture proof, leak proof box or container with blue marking	Not required	Disinfection then recycling.
Metallic Sharp waste like needles, scalpels, blades, syringes with fixed needles.	WHITE Puncture proof, leak proof, tamper proof containers	Not Required	Autoclaving, shredding followed by encapsulation or disposed in iron foundries.

Table 1

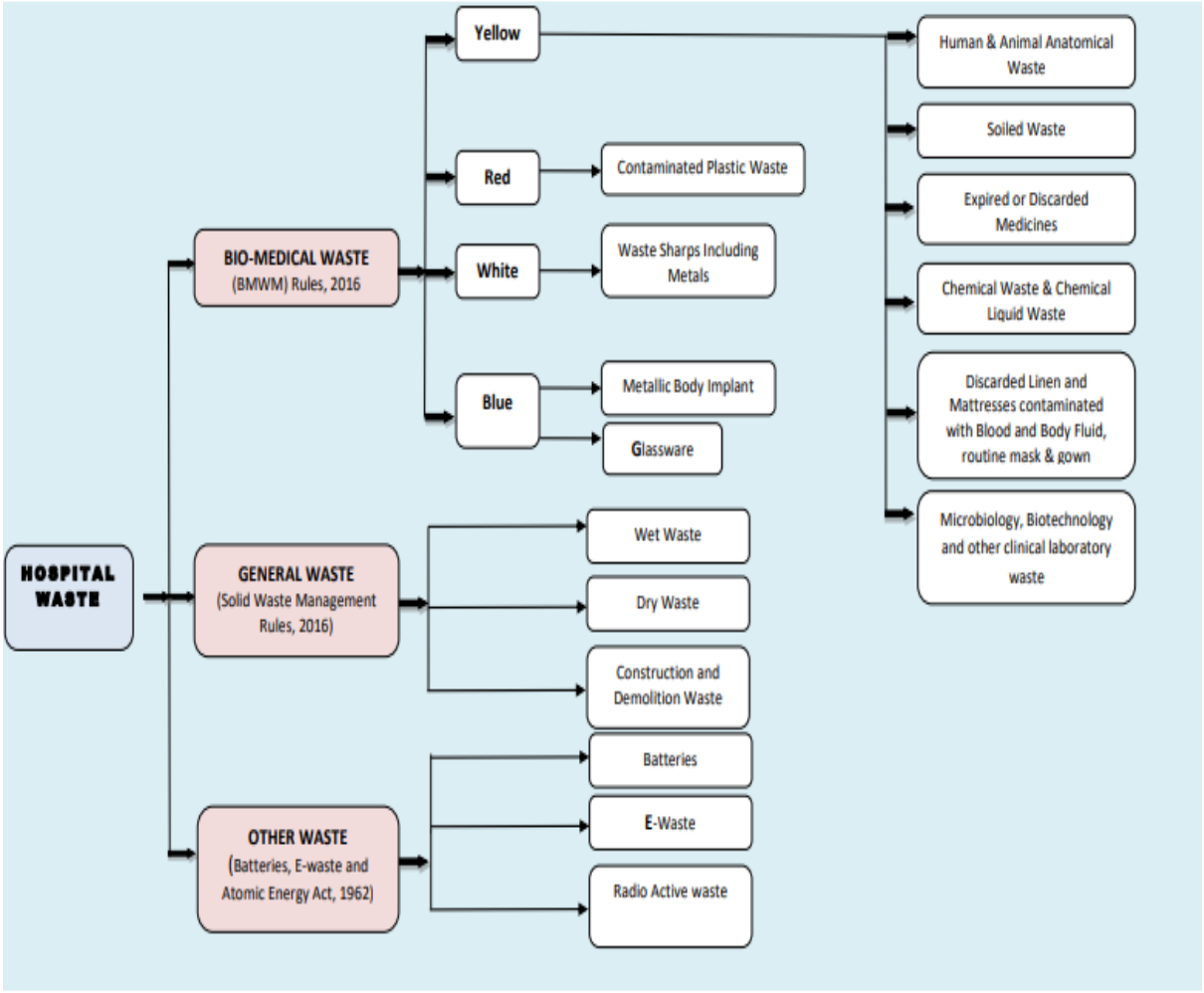

Fig:5 The 2016 Guideline for waste segregation 2016(pre Covid19 Pandemic)

