SNS COLLEGE OF ALLIED HEALTH SCIENCE

Affiliated to The Tamil Nadu Dr MGR Medical University, Chennai

DEPARTMENT OF CARDIOPULMONARY PERFUSION CARE TECHNOLOGY

COURSE NAME: CSSD

UNIT I

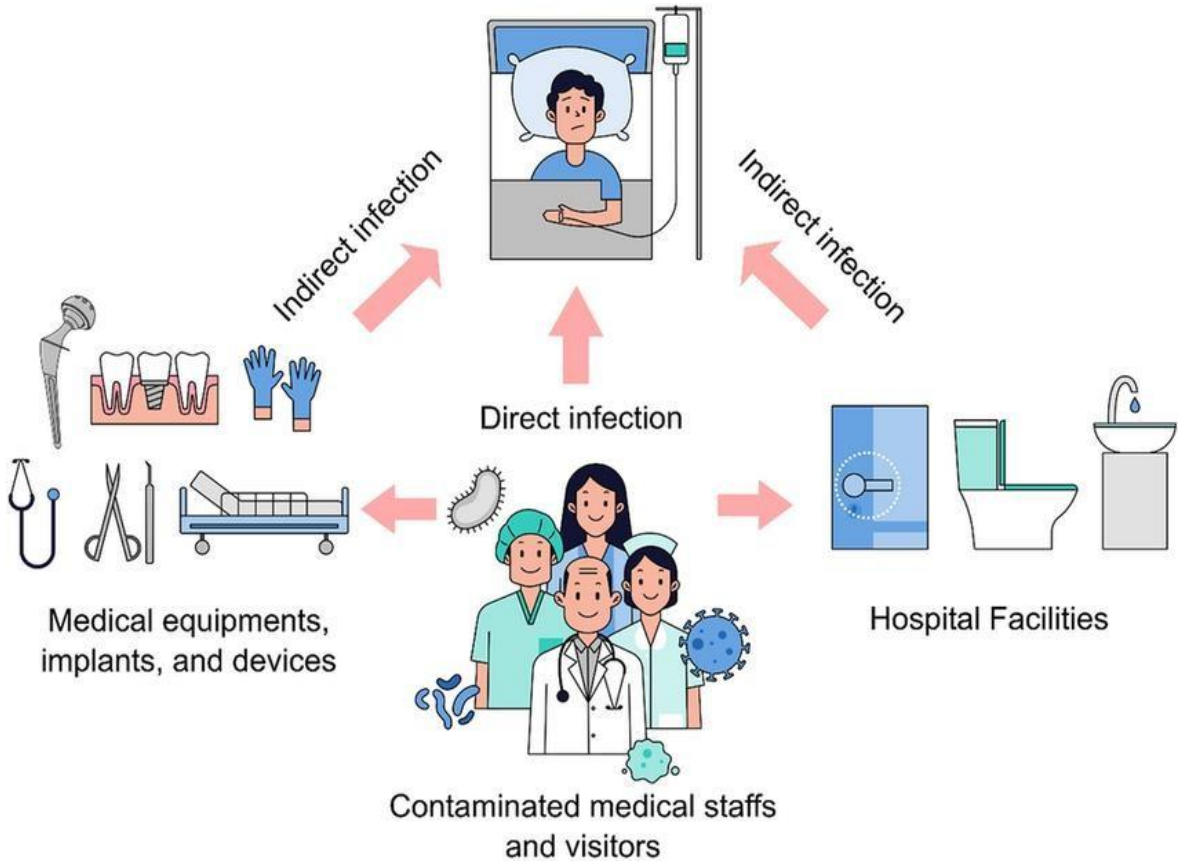
TOPIC : Cleaning of Catheters & Tubings

FACULTY NAME: Mrs. Saranyaa Prasath

Importance of Cleaning Catheters and Tubings

Why It Matters

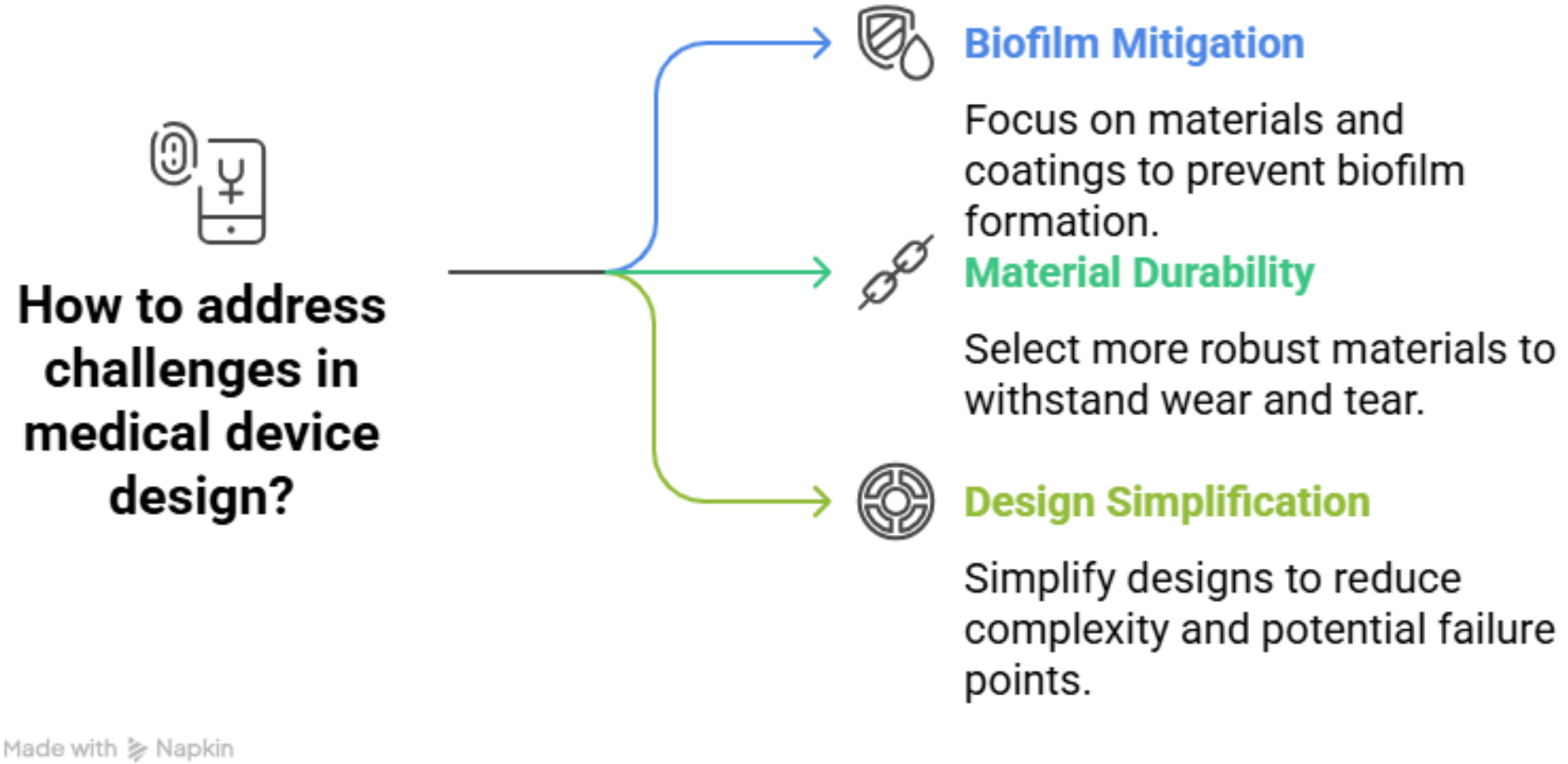
- Prevents healthcare-associated infections (HAIs).
- Ensures patient safety and equipment functionality.
- Complies with standards (e.g., CDC, AAMI, ISO 17665).
- Critical for semi-critical devices like catheters.



Design Thinking for CSSD Cleaning

- **Empathize**: Understand CSSD staff and clinician needs.
- **Define**: Identify challenges in catheter/tubing cleaning.
- **Ideate**: Develop effective cleaning methods.
- **Prototype**: Test cleaning protocols and tools.
- **Test**: Refine based on feedback and outcomes.

