

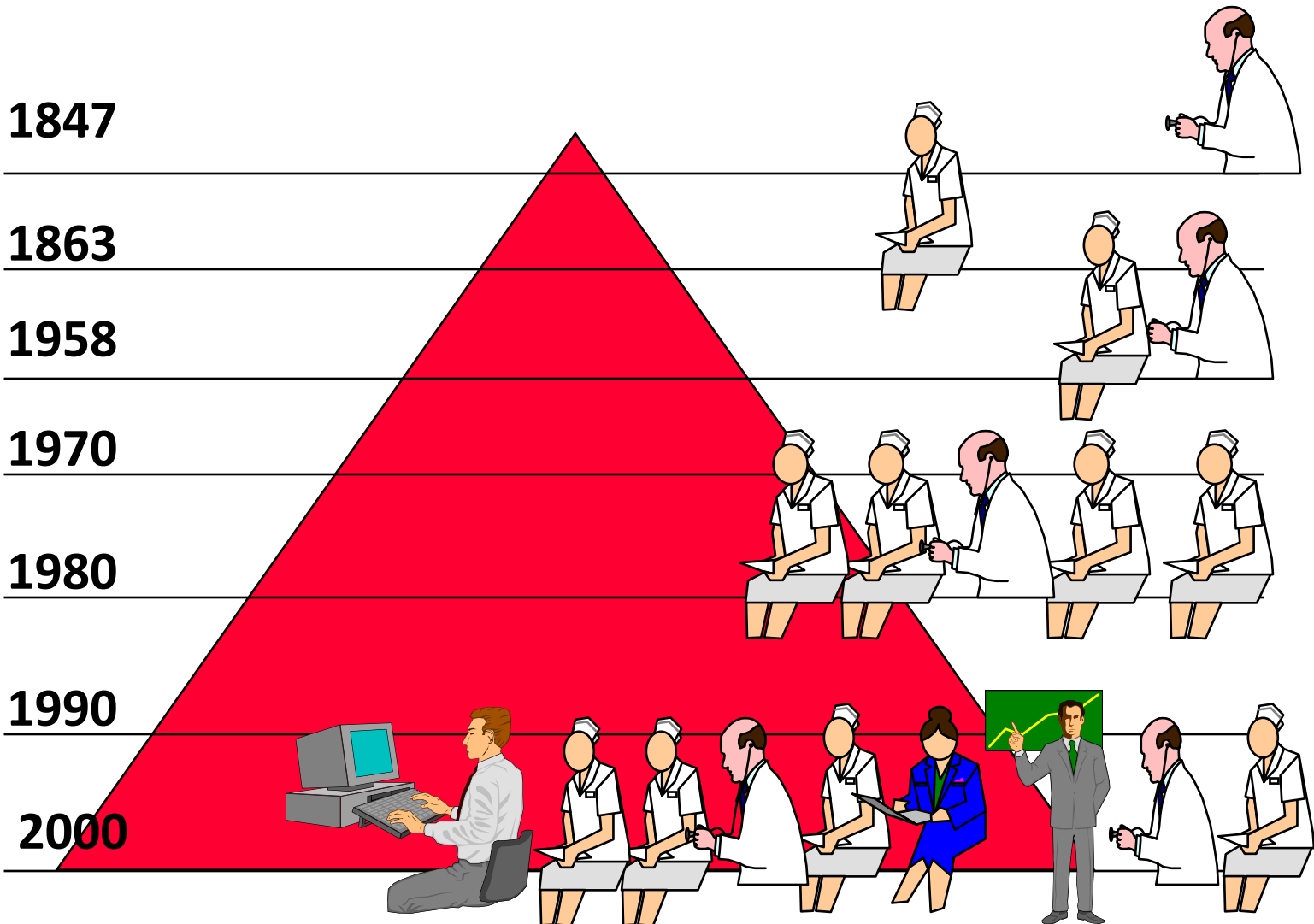
MR. JONES TOOK THE RISK OF INFECTION VERY SERIOUSLY.