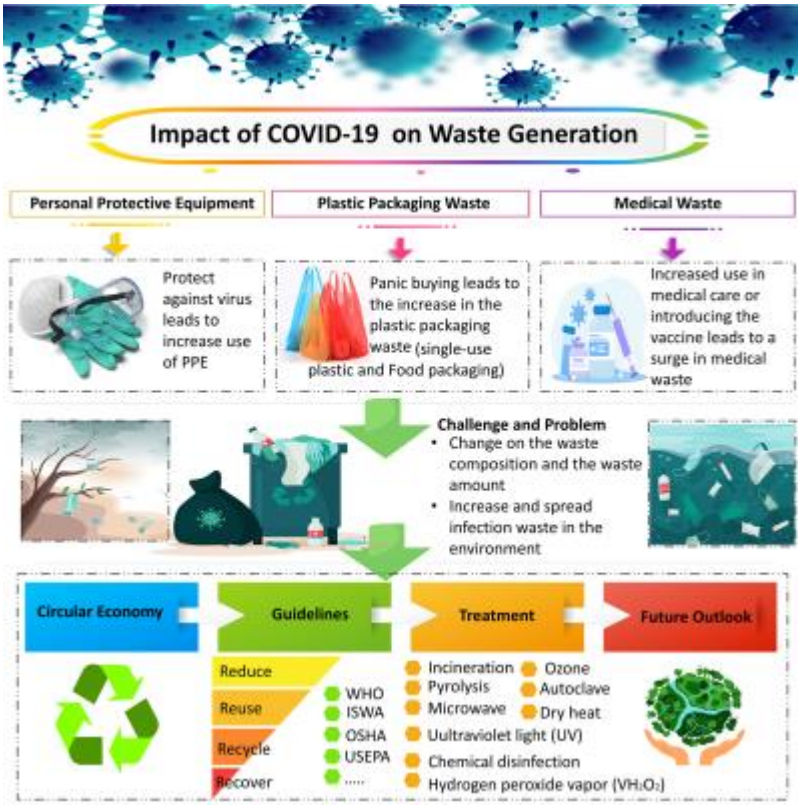

Fig:6 Biomedical Waste Disposal Protocols Covid19[5]

Literature Review

Soon after the spread of Covid19 infection worldwide, the governments started putting in new guidelines to prevent the spread of infection in the community. These mandates included mass use of Masks in public places and physical distancing as the mode of spread of Covid19 is through aerosol.

Covid 19 first case in India was reported in Jan 2020 and as of now India has reported [2]

Total cases	Deaths
4.32Cr	5.25L
4,32,00,000	5,25,000
+8,822	+15

The rise in cases increased the usage of more reliable and less infection causing alternatives in Hospitals and healthcare set ups. These included surgical drapes, gowns, PPE kits, Masks, shoe cover etc.

Surgical practice have been extensively impacted by Covid19 infection, issues such as workforce and staffing, procedural prioritization, intraoperative virus transmission. As well as surgical education are affected by the virus spread.

[3]*Arch Surg.* 1976 In today's multibillion dollar industry for health devices, disposable products play a key role. Disposable products used by surgeons prove that economy has a very limited role in converting from reusable to disposable products.

The major reasons depends upon various factors including but not limited to Surgeons/operators preference, product availability in the specific area, ease of procurement of product, ease of use or usability, dependence of certain factors like infection control , safety, and, in some cases, manufacturer's promotion.

[4] ***Agraw T***. Multiple reports on micro plastic pollution due to increase in plastic products has seen to be impacting the environment in recent years. The disposables used in surgery and hospitals including face masks surgical drapes, gowns, head cap etc are made up of these micro plastics. The aquatic life has majorly been affected due to the use of these micro plastics multiple reports are there showing the same but still is not proved. The face masks and other disposable surgical items can also reach out to the aquatic

AIM:

To analyze the shift of use and waste management of medical surgical reusable devices to medical surgical disposable devices, and its effectiveness in hospital infection control before and after covid-19 pandemic.

Objectives

1. To examine the need of surgical disposable in medical industry specifically during COVID-19 time
2. To compare the change in usage trend of surgical disposable and standard operating procedure before and after covid-19 pandemic.
3. To examine the process of disposing the surgical disposal before and after COVID-19 pandemic
4. To find out the financial implications of increased use of surgical disposables on both patient and medical industry including, hospitals

Methodology

Study Design: A descriptive cross sectional study

Study Area: Government and private hospital in Delhi

Data Source: Both Primary and secondary data will be used for the study. Secondary data will include the study that includes the implications of use of surgical disposable in hospitals like the cost incurred, change in the use of different types of surgical disposables like surgical drapes, gowns, kits like disposable HIV kit, disposable sleeves etc.