Characteristics of Catheters and Tubings



Methods for Cleaning Catheters and Tubings

- **Manual Cleaning**: Brushing lumens with enzymatic detergents.
  –Example: Soft brushes for Foley catheters.

- **Automated Washers**: High-pressure water jets and disinfectants.
  –Example: Washer-disinfectors for endoscopes.

- **Ultrasonic Cleaning**: For intricate tubings with debris.
  –Example: Cleaning suction tubes.

- **High-Level Disinfection**: Post-cleaning (e.g., hydrogen peroxide).

Empathize - Stakeholder Insights

CSSD Staff: Need safe, efficient cleaning tools and protocols.

Clinicians: Require reliable, sterile catheters/tubings.

Patients: Expect infection-free devices.

Pain Points: Inadequate cleaning, equipment damage, time delays.

Define & Ideate - Addressing Challenges

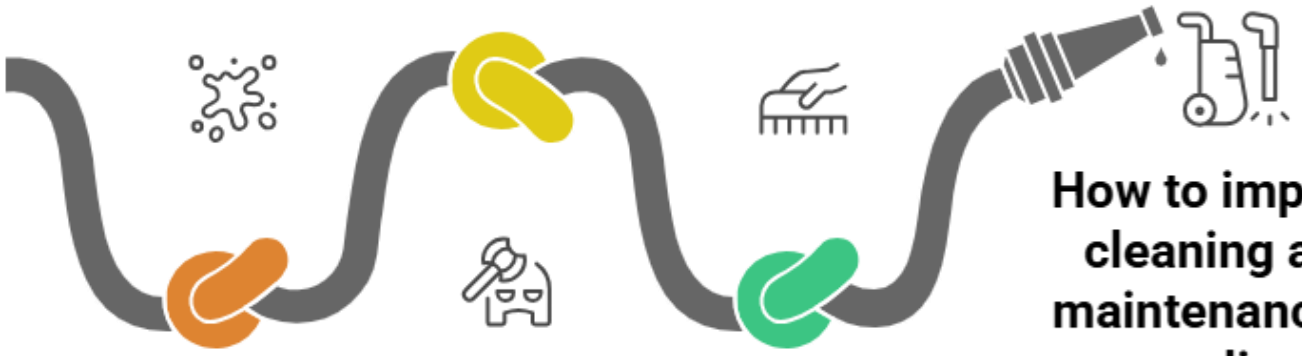
Complex Maintenance Due to Key Challenges

Biofilm Buildup

Resists standard cleaning methods

Manual Processes

Time-intensive and resource heavy



Material Damage

Harsh methods cause degradation

How to improve cleaning and maintenance of medical equipment?