Infection Control Practices in ICU Setting

Dr Ramasubramanian

Infection Control and Quality Health Care in the New Millennium

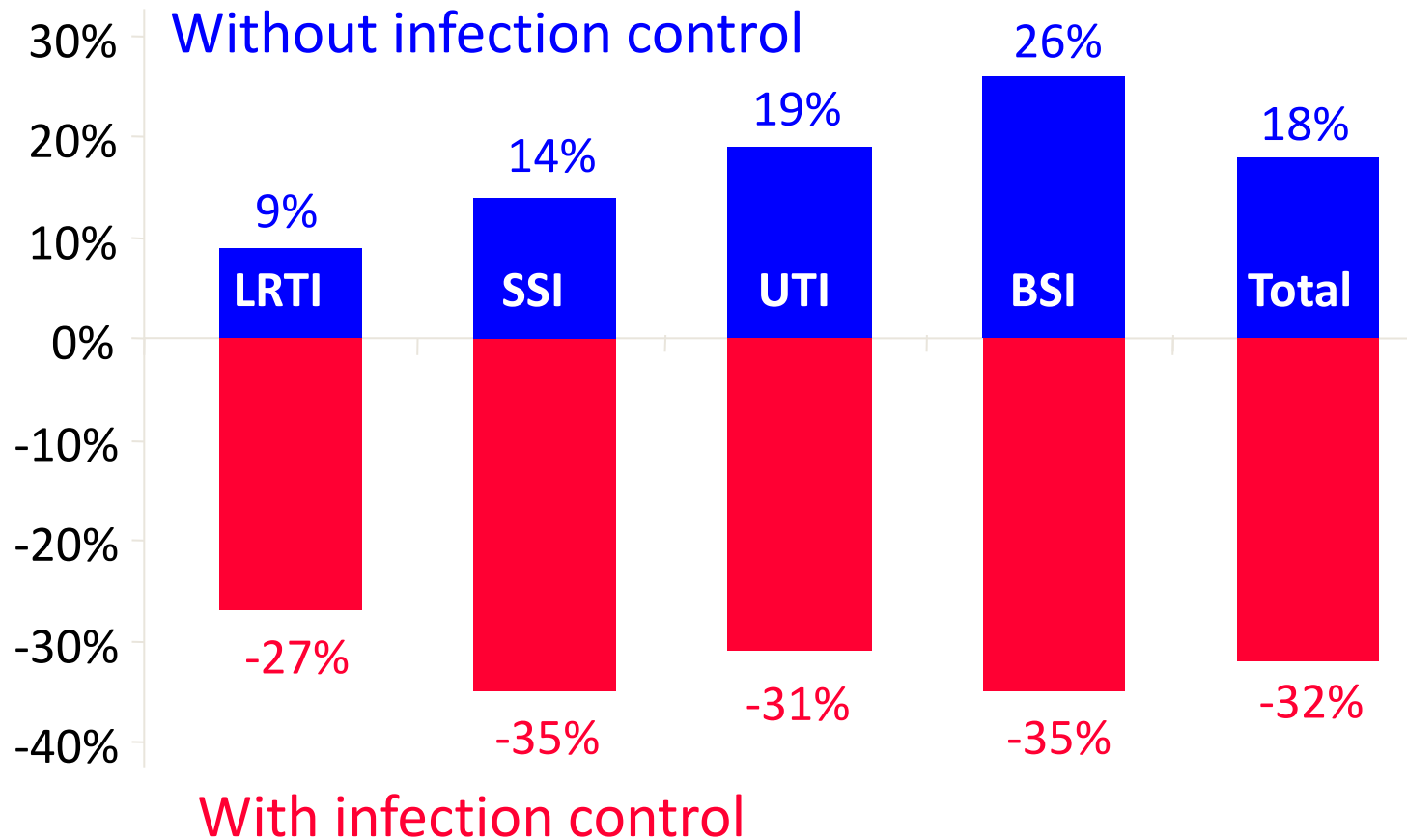
Multidisciplinary team approach



SENIC study

Study on the Efficacy of Nosocomial Infection Control

Relative change in NI in a 5 year period (1970-1975)

