

Infection Control and Prevention Strategy

Prof. TAWFIK AHMED KHOJA

MBBS, DPHC, FRCGP, FFPH, FRCP (UK)

Prof of Public Health- Imperial College-London

Family and Community Medicine Consultant

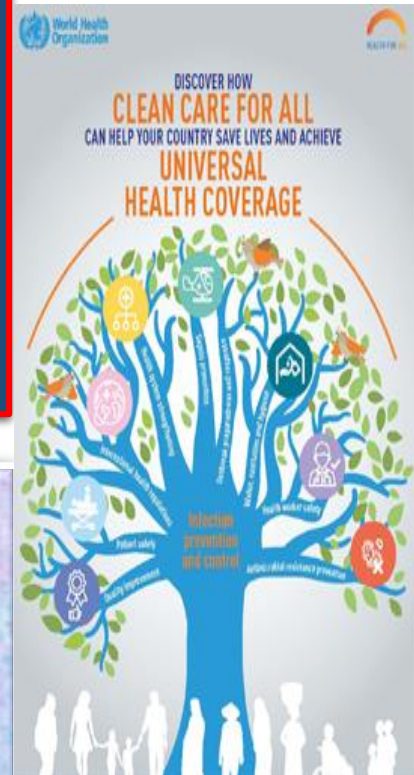
Secretary General of Hospital Federation

