MINISTRY OF HEALTH
SINGAPORE

Risk Management

Assumptions of Risk and Vulnerability

- Risk is inherent to people and processes
- Not all risk is equal
  - High incidence – low risk (urinary tract infection)
  - Low incidence – high risk (influenza pandemic)
- Can’t manage everything – must choose
- Balance data and experience to determine risk and priorities

Risk Management

Risk management is the identification, assessment, and prioritization of risks (defined in ISO 31000 as *the effect of uncertainty on objectives*, whether positive or negative) followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events or to maximize the realization of opportunities.

Risks can come from uncertainty in financial markets, project failures, legal liabilities, credit risk, accidents, natural causes and disasters as well as deliberate attacks from an adversary.

1. Alberts, Christopher; Audrey Dorofee, Lisa Marino (March 2008). *Mission Diagnostic Protocol, Version 1.0: A Risk-Based Approach for Assessing the Potential for Success*. Software Engineering Institute. Retrieved 2008-05-26.
2. Wikipedia, the free encyclopedia/

Strategies?

The strategies/tools to manage risk include transferring the risk to another party, avoiding the risk, reducing the negative effect of the risk, and accepting some or all of the consequences of a particular risk

Risk Assessment

- **Risk Assessment** is an integral part of risk management.

- The **process** of:
  - Identifying and analysing safety and hazards associated with work;
  - Assessing the risks involved; and
  - Prioritising measures to control the hazards and reduce the risks.

Steps of Risk Assessment - Process

How to assess the risks in your workplace

Follow the five steps in this leaflet:

Step 1
Identify the hazards

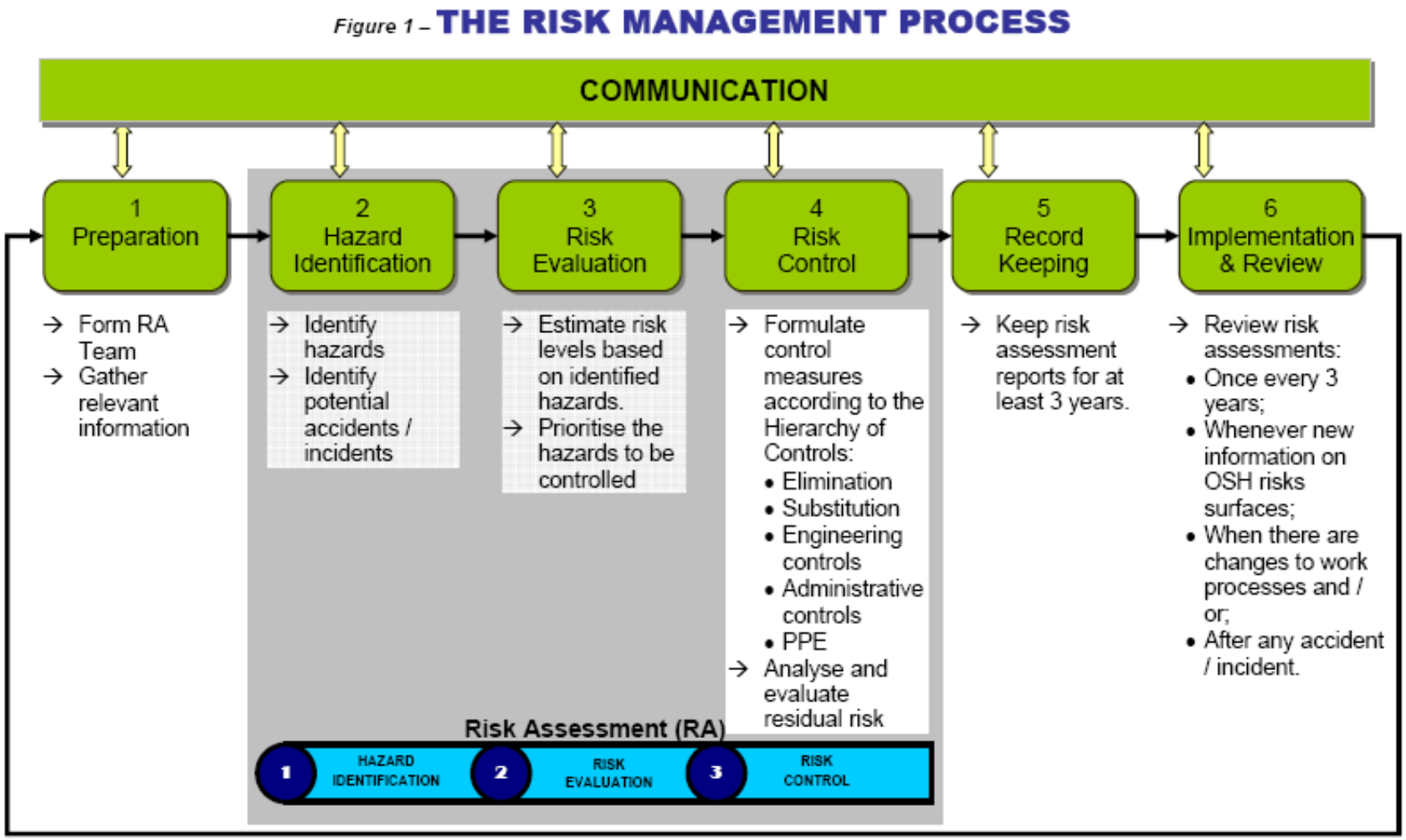
Step 2
Decide who might be harmed and how