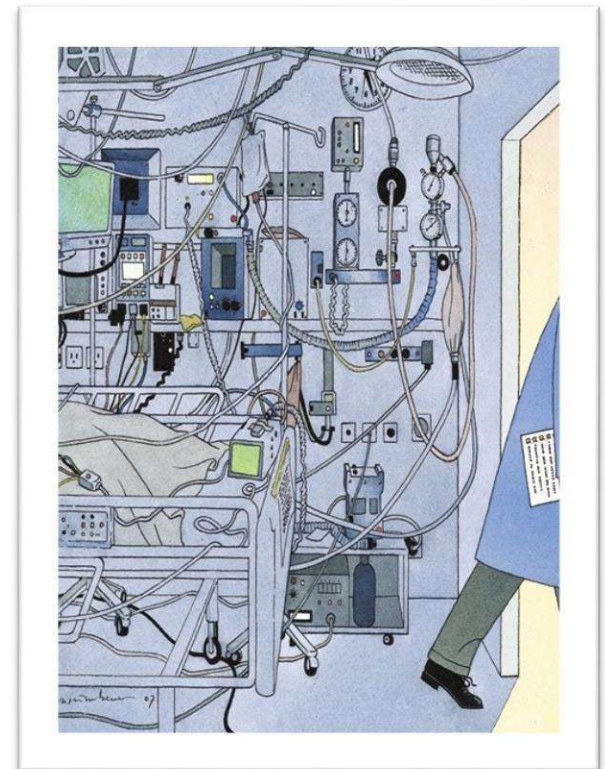


Key solutions and perspectives Of infection control prevention interventions

- Designing the ICU
- Standard precaution-HH & PPE
- Care bundles approach
- Isolating patients with MDRO and other communicable diseases to prevent cross transmission
- Cleaning and disinfection incl. equipment and medical devices
- Appropriate staffing ratios
- Antimicrobial stewardship
- Improving staff education and accountability
- Occupational health
- Improving reporting and surveillance systems

Optimal Requirements

- Bed space 100 to 125 sq ft
(4.5 ft distance between centres of adjacent beds!)
- Isolation rooms
- Clean & dirty utility rooms
- Wash sinks & certified source
- Feed preparation area
- Pt transportation routes
- Supply & service corridors
- Environmental control systems



Take Home Message: Clean Hands Save Lives



STANDARD PRECAUTIONS

A simple, consistent and effective approach to infection control



Handwashing



Use of gloves



Personal protective equipment



Use of fluid resistant gown or apron



Safe handling of sharps



Safe handling of waste



Safe handling of soiled linen



Environmental cleaning

Minimise contact with blood and body substances by utilising safe work practices and protective barriers.

STANDARD PRECAUTIONS APPLY TO ALL PATIENTS

Isolation Rooms



Fit and seal check

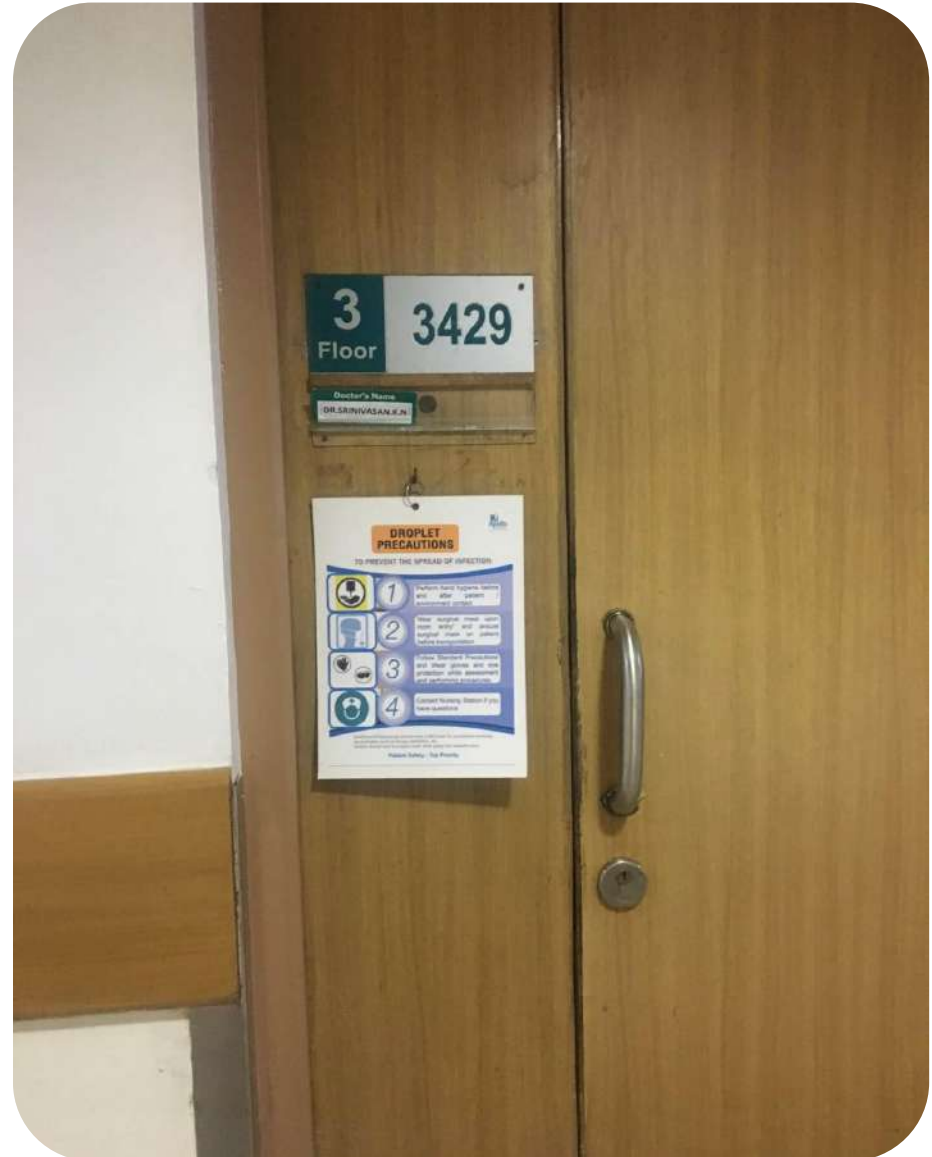
**Standard –
Negative – pressure
(Pa) rooms**