Infection Control Conference

Dubai – UAE

24 / Oct / 2019 - Informa

Prof. Tawfik A. Khoja



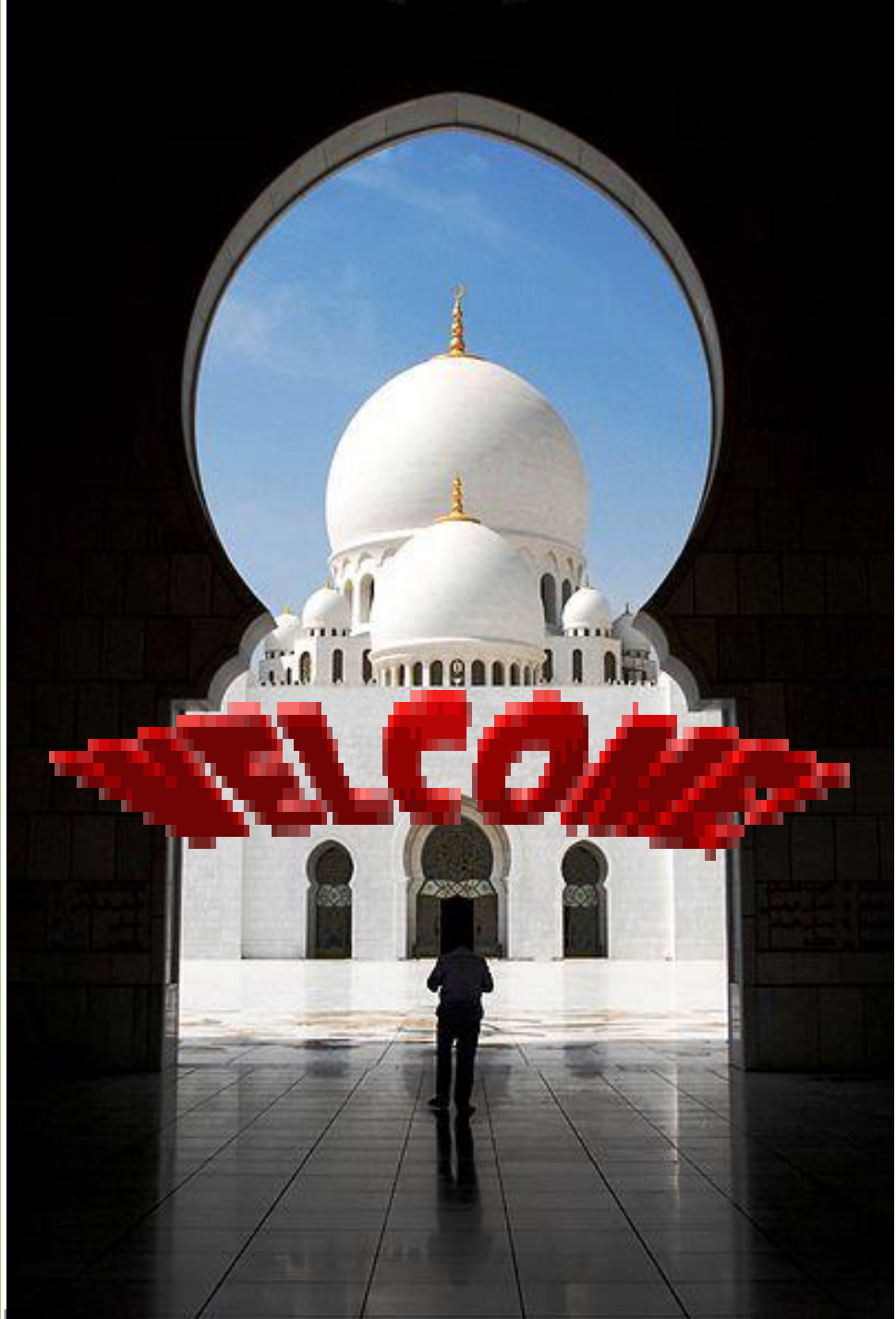


وَجْهَهُ عَلَىٰ مُكِبًّا يَمْشِي ۚ أَفَمَن
سَوِيًّا عَلَىٰ يَمْشِي أَمَّنْ أَهْدَىٰ
مُسْتَقِيمٍ ۚ صِرَاطٍ

سورة الملك (آية 22)

“ Is then one who Walks
headlong, with his face
Groveling, better guided,
Or one who walks Evenly
on a Straight Way ? ”

Holy Quran



Infection Prevention & Control

Infection prevention and control measures aim to ensure the protection of those who might be vulnerable to acquiring an infection both in the general community and while receiving care due to health problems, in a range of settings.

Health care Associated Infections (HAIs) are considered the most frequent adverse events that threaten patient safety around the world. The WHO Eastern Mediterranean Region has one of the highest frequencies of HAIs in the world. The burden of transmissible infections among health care workers due to unsafe health care practices is also considerably high in the Region. Although a substantial proportion of infections and deaths attributable to HAIs can be prevented and low cost interventions for infection prevention and control are available, progress in this field remains slow.

The focus on the extent to which HCAs and sepsis affects patients every year on a global scale, according to WHO estimates hundreds of millions of patients are affected annually by HCAs.

In Europe, every year almost 9 million patients acquire an infection while receiving care in hospitals and long-term care facilities.

On average, HCAs affect 7% and 15% of patients in high-income and low- and middle-income countries, respectively.

Hospital-born babies in low- and middle income countries are at a higher risk of being affected by neonatal sepsis, with infection rates three to 20 times higher than in high-income countries.

Overall, sepsis affects more than 30 million people worldwide every year, potentially leading to 6 million deaths.

Concerned at the high prevalence of health care-associated infections in several countries in the Region, ranging from 12% to 18%, and the high burden of transmissible infections among health care workers due to unsafe health care practices;

Further concerned that infection prevention and control in health care is not a well recognized discipline within health systems and that a cohesive framework is lacking in most countries;

Recalling that the economic and opportunity costs of health care-associated infections are enormous, and that preventing a case of health care-associated infection can substantially reduce a patient's risk of death.

1000 مليون استرليني سنوياً – تكاليف العدوى داخل المستشفيات والتي كان من الممكن تجنبها. (UK)

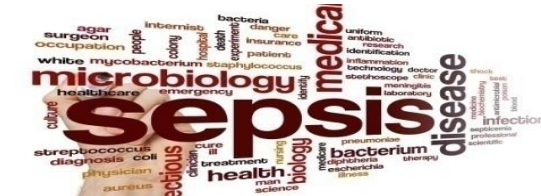
Costs of Adverse events in different healthcare settings



Medication Errors (£770m)

Costs of Admission (adverse Drug Reaction)

Costs of Harm



Sepsis (£4,000 per patient)

Increased Hospital Stay



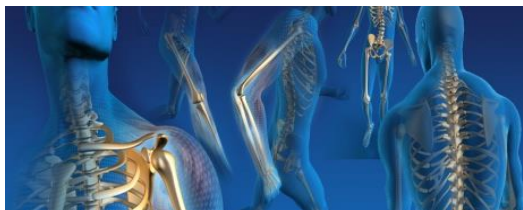
Drug Related Medical Errors

£5 million in litigation Costs



Doctors unintentionally leave medical equipment in pt

£9 million in litigation Removal Costs?/



Orthopedic Surgery Complications

£70,000 per patient : Infection costs 3200-3000 m / y



4. Need to Improve Outcomes: Serious Hospital Issue



1.5M Number of people harmed each year by **medication errors** in US¹

Estimated **economic burden** caused by medication errors in US every year² **\$77B**

~\$30B Excess healthcare costs incurred by **hospital-acquired infections (HAI)** in US a year³

1. Institute of Medicine, "Preventing Medication Errors," 2007.

2. Null, Gary et al, *Death by Medicine*, 2003.

3. US Department of Health & Human Services, Association for Professionals in Infection Control and Epidemiology (APIC), 2007.