Tools for collection of primary data: Interview in the form of questionnaire will be done from the purchase officer/Doctor/OT in charge

Study Duration: 1st April 2022 to 15th May 2022.

Expected outcomes: Understand Overall outcome of use of surgical disposables in the hospital including its Impact on the patients wellbeing

Mode of data collection: Interview Based

Keywords: **Medical devices, surgical medical devices, Disposable surgical devices, biomedical waste, Biomedical waste disposal, Covid-19, Standard operating procedure**

Results

The natural history, pathophysiology, and treatment of this disease are unknown because it is a new disease. As a consequence of the pandemic, a sustained need for health infrastructure, health personnel, and healthcare support staff is often created in developing countries. As a result of the pandemic, countries throughout the world have mobilized their healthcare resources to combat disease. Government of India order to increase the domestic production of PPE kits due to increase number of cases. The 1st 1 lakh case took almost 2 months but the next 1 lakh cases came in just 12 days. Domestic production capacity in the month of April was 6000-7,000 PPE per day; now it is 2 lakh PPE per day.[9]

PPE USED BEFORE AND AFTER COVID19 PANDEMIC

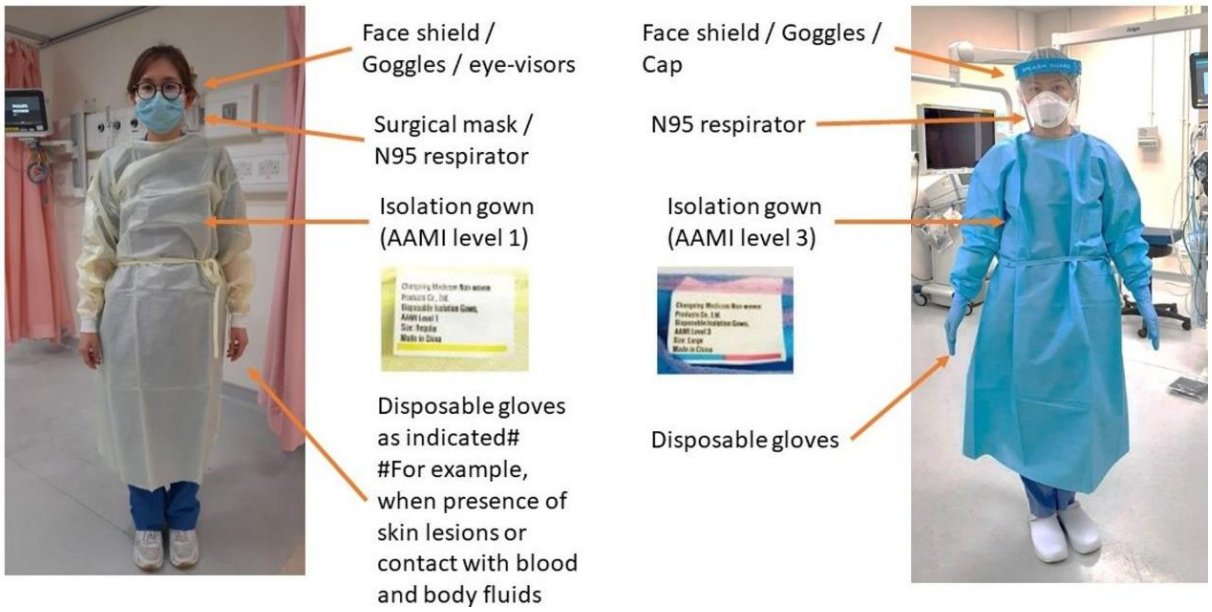

Figure 7

AIIMS (Ophthalmology center New Delhi)

Data was collected from this center from a senior nurse in the department of ophthalmology. The center for eye in AIIMS New Delhi is named as R.P Center for Ophthalmic science. The center was established in 1976 with a vision to reduce blindness in the country.

