



Hello everyone and thank you for joining us. Welcome to the International Quality Improvement Collaborative for Congenital Heart Disease.

**International Quality Improvement Collaborative
for Congenital Heart Disease**

Improving care in low- and middle-income countries

- **Vision**
 - To facilitate a collaborative of healthcare teams from around the world creating a culture of safety and quality for care for congenital heart disease
- **Mission**
 - To reduce mortality and major complications for congenital heart disease in low- and middle-income countries

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The IQIC vision is to facilitate a collaborative of healthcare teams from around the world creating a culture of safety and quality for care for congenital heart disease.

Our mission is to reduce mortality and major complications for congenital heart disease in low- and middle-income countries.

Surgical Learning Modules

Key Driver	Topic	Date
Administrative	IQIC Welcome and Surgical Database Orientation	Wednesday, February 05, 2020
Team Based Practice	Pediatric Cardiac Postoperative Care: Important Considerations for the Cardiac Intensive Care Unit Team	Wednesday, February 26, 2020
Infection Prevention	Preventing Health Care Associated Infections: Creating a Culture of Infection Prevention and Hand Hygiene	Wednesday, March 25, 2020
Surgical/ Safe Perioperative Practices	Implementation of a surgical safety checklist for congenital cardiac surgery	Wednesday, April 08, 2020
Team Based Practice	Crisis Resources Management in the Cardiac Intensive Care Unit	Wednesday, May 13, 2020
Team Based Practice	Endotracheal Tube Suctioning and Preventing Ventilator Associated Pneumonia for the Pediatric Cardiology Patient	June
Administrative	Understanding your Annual Benchmarking Report	July
Surgical/ Safe Perioperative Practices	Perfusion: Patient and Circuit Considerations	Wednesday, August 05, 2020
Infection Prevention	Infection Prevention: Central Line-Associated Bloodstream Infection (CLABSI) and Urinary Tract Infection (UTI)	September
Advanced Nursing	The Cardiac Children's Hospital Early Warning Scoring (CHEWS) System	Wednesday, October 28, 2020
TBD	New Content- to be confirmed	November
TBD	To be confirmed	December

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The IQIC Surgical Quality Improvement Educational webinar curriculum for 2020 is presented here. Lauren Shaw and Angela Sorenson are the IQIC infection prevention team members from Boston Children's Hospital. Today, Lauren will be presenting the "Preventing Health Care Associated Infections: Creating a Culture of Infection Prevention and Hand Hygiene" webinar. We will also be joined today by Dr. Peng from West China Hospital in Chengdu, China who worked in Wuhan, China treating patients with COVID-19 recently. Thank you for joining today!