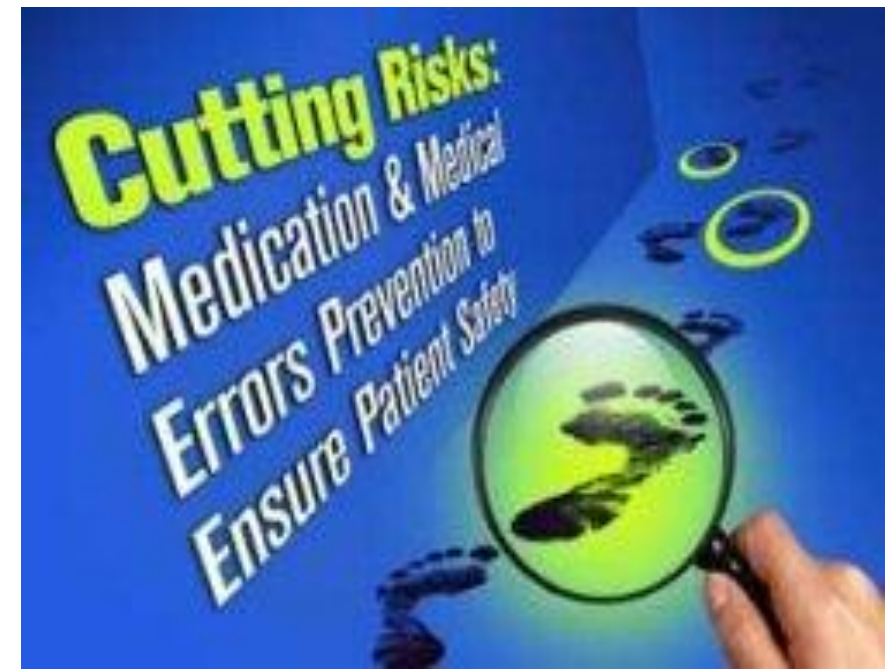
The Cost of HAIs

- The Center for Disease Control (CDC) estimates that there are *2 million cases of HAI per year*.
- Treatment costs for HAI in the US can reach *\$4.5 - 11 billion annually*.
- Of these 2 million HAI cases, the CDC estimates *20,000 patients die* from HAI complications.



A 2013 Australian study suggests that conditions acquired by patients during their hospital stay (e.g. healthcare-associated infection; pressure ulcers) accounted for 12-16% of hospital expenditure (Health Policy Analysis, Australia, 2013).

Preventing and Managing Unsafe Care: Economic Implication



REFERENCES



PATIENT SAFETY 2030

NIHR Patient Safety Translational Research Centre at Imperial
College London and Imperial College Healthcare NHS Trust

THE ECONOMICS OF PATIENT SAFETY

Strengthening a value-based approach to
reducing patient harm at national level

Luke Slawomirski, Ane Auraaen
and Niek Klazinga



MARCH 2017



Costs of unsafe care and cost effectiveness of patient safety programmes

Written by Gesundheit Österreich Forschungs- und Planungs GmbH and SOGETI

Gesundheit Österreich
Forschungs- und Planungs GmbH



Health and
Food Safety

Preventing Medication Errors: A \$21 Billion Opportunity



BEND THE
CURVE

Made possible through support from:

WELLPOINT
FOUNDATION

Learn more about ways to Bend the Curve in health care costs at: www.nehi.net/bendthecurve

Multi-resistant pathogens cause increases in healthcare costs due to the demand for more expensive drugs and prolonged hospital stays.

Multi-resistant drugs are responsible for increased morbidity and mortality of patients admitted to hospitals.

These hospital-acquired infections affect the most fragile patients in intensive care units; oncology and neonatology, which often result in high mortality.

“It is estimated that the burden is much higher in low and middle-income countries and it affects specific populations, for example, it is estimated that there are 3 million newborns and 1.2 million children suffering from sepsis globally every year.

“Among pregnant women, this is also a major issue, for instance, sepsis is estimated to cause 1 in 10 maternal deaths on average. Most of this occurs in low- and middle-income countries, so these are the most affected populations.”

HMC / GCC Resolution No. (3) 58th Conference held in Muscat – Oman (February 2005):

The resolution entails the following:

In the field of patient safety:

- 1- Positioning and supporting the concept of **patient safety** on the **top priorities of the decision makers in the organizational structure** in the Ministry of Health, through the following actions:
 - a) Establishing a **Gulf Task force** to set the executive plan and the guidelines as well as the mechanisms for giving effect to control and follow up of different aspects of patient safety with emphasis on improving the means of:



- **Reducing rates of medical errors.**
- **Reducing rates of malpractice.**
- **Reducing rates of nosocomial infections.**

- c) Establishing the **“Unified National and Gulf Program for registration and reporting of patient safety”** and setting mechanisms of implementation.
- d) Supporting **research** activities to improve patient safety practices.