Approx. Hops. Investment for covid19(Rs L)		71crore
Total Annual Procurement (Rs L)		47.3Crore
Annual Surgical Consumables Proc (Rs L)		71Crore

Table 2

a. **N**umber of surgeries performed in a day in the AIIMS center was found to be more than180 surgeries a day

b. Number of staff currently associated is 180 regular working staff and more than 80 students, residents and housekeeping staff

c. The hospital has marked increase in the expense in the usage of disposable since Covid19 surfaced. As revealed by the institute on Answers to Right to Information Act requests, Artificial Intelligence Institute of Medical Sciences (AIIMS) Delhi has spent Rs 71.17 crore (Rs 7117.64 lakh) on novel coronaviruses.[7]

d. Other than OT and surgeries the disposables are mainly used for infection control by nurses and doctors who regularly visits In patients.

e. These disposable mainly are as follows:

- Shoe cover
- Face Masks
- Head Caps
- Gloves (examination/surgical)
- PPE kits
- Protective eye gear
- Face shield

Figure 8: Disposable Protective Kit

f. Use of disposable patient sheets and gowns are limited These disposables are mainly used on sero positive or viro positive patients where infection control and cross infection is the prime concern

g. On an average on 5 sets of disposable surgical products are used in AIIMS ophthalmic science center.

h. AIIMS uses the new guidelines for disposal of biomedical waste as per the new guidelines. The anatomical waste are disposed in a double layered yellow color coded bags and the red plastic bags are autoclaved and then used for disposal of biomedical waste. However the code for collection and segregation of waste has been modified as to maintain the safety of the healthcare worker collecting the biomedical waste. The Hospital disposes waste almost twice or thrice in a day through dedicated vehicle carrying waste.

i. Patients when asked about their choice of surgical disposable while getting treated, they prefer disposable over reusable gowns and drapes as the Covid19 infection has changed the outlook of the patients towards infection control.

j. The Average length of Stay has been same as per the hospital and has minimum effect in the

recovery rate of patients due to surgical disposable increased use.

k. The hospital procured the surgical disposable through the Government E portal Bid. The hospital had supplies throughout the peaks of Covid19 wave. The hospital still have enough supplies and stock of the disposable with adequate preparedness of future surged if it comes.

Metro Heart Hospital

Metro Hospitals and heart institute is a very well reported institute in the National capital region of Delhi It is a 317 bedded and functional in two units

1. A dedicated to cardiac science hospital which is 110 bedded and
2. Metro multi-specialty, State-of-the-art 207 bedded specialty. Dr. Purshotam Lal, a pioneer in Interventional Cardiology, founded Metro Heart Institute in June 1997 with a goal to provide affordable, high-quality healthcare to the people of Noida, India.

Approx. Hops. Investment in Covid 19 (Rs L)	More than 50Crore annual	
Total Annual Procurement (Rs L)	21crore	
Product Category	**Per month Purchase Value (In Rs L)**	**Per month Purchase Value - Before Covid (In Rs L)**
Gloves	450000 per month	Same
Syringes	300000 per month	250000
Cannula	910000 per month	Same
Infusion sets	130000 per month	100000
Masks	40000	Same
Drapes	50000	30000

Others surgical consumables	700000	550000

Table 3

a. **N**umber of surgeries performed in a day in the Metro heart hospital sec 18 was found to be more than 20 surgeries a day

b. Number of staff currently associated in the Cardiac OT 30 regular working staff and more than 15 housekeeping staff

c. The hospital has marked increase in the expense in the usage of disposable since Covid19 surfaced.

d. Other than OT and surgeries the disposables are mainly used for infection control by nurses and doctors who regularly visit inpatients.

e. These disposable mainly are as follows:

- Shoe cover
- Face Masks
- Head Caps
- Gloves (examination/surgical)
- PPE Kit
- Eye Gear

f. Use of disposable patient sheets and gowns are limited These disposables are mainly used on sero-positive or viro-positive patients where infection control and cross infection is the prime concern.

g. On an average on 20 sets of disposable surgical products are used in Metro heart Hospital.

h. Metro Heart Hospital uses the new guidelines for disposal of biomedical waste. The BMWD like anatomical waste are disposed in a double

layered yellow color coded bags and the red plastic bags are autoclaved and then used for disposal of biomedical waste. However the code for collection and segregation of waste has been modified as to maintain the safety of the healthcare worker collecting the biomedical waste. The Hospital disposes waste almost twice or thrice in a day through dedicated vehicle carrying waste

i. Patients when asked about their choice of surgical disposable while getting treated, they prefer disposable over reusable gowns and drapes as the Covid19 infection has changed the outlook of the patients towards infection control.

j. The Average length of Stay has been same as per the hospital and has minimum effect in the recovery rate of patients due to surgical disposable increased use.