Specialized Brushes

Effective for cleaning lumens without damage

Automated Washers

Reduces manual labor and ensures consistent cleaning

Staff Training

Enhances understanding of material-specific protocols

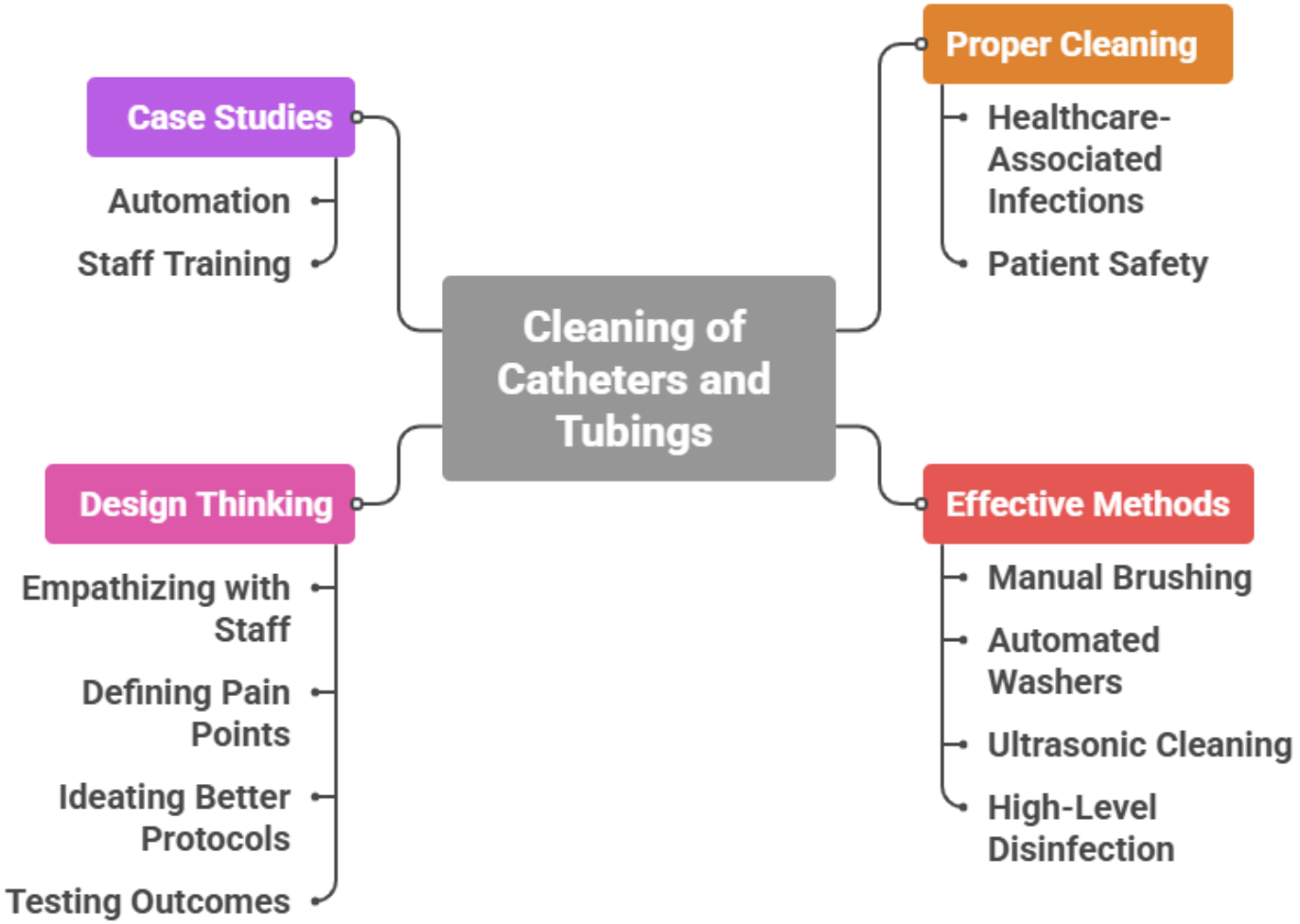
Case Study - Improving Catheter Cleaning

- **Case Study: Urban Hospital CSSD**
- **Problem**: High HAI rates linked to catheter contamination.

- **Intervention**:
  - –Implemented automated washer-disinfectors.
  - –Trained staff on lumen-specific brushes.
  - –Used ATP testing to verify cleanliness.

- **Outcome**: 30% reduction in HAIs, 20% faster turnaround.
- **Lesson**: Combining automation and training improves outcomes.

Summary


Cleaning of Catheters and Tubings
Proper Cleaning
Healthcare-Associated Infections
Patient Safety
Case Studies
Automation
Staff Training
Design Thinking
Empathizing with Staff
Defining Pain Points
Ideating Better Protocols
Testing Outcomes
Effective Methods
Manual Brushing
Automated Washers
Ultrasonic Cleaning
High-Level Disinfection

References

- Healthcare Sterile Processing Association (HSPA). (2023). *Sterile Processing Technical Manual, 9th Edition*.
- Centers for Disease Control and Prevention (CDC). (2016). *Guideline for Disinfection and Sterilization in Healthcare Facilities*.
- Association for the Advancement of Medical Instrumentation (AAMI). (2020). *ANSI/AAMI*
- *ST79: Comprehensive Guide to Steam Sterilization*.
- Rutala, W. A., & Weber, D. J. (2019). *Disinfection and Sterilization in Healthcare Facilities*.
- National Health Systems Resource Centre (NHSRC), India. (2020). *Guidelines for Central*
- *Sterile Supply Department*.

THANK YOU