Infection prevention and control in health care: time for collaborative action



REGIONAL COMMITTEE FOR THE EM/RC57/R.6 EASTERN
MEDITERRANEAN October 2010 Fifty-seventh Session



WHO is calling health facilities and governments worldwide to establish and implement infection prevention and control (IPC) programs to reduce especially healthcare-associated infections (HAIs) and sepsis. This is because there is strong evidence that specific measures, such as effective hand hygiene can reduce the transmission of pathogens, spread of antimicrobial resistance (AMR) and the occurrence of HAIs which all pose a major health problem worldwide.

HMC / GCC Resolution #3 (healthcare quality and patient safety)
(72th conference, Muscat, 10-11/2/1433H – 4-5/1/2012)

- 1- Approval and endorsement of the revised “**Gulf strategic Plan for Healthcare Quality and Patient Safety, 2011 -2016**” to be implemented in the Council States.
- 2- Endorsement of the “**Gulf Executive Plan for Infection Control – The new 5 years 2011 / 2016**” to be implemented in the Council States.
- 3- Urging the member states to establish **centers of excellence in patient safety**, like the Gulf Center for infection control, and the reference Gulf Center for EBM. This is for the objective of **building capacities** and qualification of Gulf leaders through emphasis on **training**, **CME** and **scientific research** related to the needs and requirements of patient safety.

WHO Member States adopted a resolution on improving the prevention, diagnosis and treatment of sepsis at the Seventieth World Health Assembly in May 2017.

“First of all, it is really important to remember that all [WHO Member States](#) endorsed this resolution on sepsis which is about improving the prevention, diagnosis and clinical management of sepsis. Therefore, there are specific actions that the WHO Member States or countries should establish, including education and training.

“At the national level, it is important to develop policies and guidelines on sepsis prevention, diagnosis and clinical management according to the 2017 WHA sepsis resolution.

“They should raise more awareness about this problem with different audiences, such as health care professionals, patients, patient associations and the community for the early recognition of the signs and symptoms of potential situations which can evolve to sepsis.

There is also a need for raising awareness of the importance of this problem using the data mentioned earlier on the extent to which sepsis affect patients, so people can understand that this can potentially be a big problem.

An effective way to raise awareness is to launch local or national campaigns on sepsis.

Health systems should educate and support general practitioners (GPs) who are frontline professionals who may recognize sepsis in a timely manner when a patient has an infection which has evolved into a severe condition.

“Emergency staff and these type of healthcare professionals are also crucial but so are patients and communities who need to understand the severity of this condition and recognize the early signs and symptoms.

Guidance and toolkits enable processes which detect sepsis timely and immediately establish the right treatment this goes with education and training, which should be different depending on the target audience, such as highly specialized training for emergency professionals to handle sepsis in an appropriate way.

Recognizing that the current global evidence clearly demonstrates that a considerable proportion of the burden of health-care associated infections can be prevented with low-cost but high yielding interventions.

Emphasizing that collaborative actions are required to prevent health-care associated infection in order to protect every health gain and investment made in the health sector and to significantly reduce health care costs;

URGES Member States to:



- 1) Strengthen/establish comprehensive national infection prevention and control programs as an integral part of health care delivery systems with appropriate resources;**
- 2) Ensure that all infection prevention and control measures implemented in health care facilities are consistent with the available evidence and best practices;**
- 3) Build up human resource capacity on infection prevention and control and include infection prevention and control in the curricula of all health care workers;**

4) Ensure that all health care providers take necessary personal protection measures, including immunization, as appropriate;

5) Define and establish comprehensive surveillance systems for health care-associated infections and antimicrobial resistance, and strengthen laboratory services;

6) Link accreditation of health care facilities to effective infection prevention and control measures.

SAVE LIVES: Clean Your Hands... 5 May 2019

Clean care for all – it's in your hands

WHO calls on everyone to be inspired by the global movement to achieve universal health coverage (UHC), i.e. achieving better health and well-being for all people at all ages, including financial risk protection, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

Infection Prevention and Control, including hand hygiene, is critical to achieve UHC as it is a practical and evidence-based approach with demonstrated impact on quality of care and patient safety across all levels of the health system.



2019 WHO Global Survey on Infection Prevention and Control (IPC) and Hand Hygiene

This is a WHO global survey will be open for four months from 16 January to 16 November 2019, on the current level of progress of infection prevention and control (IPC) programs and hand hygiene activities in health care facilities in the context of the annual [WHO hand hygiene global campaign \(5 May 2019\)](#).