Catheterization Learning Modules

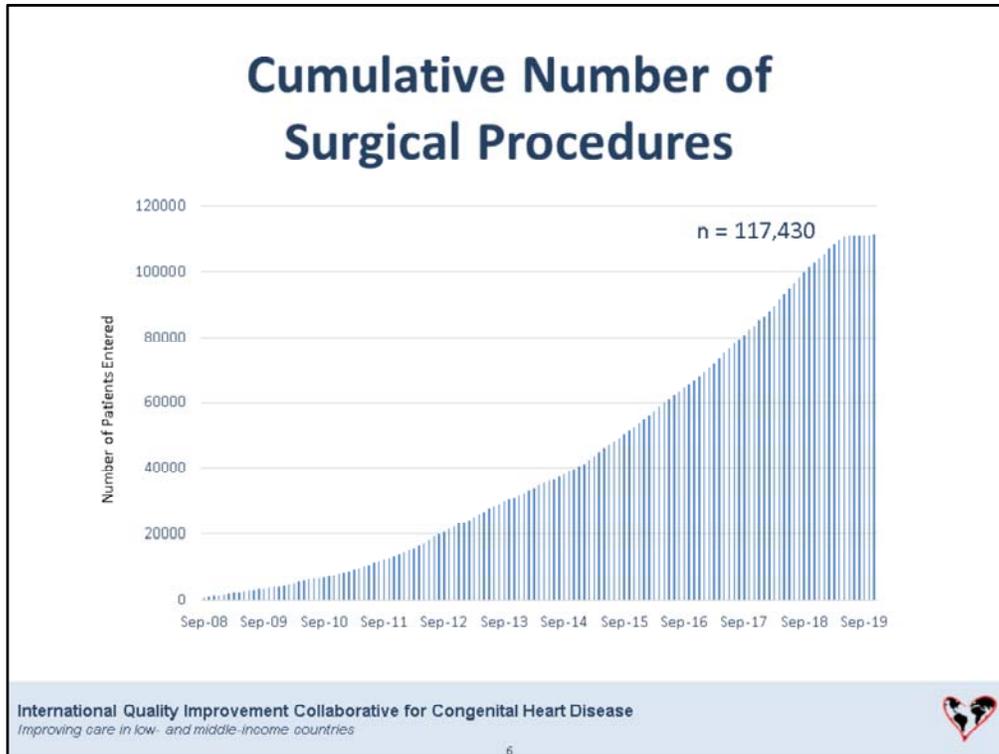
Key Driver	Month	Topic
Administrative	January	IQIC 2019 Annual Catheterization Review with Database Orientation
Procedure Optimization	February	Radiation Safety
Safe Periprocedure Practice	March	Pre-catheterization Assessment and Management
Administrative	April	IQIC Cath Updates with Data Reports
Procedure Optimization	May	CATHCHAT 1
Procedure Optimization	June	CATHCHAT 2
Administrative	July	IQIC Cath Updates with Annual Report Review
Safe Periprocedure Practice Team-Based Practice	August	Catheterization Safety Checklist
Procedure Optimization	September	CATHCHAT 3
Administrative	October	IQIC Cath Quarterly Updates
Safe Periprocedure Practice	November	Post Catheterization Management
Procedure Optimization	December	CATHCHAT 4

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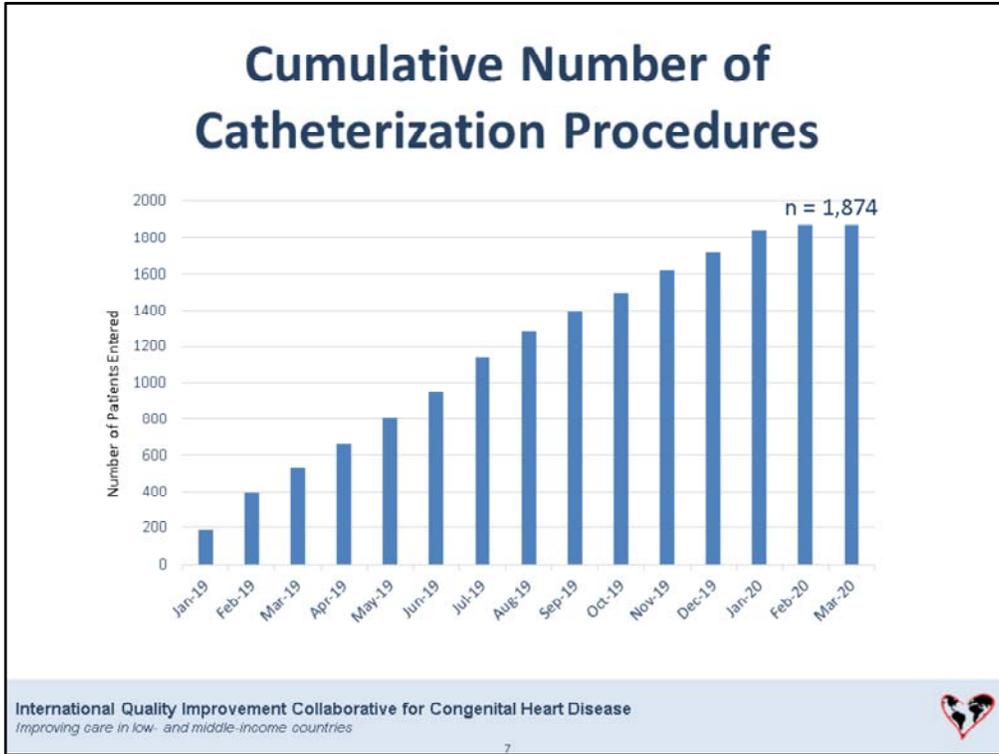