Step 3
Evaluate the risks and decide on precautions

Step 4
Record your findings and implement them

Step 5
Review your assessment and update if necessary

Example of Risk Assessment - Process



Establish the context
Establishing the context involves:

1) Identification of risk in a selected domain of interest

2) Planning the remainder of the process.

3) Mapping out the following:
the social scope of risk management
the identity and objectives of stakeholders
the basis upon which risks will be evaluated, constraints

4) Defining a framework for the activity and an agenda for identification.

5) Developing an analysis of risks involved in the process.

6) Mitigation of risks using available technological, human and organizational resources.

Steps in the risk management process

1 Establish the context

2 Identification

3 Assessment

4 Potential Risk Treatments

- 4.1 Risk avoidance
- 4.2 Risk reduction
- 4.3 Risk retention
- 4.4 Risk transfer

5 Create a risk management plan

6 Implementation

7 Review and evaluation of the plan

Risk Assessment – Infection Control

- Identifying Risks for Acquisition and Transmission of Infectious Agents – Select Targets or Groups for Assessment
  - External
    - Community-related
    - Disaster-related
    - Regulatory and Accreditation Requirements
  - Internal
    - Resident-related
    - Employee-related
    - Procedure-related
    - Equipment/device-related
    - Environment-related
    - Treatment-related

RISK ASSSESSMENT – HAZARD IDENTIFICATION

What are some of your risks:

Risk Category	Risk Factors
Risks Associated with Elderly Care:	Antibiotic-resistant bacteria: MRSA, VRE, C. difficile Other related: unique to your facility
Risk Associated with Employees	-Understanding disease transmission and prevention -Degree of compliance with infection prevention techniques and policies--hand hygiene -Use of PPE and Isolation -Sharps Injuries -Inadequate screening for transmissible diseases -Practice accountability issues
Risk Associated with Equipment and Devices	-Cleaning, disinfection, transport, and storage for IV pumps, suction equipment, other equipment -Reuse of single-use devices
Risks Associated to Service	- Large population of elderly –DMs/ Hep B etc

RISK ASSESSMENT TOOLS

Example: SEVERITY ASSESSMENT CODE (SAC)