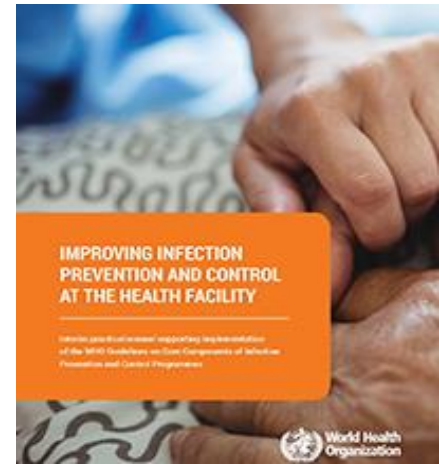
What are the objectives of this survey?

- To encourage and support local assessments of IPC and hand hygiene activities using standardized and validated tools, in the context of the regular work of the IPC teams/committees and the development of local improvement plans.
- To gather a situational analysis on the level of progress of current IPC and hand hygiene activities around the world and inform future efforts and resource use improvement.



Core components for IPC - Implementation tools and resources

- 1) Guidelines on core components of infection prevention and control programs at the national and acute health care facility level.
- 2) WHO guidelines on hand hygiene in health care.
- 3) A Guide to the Implementation of the WHO Multimodal Hand Hygiene Improvement Strategy.
- 4) Global guidelines on the prevention of surgical site infection.



These guidelines will support Member States and health care institutions in enforcing or establishing and implementing action for strategic directions of infection control and prevention according to their national situation and resources.

It will support Member States and health care facilities in identifying, developing, prioritizing and adopting interventions that will help in achieving UHC.

Efforts have been made to make the strategic approaches relevant to each country in the Region.

World Alliance for Patient Safety
Alianza Mundial para la Seguridad del Paciente

Safety in Action High 5s

Standard Operating Protocols

- **Managing Concentrated Injectable Medicines**
- **Assuring Medication Accuracy at Transitions in Care**
- **Communication during Patient Care Handovers**
- **Performance of Correct Procedure at Correct Body Site**
- **Improved Hand Hygiene to Prevent Health Care-Associated Infections**

High 5s

WORLD ALLIANCE FOR PATIENT SAFETY

Joint Commission International

THE COMMONWEALTH FUND

World Health Organization

World Alliance for Patient Safety
Alianza Mundial para la Seguridad del Paciente

Improved Hand Hygiene to Prevent Health Care-Associated Infections



The problem
The burden of health care-associated infections, in terms of human suffering and cost, is huge and can be significantly reduced through improved hand hygiene

The solution
The Standard Operating Protocol recommends to:

- **Determine the best systems to support hand hygiene in health care**
- **Educate caregivers**
- **Provide the necessary materials and equipment for hand hygiene**
- **Measure and provide feedback to caregivers about their compliance**
- **Provide reminders to facilitate hand hygiene**
- **Facilitate a culture of safety and hygiene**

High 5s

WORLD ALLIANCE FOR PATIENT SAFETY

Joint Commission International

THE COMMONWEALTH FUND

World Health Organization

A High 5s Steering Committee was established in 2006 to determine the overall architecture of the initiative.

Every effort has been made to direct the focus of Member States to results on the ground:

- 1) to concentrate on the comparative advantages of the contributions of specialized agencies, particularly in health and infection control system strengthening;**
- 2) and to support the leadership of governments and the international community to achieve UHC.**



Knowing is not enough; we must apply !

HEALTH CARE FACILITIES POLICY AND PROCEDURE

INFECTION PREVENTION AND CONTROL PLAN

PURPOSE:

- A) The goal of health care facility is to establish a comprehensive Infection Prevention and Control Program to ensure that the organization has a functioning coordinated process in place to minimize the risks of endemic and epidemic Healthcare Associated Infections (HAI) in patients and health care workers and to optimize use of resources through a strong preventive program.
- B) The Infection Control Committee should incorporate the following on an ongoing basis:
1. Surveillance, prevention and control of infections throughout the organization.
 2. Develop alternative techniques to address the real and potential exposures.
 3. Select and implement the best techniques to minimize adverse outcomes.
 4. Evaluate and monitor the results and revise techniques as needed.