Air-borne Infection Isolation

- Use of negative pressure rooms placed in the room with the door closed
- Minimum 6 ACH for existing facilities, >12 ACH for areas under renovation or for new construction
- Pressure differential of 2.5 Pa (0.01-in. water gauge); air flow volume differential >125-cfm exhaust versus supply
- Sealed room, approximately 0.5-sq. ft. leakage
- Air from negative pressure rooms and treatment rooms exhausted directly to the outside if possible
- When the recirculation of air from All rooms is unavoidable, HEPA filters should be installed in the exhaust duct leading from the room to the general ventilation system
- How many do you need?

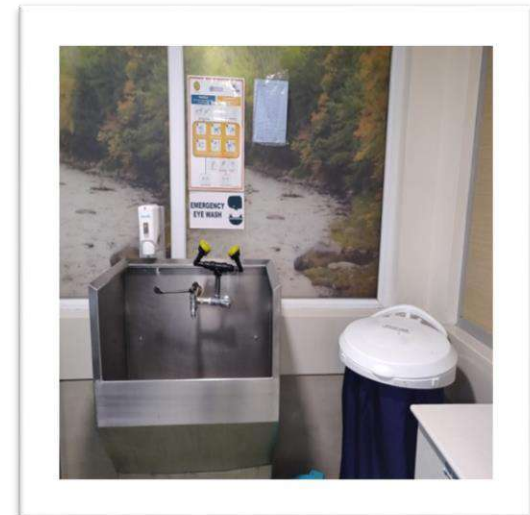
Droplet precaution

- Used for diseases spread via large droplets (>5 microns)
- Private room
- **Special air handling not required**
- **Personnel Surgical mask upon entering room**



Wash Areas

- Hand rub 1:1
- Sinks, ideally 1:5 to 1:2
- Sink drains harbour 10^6 – 10^{10} CFUs
- Commonly ESBL GNB & CRE
- Often reported as source of outbreaks
- Splash-back risk & distance between tap and plug hole often implicated



Feed Preparation Area



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ESPEN Guideline

ESPEN guideline on clinical nutrition in the intensive care unit

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Appropriate storage



Care Bundles

When you think of Bundles what do you think about?