Interpretations

Comparative chart of Operators Preference between surgical disposable and reusable			
Criteria		AIIMS	METRO
I.	Choice of disposable	Reusable	Disposable
II.	Ease of use (operator)	Reusable	Disposable
III.	Surgeons Preference	Reusable	Disposable
IV.	Number of surgeries performed in a day	180	30
V.	Expenses Incurred on disposable per year Post covid19	71cr	22cr
VI.	Mode of PROCUREMENT of disposable surgical devices	Tender bid through Government E portal or GeM	Through multiple local vendors/traders
VII.	Ease of Procurement of Surgical Devices	The hospital requirement was fulfilled as soon as the raise in demand.	The hospitals suffered a lot of issues while procuring s the local vendors were also engaged to fulfill government
VIII.	Mode of waste management	As per government guidelines 2021 for covid19 waste management	As per CPCB guidelines 2016

Table 4

Conclusion:

Covid19 Pandemic has been one of the most aggressive spreading infections in the history of humankind

The healthcare sector preparedness to fight such pandemics in the future can be laid from the lessons learnt in this pandemic.

All though India has a high population but the disease spread in India and the disease control was done effectively by the administration with help of organizations like Medi Karma that helped not just government organizations by providing the supplies that were required during the pandemic but also private organizations got benefitted.

The hospitals like AIIMS have a environmental safety approach therefore are now preferring the non-disposable or reusable surgical kits over disposable ones as the disposable surgical kits have a significant amount of micro plastic that is not good for the environment

The New Covid19 protocols for the biomedical waste management not only helped the hospitals to effectively manage the infectious Biomedical waste but also helped in providing adequate protection to the healthcare worker safety who were involved in the Biomedical waste management. .

The expenditure for both the hospitals were high according to the need and demand.

Discussion:

The pandemics like covid19 open a plethora of circumstances to ponder upon for a country like India. A country with a population over 3 billion was on knees and under complete lockdown. The infection spread in community has higher chances to occur as the population is high. However India managed to fight the pandemic effectively and efficiently due to various reasons. The government acted as an aid in providing opportunities to local small manufacturers of medical devices to work freely in the pandemic.

However the countries preparedness to fight a pandemic was found to be lacking in infrastructure and planning. The big government facilities had all the aids needed but the small healthcare setups struggled to provide protective gears even to their staff in the beginning of pandemic. The metro situation was even more grieve in the Tier 2 Tier 3 cities where the local manufacturers were in scarcity,

Biomedical waste disposal protocols have been stringent and are followed by all the organization since 2016. The amendments in the protocols helped in protection of healthcare workers as well as the mode of transportation of BMW.

The disposables helped in protection of spread of infection and is the only effective way to stop cross infection, ie. Infection from one person to another in close proximity. But the recycling of such waste comes as a new challenge as all the disposable are composed of micro plastic that has been effecting the aquatic life since long period of time.

Research on multiple level are in progress to find a replicable yet effective protective kit to control the spread of infection.

Annexure 1

Interview Questions

Consent prior to Interview

I have understood that all data provided will be treated in strict confidence, and that my name will be anonymised. I understand that my data will be kept, securely, after the interview. I understand that this research has been approved by IIHMR Delhi Ethics Committee. I have understood the explanation of the research project provided to me. I have had the opportunity to ask any questions and they have been answered to my satisfaction

Signature

1. **Name of the Interviewee:**
2. **Age:**
3. **Gender:**
4. **Place:**
5. **Years of Experience in hospital**

Organization Details

1. Name of the organization
2. Year of establishment
3. Functional years
4. How many departments
5. Departments with OT/ Without OT
6. Number of staff associated with surgical departments
7. Hospitals burden of increased expense

Operators Prospective

8. Can you tell me the number of surgeries performed in a day in your hospital?
9. What are the requirements on surgical disposable in the departments other than OT and Surgeries?
10. What are the different types of disposables used?
11. On an Average can you help me with the approx number of disposables that are utilized in a day?
12. How do you dispose the soiled disposable?
13. What procedures are used in BMW disposal for different kinds of surgical disposable?
14. How many reusable surgical drapes/gowns are used?
15. What is the preferred choice? (disposable Vs Reusable)
16. Which do the doctors find more easy to Use (disposable vs Reusable)
17. Surgeons Preference?
18. From where do you purchase disposable, and what are examples of the quantities or categories of goods bought?
19. What are your criteria for selecting the most ideal suppliers and vendors

Patients Prospective

20. Do you think Patients are more comfortable in Reusable bed sheets or disposable sheets?
21. Do you think there Is change in Rate of infection control?
22. Change in Average length of stay of a patient?
23. Do you feel any change in the ALOS after using disposable surgical?
24. Do you feel any change in attitude of patient after increased use of disposable towards hospital?

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