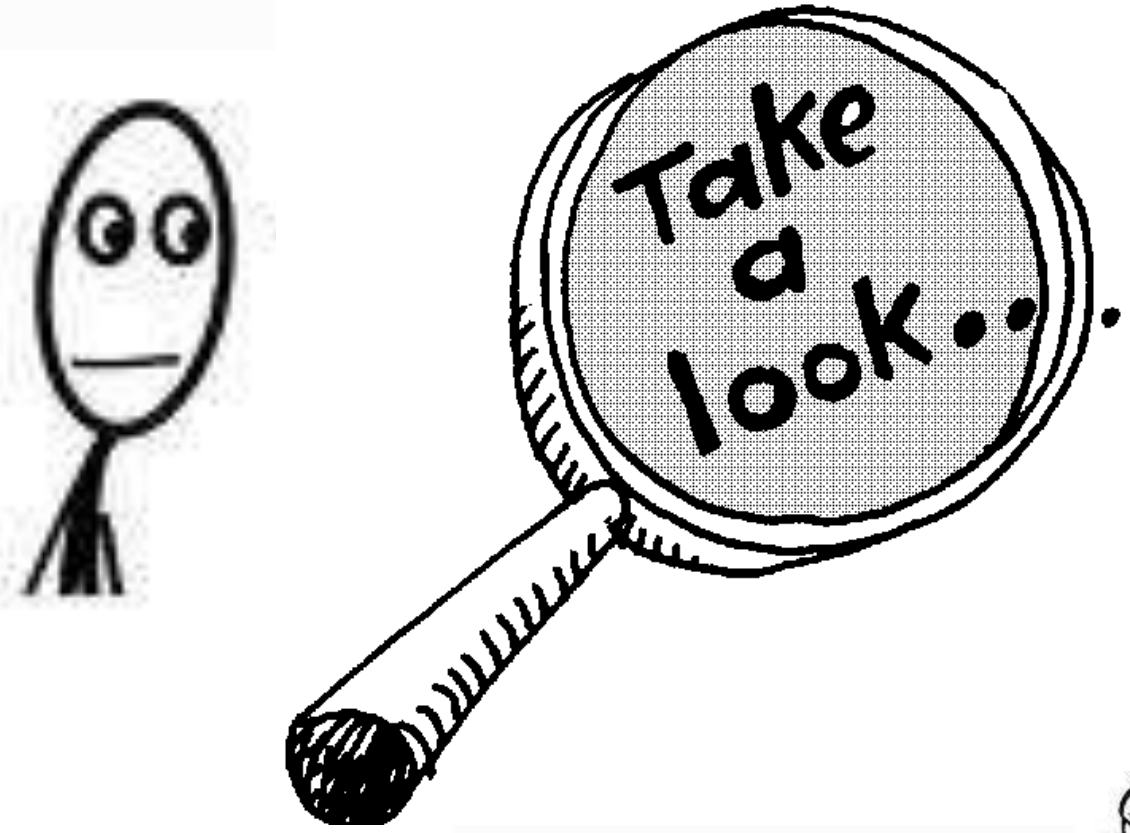
SAC is just a tool –

-Allows more consistent prioritisation of the actions that are required following any incident

--provides the criteria for determining the minimum action required

-No substitute for good professional /clinical judgment

Let’s Look at Some Risk Assessment Tools



SEVERITY ASSESSMENT CODE (SAC)

Prioritising Events via the SAC

Consequence / Likelihood	Extreme	Major	Moderate	Minor	Insignificant
Frequent	1	1	2	3	3
Probable	1	1	2	3	3
Occasional	1	2	2	3	4
Uncommon	1	2	3	4	4
Remote	2	3	3	4	4

INFECTION CONTROL RISK ASSSESSMENT

Facility_____

Risk Event	Probability of Occurrence				Potential Severity/Risk Level of Failure				Organizational Preparedness			Risk Priority
	High	Med	Low	None	Life Threatening	Permanent Harm	Temp Harm	None	Poor	Fair	Good	
Score:	3	2	1	0	3	2	1	0	3	2	1	
LOCATION AND COMMUNITY ENVIRONMENT												
Outbreak (Scabies/ URTI/ etc)												
Electricity/ Water Disruption												
Vectors (Mosquitoes/ Bugs/ Rodents etc)												

External Disaster Preparedness: Influenza Epidemic

Event	Probability of Occurrence				Risk of Event					Prepared-ness			Score
	H 3	M 2	L 1	N 0	L T 5	H & S 4	H D 3	M D 2	L D 1	P 3	F 2	G 1	
Staff Not Trained			X			X						X	**6**
Sterile Supply Not Avail	X				X							X	**9**
Isolation Areas Limited	X						X				X		**9**

H = High
M = Medium
L = Low
N = None

L T = Life Threatening
H & S = Health & Safety
H D = High Disruption
M D = Moderate Disruption
L D = Low Disruption

P = Poor
F = Fair
G = Good

Risk Assessment using Surveillance Data

Data	2008 Rates				NHSN	Relation To Benchmark			Priority		
	Q1	Q2	Q3	Q4		H	L	E	H (3)	M (2)	L (1)
VAPS											
BSI – Primary											
BSI – Second											
MRSA											
VRE											
Total Joint											
CABG											

External Disaster Preparedness: Influenza Epidemic

Event	Probability of Occurrence				Risk of Event					Prepared-ness			Score
	H 3	M 2	L 1	N 0	L T 5	H & S 4	H D 3	M D 2	L D 1	P 3	F 2	G 1	
Staff Not Trained			X			X						X	6
Sterile Supply Not Avail	X				X							X	9
Isolation Areas Limited	X						X				X		9