“a collection of things, tied or wrapped up together”

In a prospective study of patients in 103 intensive care units (ICUs), Pronovost et al. showed that adherence to five evidence-based interventions resulted in a 66% reduction of bloodstream infections

- A Care Bundle is a collection of interventions (usually 3-5) that are evidence based
- A Care Bundle is a means to ensure that the application of all the interventions is consistent for all patients at all times thereby improving outcomes

VAP bundle care

- Hand hygiene
- Head end elevation 30-45
- Oral care with 0.2%CHG and mechanical brushing
- Subglottic suction every 2nd hrly
- Endotracheal cuff pressure monitoring 8th hrly
- Sedation vacation and spontaneous breathing trail

CAMBRIDGE
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Strategies to Prevent Ventilator-Associated Pneumonia in Acute Care Hospitals: 2014 Update

Author(s): Michael Klompas MD MPH, Richard Branson MSc RRT, Eric C. Eichenwald MD, Linda R. Greene RN MPS CIC, Michael D. Howell MD MPH, Grace Lee MD, Shelley S. Magill MD PhD, Lisa L. Maragakis MD MPH, Gregory P. Priebe MD, Kathleen Speck MPH, Deborah S. Yokoe MD MPH and Sean M. Berenholtz MD MHS

Source: *Infection Control and Hospital Epidemiology*, Vol. 35, No. 8 (August 2014), pp. 915-936

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Stable URL: <https://www.jstor.org/stable/10.1086/677144>

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Antimicrobial stewardship



Leadership commitment

Demonstrate support and commitment to safe and appropriate antibiotic use in your facility



Accountability

Identify physician, nursing and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities in your facility



Drug expertise

Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship for your facility



Action

Implement **at least one** policy or practice to improve antibiotic use



Tracking

Monitor **at least one process** measure of antibiotic use and **at least one outcome** from antibiotic use in your facility



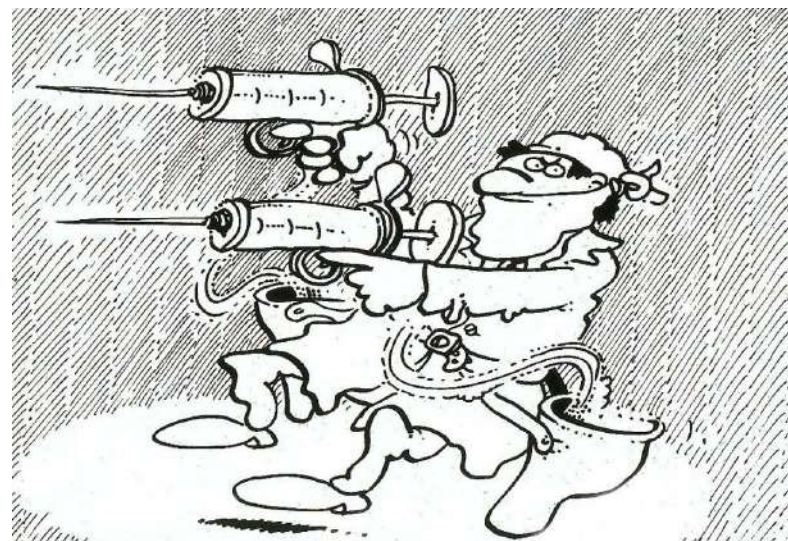
Reporting

Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff and other relevant staff



Education

Provide resources to clinicians, nursing staff, residents and families about antibiotic resistance and opportunities for improving antibiotic use



High end antibiotic form

AH-QF-ICF-02

Apollo
HOSPITALS

HIGH-END ANTIBIOTIC REQUEST FORM

Date: _____ Patient Label

LIST OF HIGH END ANTIBIOTICS

DRUG	ROUTE	START	STOP
Ceftazidime Avibactam			
Colistin			
Claptomycin			
Doripenem			
Ertapenem			
Fosfomycin			
Imipenem			
Linezolid			
Meropenem			
Polymyxin B			
Teicoplanin			
Tigecycline			
Vancamycin			

DIAGNOSIS: (To be filled by doctor)

EMPIRIC THERAPY:

INDICATIONS	YES	NO
Fever/Hypotension		
Urinary tract infection		
Respiratory tract infection		
Intra-abdominal infection		
Skin and Soft Tissue Infections (SSTI)		
Surgical site infection		
Others/Remarks:		

CULTURES	YES	NO	DATE	RESULTS
Blood				
Urine				
Respiratory secretions				
Wound swab/tissue/pus				
Others (Specify)				