POLICY:

The Infection Prevention and Control Program at health care facility, which allows for a systematic, coordinated and continuous approach, is guided and implemented by:

- A. National regulations pertaining to infection control which are implemented and followed.**
- B. In-service education for ALL employees upon hire and again annually with particular emphasis on proper use of personal protective equipment for personnel at risk of accidental exposure to blood and/or body fluids. In addition, emphasis is placed on educating staff regarding TB and other infectious diseases and its mode of transmission.**
- C. Surveillance will include Healthcare Associated Infections (HAIs) among patients and personnel when possible. All infections will be monitored when a treatment or medication is ordered by the Licensed Independent Practitioner. Targeted studies will be conducted on infections that are high risk, high volume. In addition, selected HAIs and laboratory reports will be monitored.**

D. Monitoring and evaluation of key performance aspects of infection control surveillance, prevention and management which are:

- 1. Device related infections.**
- 2. Multi-drug Resistant Organisms.**
- 3. TB (Tuberculin skin test conversions in patients and staff).**
- 4. Occupational Exposure to Bloodborne Pathogens.**
- 5. Other communicable diseases.**
- 6. Employee health trends.**
- 7. Blood/body fluid exposures in healthcare providers.**

E. Continuous collection and/or screening of data to identify potential infectious outbreaks.

- F.** Participating in an organizational proactive education program in an effort to reduce and control spread of infection.
- G.** Facilitating a multidisciplinary approach to the prevention and control of infections.
- H.** Utilizing sound epidemiologic principles and nosocomial infection research from recognized authoritative agencies.
- I.** Collaborating with all organizational policies and procedures impacting the prevention and control of infection.
- J.** Interacting with and reporting to governmental agencies.

RESPONSIBILITIES:

- a) Residents of treatment units are responsible for maintaining a safe and clean living area.**
- b) Nursing staff are responsible for being familiar with Infection prevention and control policies and procedures.**
- c) Infection Control Nurse is responsible for following policies and procedures related to infection prevention and control and updating as needed.**
- d) Hospital administration is responsible for supporting the Infection Control Nurse and the Infection Control Committee, by supporting efforts to prevent and control the spread of infection.**
- e) Director of Quality Improvement is responsible for review and assistance in performance improvement activities related to infection prevention and control.**

PROCEDURE:

- A.** When evaluation identifies an area of concern, a specific problem, or an opportunity for improvement, a corrective action plan will be formulated. The corrective action plan is collaborative in nature.
- B.** When problems or opportunities for improvement are identified, actions taken/ recommended will be documented in the health care facility Infection Control Committee minutes. Minutes are forwarded to Director of Quality Improvement for review and assistance in resolution as necessary.
- C.** If immediate action is necessary, the Infection Control Committee, or its designee, has the authority to institute any surveillance, prevention and control measures if there is reason to believe that any patient or personnel is at risk.

- D.** The Infection Control Committee/Infection Control Nurse has the responsibility for infection prevention and control activities throughout the facility. This committee is governed by a physician having knowledge of infection control practices and performance improvement methodologies. The physician on charge guides the committee on decisions for improvement of care through the prevention and control of infections.
- E.** The responsibility and direct accountability for the surveillance, data gathering, aggregation and analysis is assigned to the Infection Control Nurse.
- F.** Hospital personnel and medical staff members share accountability in reporting of isolation cases, suspected infection and reports of positive cultures to the Infection Control Nurse. There is collaboration among departments as well as the Infection Control Nurse to identify any HAI trends or pattern that may occur, or opportunities to improve outcomes in the reduction and control of infections.

- G. Hospital personnel and residents of treatment units are advised that food and beverages other than water, need to be consumed and stored in designated areas of the treatment units. No food or beverages other than water can be stored or consumed in patient rooms unless indicated by treatment restrictions.**
- H. Staff Development and the Infection Control Nurse will offer personnel health in-service education related to infection prevention and control practices to ensure a safe environment for patients and personnel.**
- I. The Infection Control Nurse also supplies the Director of Quality Improvement with information that may be useful in identifying potential quality problems throughout the hospital.**

- J.** The link between performance improvement and infection prevention and control activities is information gathering and clinical analysis. Both are designed to identify patterns of patient care events that lead to suboptimal outcomes, thus identifying areas where patient care may need improvement.
- K.** Interaction with patient care function: The purpose of interacting with the patient care function is to enhance communication and to identify potential infection in patients and staff.
- L.** Interaction with the Safety Management Team: The Safety Officer shall be apprised of possible infectious issues that are potentially hazardous to patients and staff.
- M.** Monitoring the results of the Infection Prevention and Control Program allows the hospital to determine if the techniques already in effect are working well, or if changed conditions (internal or external) require new or revised techniques.

The process of monitoring provides control and coordination of the Infection Prevention and Control Program and also causes the infection control process to renew itself through new information.

Monitoring is achieved through:

- a. Committee interaction, especially the Infection Prevention and Coordinating Group.**
- b. Daily job functions of the Infection Control Nurse.**
- c. Comparisons of current statistical information and historical data and bench marking.**
- d. Policy and procedure reviews; future surveys and inspections, internal and external.**

Essential to the process of implementation is the building of institutional capacity to manage infection control programs by encouraging partnerships between governments, universities, communities and nongovernmental organizations, and between governments and the corporate sector, which occupies a central role .