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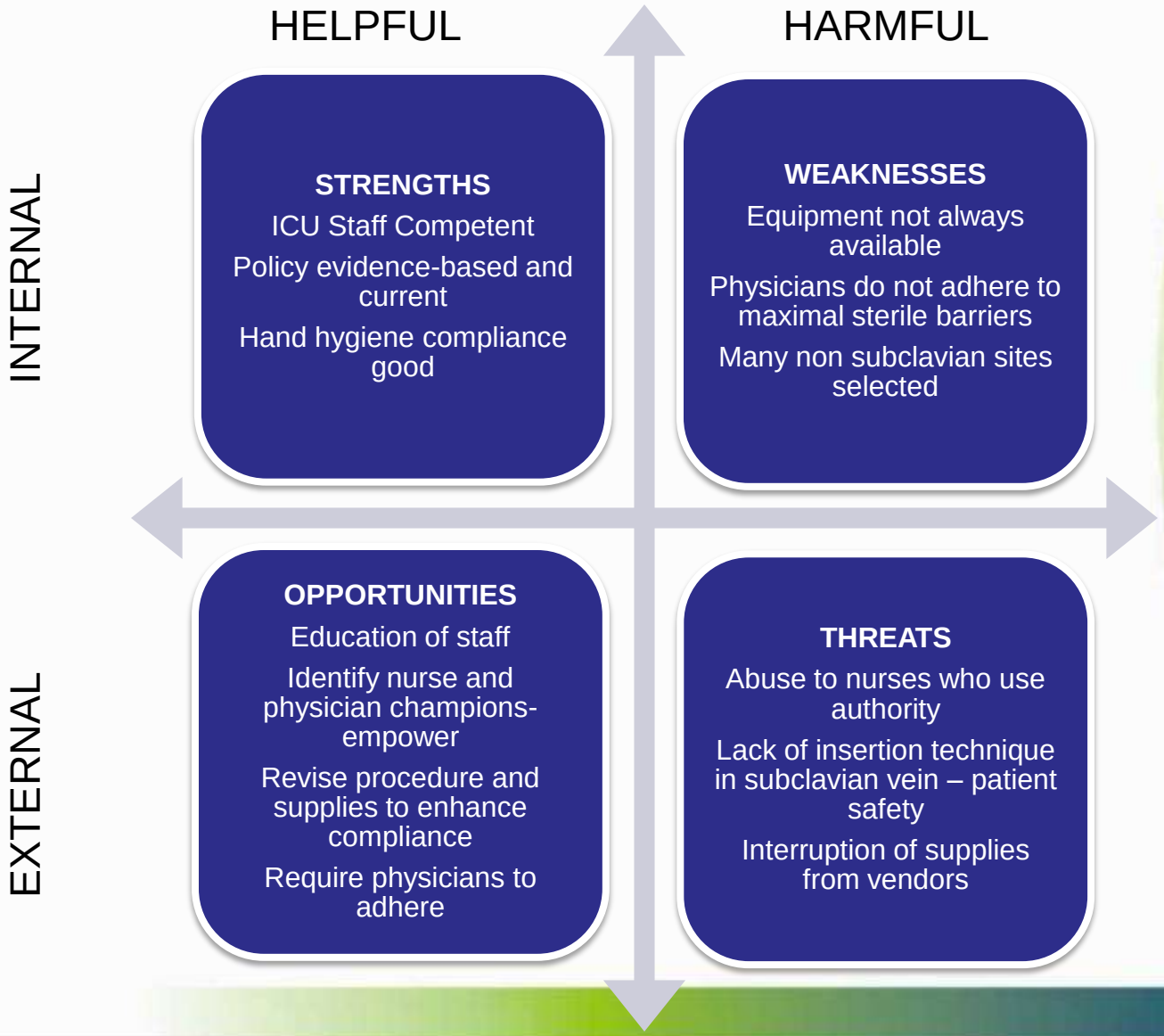
SWOT ANALYSIS – Catheter Related Bloodstream Infections



Exercise

Your Facility

Infection Control - related

- MDROs
- Access sites
- Occupational Exposure
- Environmental:
  -housekeeping
  -waste disposal
- Others

Compliance With -------

- Protocol:
  -PPE
  -management of patient with infections
- Safety:
  -patient
  -staff