Name of the Consultant : _____ Signature : _____ Date : _____ Time : _____

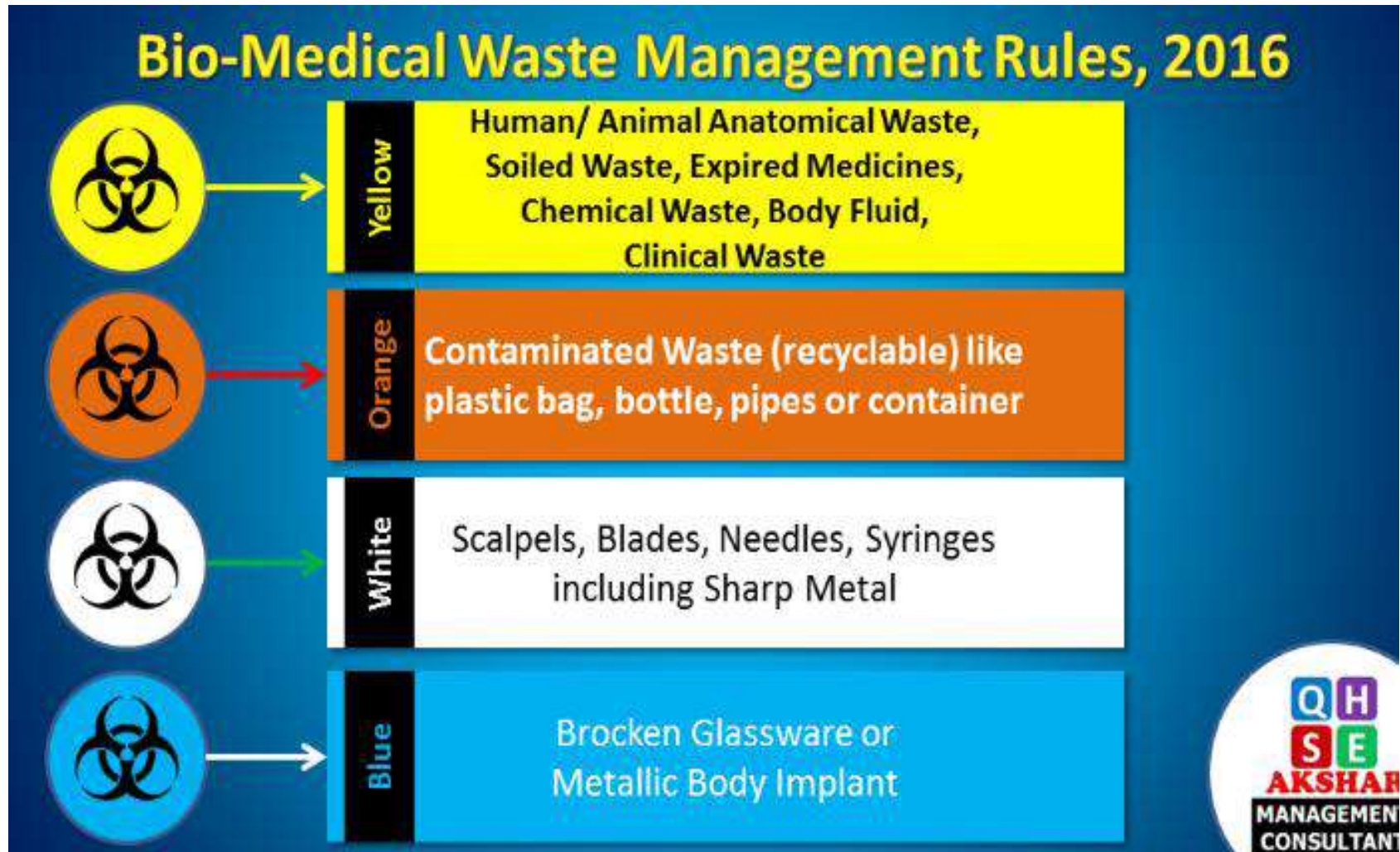
Name of the ID Consultant : _____ Signature : _____ Date : _____ Time : _____

- High end antibiotic form
- Send cultures before antibiotics
- Culture follow up
- De-escalation
- Justification
- Surgical prophylaxis choice and continuation

Biomedical Waste Management



Bio-Medical Waste Management Rules, 2016



Application & Accountability

***“In theory, there is no difference
between theory and practice.
But, in practice there is.”***

*Jan L. A. van de Snepshceut,
Computer Scientist and Educator
(1953-1994)*