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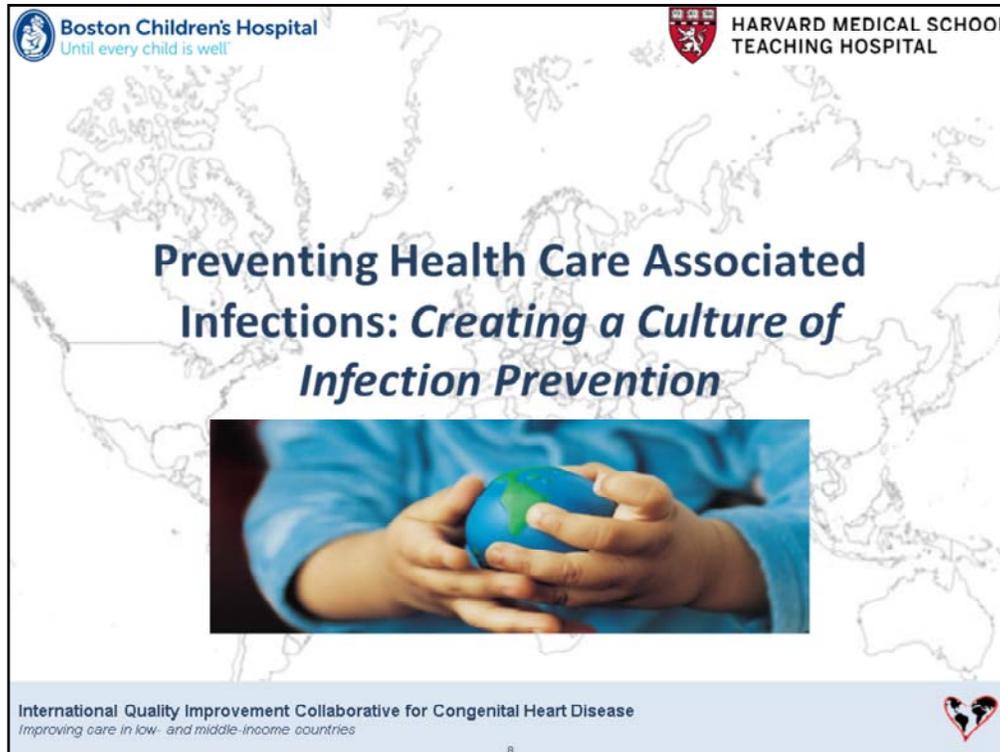
The IQIC Catheterization Quality Improvement (QI) Educational webinar curriculum for 2020 is presented here. These webinars occur on Tuesdays at 7am eastern time unless otherwise noted. We encourage all IQIC participants to attend. The next webinar will be held on March 31st at 7am eastern time focusing on “Pre-catheterization Assessment and Management”.



We continue to increase the number of procedures entered into the database. As of mid-January 2020, there are 117,430 cases entered into the surgical database.



As of mid-March 2020, there are 1,874 cases in the IQIC catheterization database. Thank you all for continuing to do such an amazing job!



Hello, my name is Lauren Shaw. I work in the Cardiac Intensive Care Unit at Boston Children's Hospital as a staff nurse and infection control coordinator..

This module is Preventing Health Care Associated Infections....how to introduce and implement practices that prevent infection.

The objectives of this module are to

- Focus on the importance of hand hygiene to prevent the spread of infection. Hand hygiene is the basis of all infection prevention programs
- Discuss new practices for patient hygiene
- Discuss how to introduce a life long oral hygiene program for pediatric cardiac patients

After this training // participants will have an understanding // of the scope of health care associated infections // and their prevention.

Outline For Lecture

- Define health care associated infections
- Review how infections occur
- Review the importance of hand hygiene
- Discuss strategies to create a hand hygiene culture
- Discuss new trends in patient hygiene
 - Bathing
 - Family hand hygiene
 - Oral health
- Discuss COVID-19 experience, communication, and preparations



The first portion of this lecture will :
Define Health Care Associated Infections
Review how infections occur
Review the importance of hand hygiene
Discuss strategies to create a hand hygiene culture and
Discuss new trends in patient hygiene
Discuss COVID-19 experience, communication, and preparations

What is a Health Care Associated Infection (HAI)?