Others

- Equipment:
  -supplies
  -sterilisation
  -disinfection
- Outbreak
- Training and continuing education

Infection Prevention Gap Analysis for Risk Assessment

Area/Issue/ Topic /Standard	Current Status	Desired Status	Gap (Describe)	Action Plan and Evaluation
The Infection Program is based on current accepted practice guidelines	WHO Hand Hygiene Guideline approved by ICC. Not fully implemented in organization	Full implementation throughout the organization by December 09	Only 40 % of units and services are following the CDC Hand hygiene guideline.	•Develop proactive implementation plan •Make leadership priority •Get all necessary supplies •Monitor and provide feedback to staff every 2 weeks •Evaluate existing hand hygiene compliance with WHO guideline against participation in the hospital in 4 months.
There is systematic and proactive surveillance activity to determine usual endemic rates of infections	Current surveillance is periodic retroactive chart review of a few infections.	Proactive surveillance for selected infections an populations on an ongoing basis	•Lack of IC staff and computer support to perform ongoing surveillance. •Absence of well designed surveillance plan •Difficult to access laboratory data	•Involve ICC in designing surveillance plan, methods for analysis. •Request computer and software to enter and analyze data •Teach IC staff about surveillance methodologies •Work with Laboratory Director to design access system for microbiology and other reports. •Determine if program exists in 6 month.
Catheter-related bloodstream infections (CRBSI) are very high.	Catheter-related bloodstream infections in medical ICU at 75% percentile of the NHSN benchmark	Reduce CRBSI to 10th NHSN benchmark or lower. Strive for zero BSI in MICU for a period of at least 6 months	Processes to prevent CRBSI are not followed consistently among staff	•Implement the BSI Bundle from IHI. •Form team with MICU, IC, MDs, Others •Evaluate the bundle processes and the outcomes and report to leadership and ICC monthly
Needle sticks in Employees	The incidence of needle sticks among environmental services staff is 5% for all personnel. Analysis shows that greatest risk is during changing of needle containers.	Reduce needle sticks overall to equal to or less than 2% during next 6 months and 1% thereafter among all environmental services staff	Observations show that needle containers are overflowing There is confusion among nursing and housekeeping staff about responsibility and timing for emptying or changing containers Nursing supervisors not aware of issue	•Clarify the policy and repeat education to staff about criteria for filling /changing needle containers •Discuss situation with nurse managers-emphasize responsibility •Display ongoing data to show number of weeks without needle sticks •Celebrate successes

Once the risk assessment is completed:

- Determine priorities for organization for coming year
- If assessment is in response to a change in risks that need to be considered for program, review and update priorities
- Involve ICC and other staff in determining the priorities
- Get leadership “sign off”
- Market results and monitor regularly

Examples of Priorities

1. Assure organization-wide hand hygiene

2. Reduce risk of infection related to procedures, medical equipment and devices

3. Reduce potential for transmission of organisms to patients, staff, others

4. Assure screening, referral and treatment of staff, students/trainees, volunteers for immunity to infectious diseases

Some Tips for Writing a Useful IC Program Description

- Table of contents
- Work with staff skilled in writing measurable objectives
- Timeline for periodic review of plan
- Notification of any new service or potential IC risk
- Review by key departments and staff
- Approval by ICC or multidisciplinary body

Annual Infection Control Plan

Your Infection Control Plan for 2011

Priority	Org Goals	Goal(s)	Measurable Objective	Method(s)	Evaluation	Responsibility
CAUTIs	Provide safe, excellent quality of care for all patients	Reduce CAUTIs in xx NH	Achieve 30% Reduction CAUTI from 4.6 to 2.0/1000 device days	Use evidence based bundle for CAUTIs PI Team	Monitor monthly – report quarterly to Staff and ICC	Xx NH RT Med Staff ICP Other
Sharps Injuries	Provide Safe Work Environ. for Employees	Reduce Sharps injuries	Reduce from 10/yr to < 2 /yr sharps injuries	PI Team	Monitor monthly – report weekly to IC staff	Employee Health NMs/ NCs Inf Control
Influx of Patients With Comm Disease	Prepare Organiz. for Emergency Situations	Develop and test plan for influx of infectious patients	Triage and care for up to 30 pts per day for 3 days with resp. illness	Develop triage and surge plan	Test X3 by December 20, 2008 with successful results	xxNH Staff Physicians Administration Admitting Infection Control Other

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Thank You