The new practice must be continually reinforced and sustained or the practice change will be intermittent and soon fade, allowing more traditional methods of care to return.



الأمل

HOPE



BE THE BRIDGE

PROBLEMS BECOME OPPORTUNITIES
WHEN THE RIGHT PEOPLE
JOIN TOGETHER.



Quality.. continue



*We Need Strategic Plan For ICP & Patient Safety
In Health*



ICP & P S

To BE

Internalize & Institutionalize in Health System



Preventable

Avoidable Infection

Medical Errors

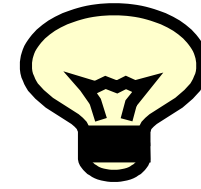


Quality , Safe Care & Infection control

The goal
to improve patient safety
and to reduce harm



What Next ?



A critical partnership—quality , safety & infection control and prevention for health team and patients:

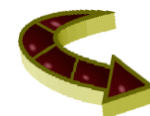
1. Health Team and leaders should collaborate with each other and with management team members to develop and evaluate interventions designed to support a healthy work environment.
2. Health Team and leaders need to seek for areas of more collaboration with members of the interdisciplinary team to develop positive working relationships that contribute to safe , effective care and better implementation of Infection control and prevention.



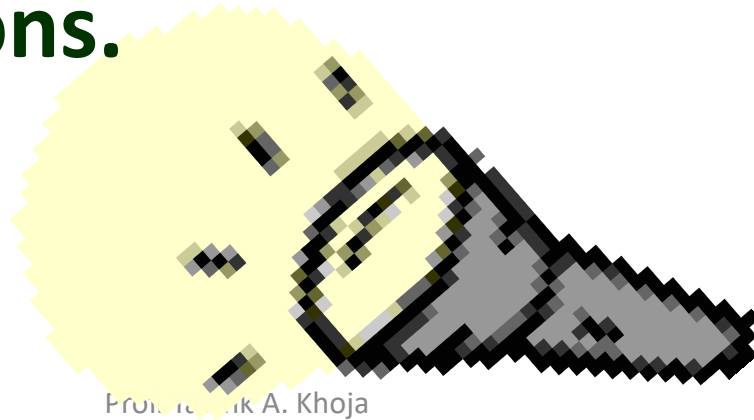
- 3. Working together with all health care members provides a pathway to safer patient care, reduction in errors, reduction of infections , and a more supportive work environment.**
- 4. Health Team need to interact with managers to identify potential solutions to unsafe conditions.**
- 5. Each member of Health Team has a responsibility to contribute to the continuous improvement of his or her work environment and, thus, improve patient safety and involvement in ICP.**



- 6. Develop a situational analysis culture in all healthcare institutions and facilities as well as primary health care sector through MOH; governmental; academic and civil society promotion and support.**
- 7. To be assure that, the core indicators of Accreditation process for all health care facilities (including P.H.Cs), should include and implement quality, patient safety indicators & ICP.**
- 8. Continuous periodic evaluation and updating of the strategic plan of health care facility for quality, patient safety & ICP according to the international and regional changes and development.**



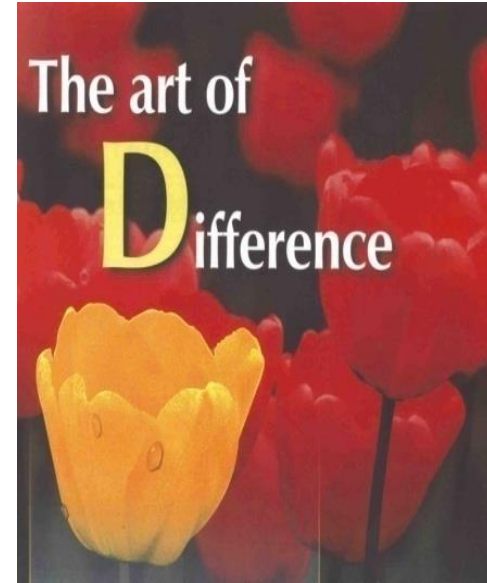
In summary to improve the quality of care , patient safety and ICP provided to our patients, we need to decrease clinical practice that varies from good scientific evidence, provide clinicians as well as all members of health care team with ready access to the best possible clinical knowledge to aid in their medical decision-making, and arm them with the tools needed to assess and improve a hospital's quality , safety systems , ICP and related interventions.



RECOMMENDATIONS

1. To increase political commitment and enhance infection control and prevention assessment, monitoring and evaluation.
2. To reduce the prevalence of sepsis and HIAs.
3. To build capacity for emergency preparedness.
4. To ensure a safe, healthy and sustainable action for ICP.

☐ **Improve Professional Competencies**
Huge investment in HRH



Perspectives



PS, Quality & ICP

The Race For Quality Has No Finish Line





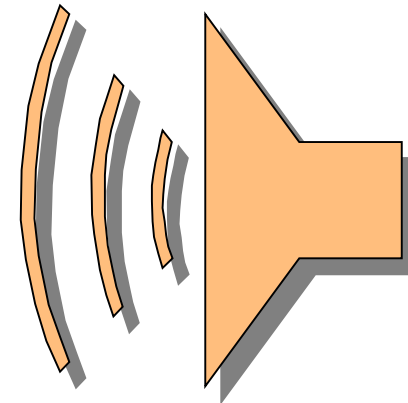
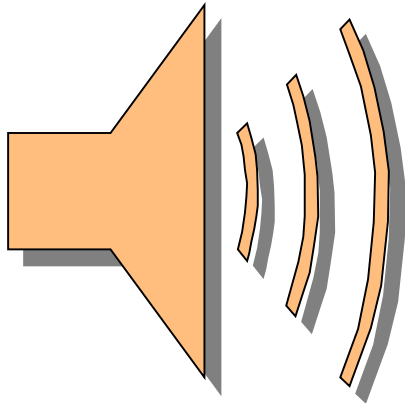
ULTIMATELY OUR MISSION IS :

Keeping PEOPLE Well



Getting PEOPLE Better

Helping PEOPLE Cope



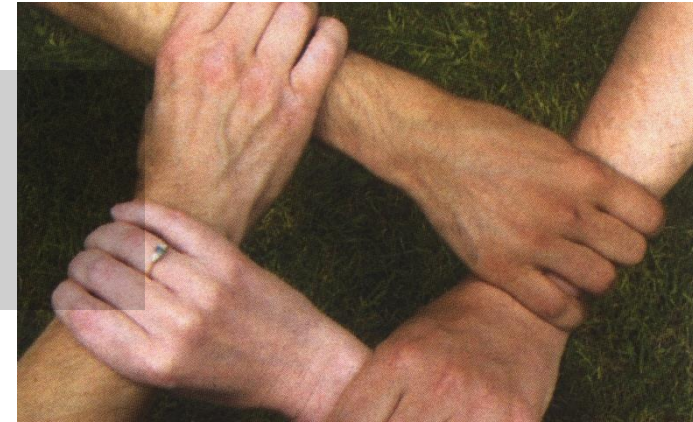


Today's health challenges for ICP require
a new way of working based on :

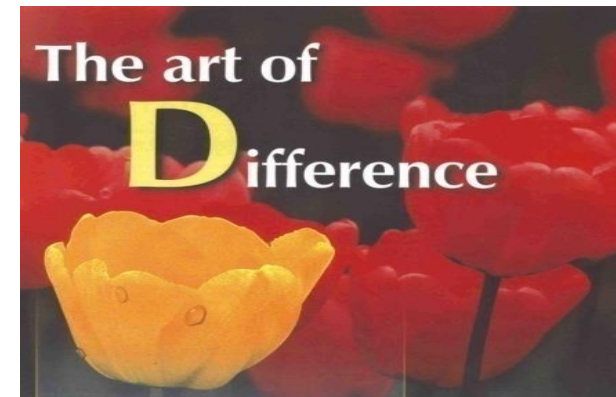
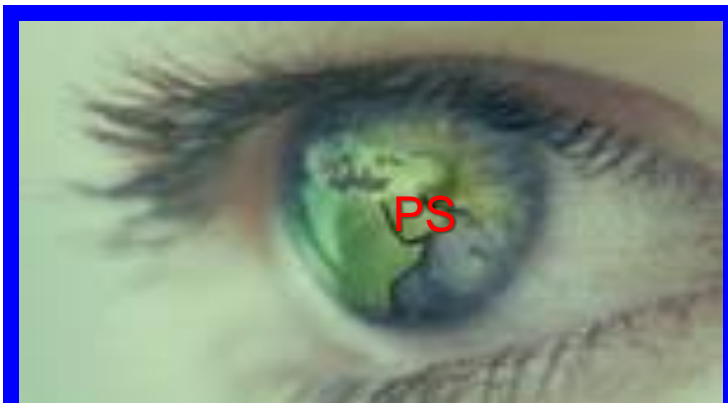
- ☐ shared leadership;
- ☐ aligning root causes and
- ☐ strategy and measureable results.

**It is believed that innovative collaborations
produce innovative solutions
for healthier communities.**

SUCCESS IS



**COLLABORATION AMONG
COUNTRIES AND SHARING
LEADERSHIP & INNOVATION
IN PS and ICP**



Always think
The outlook
is brighter







داعياً الله سبحانه لي ولكم
بدوام الصحة والعافية والرضوان

**Thank you for your
kind attention**



**Thank
You!!**

Wishing you all the best