Definition

- Condition resulting from adverse reaction to infectious agent or to toxins produced by agent
- Infections that patients get while they are receiving healthcare



A health care-associated infection (HAI) is defined by the United States Centers for Disease Control and Prevention as a condition resulting from an adverse reaction to an infectious agent or its toxin.

These infections are a major cause of death and disability worldwide and cost billions of dollars.

HAI Progress Report for 2019

- Serve as reference for about national and state HAI prevention progress
- Based on data reported to Center for Disease Control's (CDC's) National Healthcare Safety Network (NHSN)
- Progress measured with standardized infection ratio (SIR)
- HAI data used to calculate a SIR for nation and each reporting state
- HAI's are a major, often preventable, threat to safety
- Details progress toward ultimate goal of eliminating HAIs

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- The annual HAI Progress Reports can serve as a reference for anyone looking for information about national and state HAI prevention progress. Each report is based on data reported to CDC's National Healthcare Safety Network (NHSN).
- Progress is measured using the standardized infection ratio (SIR), a summary statistic that can be used to track HAI prevention progress over time. Researchers use the reported HAI data

to calculate a SIR for the nation and each reporting state.

- HAIs are a major, yet often preventable, threat to patient safety. HAI data detail progress toward the ultimate goal of eliminating HAIs.

Clean Care is Safer Care

Most health care-associated infections are preventable through good hand hygiene – cleaning hands at the right times and in the right way. The *WHO Guidelines on hand hygiene in health care* support hand hygiene promotion and improvement in health-care facilities worldwide

World Health Organization 2020

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Each year, hundreds of millions of patients around the world are affected by health care-associated infections (HAIs). Although HAI is the most frequent adverse event in health care, its true global burden remains unknown because of the difficulty in gathering reliable data

Quality Improvement

- Programs that target:
 - Education
 - Hand hygiene
 - Sterile device insertion
 - Management of invasive devices
- Outcome of these efforts:

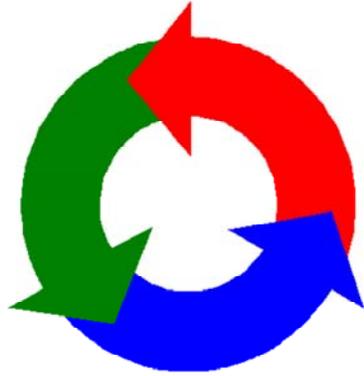
**Health care associated infection =
medical error**



In the last 10 years quality improvement programs targeting staff education, hand hygiene, sterile device insertion and improved management of invasive devices have demonstrated a reduction in health care associated infection rates. These programs have proven so successful that healthcare associated infections are now considered a medical ERROR.

Many government programs and private insurance companies in the United States and Europe are not reimbursing hospitals for the costs related to healthcare associated infections.

What is Needed for an Infection to Occur?



3 elements:

- An infectious agent
- A susceptible person
- Mode of transmission



There are 3 basic elements needed for an infection to occur:

- First there must be an infectious agent such as a bacterium, virus, fungus, parasite or prion. Sources of infectious agents include humans, animals, and the environment.
- Second, there must be a person who is susceptible to the infectious agent
- Finally, the mode of transmission is the way that the infectious agent gets to a susceptible person. The mode of transmission is the key element in breaking the cycle of infection. Most infection prevention practices are designed to target this element.

The Susceptible Patient



- Host factors
- Medical interventions
 - Central venous lines
 - Mechanical ventilation
 - Total parenteral nutrition

Grohskopf et al: Journal of Pediatrics, 2002

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Newborns have immature immune systems and cardiac patients have other conditions such as asplenia, or Di George syndrome which increase the risk of infection.

The 3 most common interventions that increase the risk of health care associated infections in pediatric patients are:

- The use of central venous lines
- Mechanical ventilation and
- Total parenteral nutrition

In addition, delayed sternal closure and exposure to blood transfusions add to the risk of developing an infection.

Modes of Transmission

- Contact
- Droplet
- Airborne
- Common vehicle
- Vector



There are 5 major modes of transmission of infectious agents:

Contact
Droplet
Airborne
Common vehicle
and
Vector

The modes of transmission// vary by the type of infectious agent // and some may be transmitted // by more than one route.

Modes of Transmission

Contact

- **Direct Contact:**
 - Person to person
- **Indirect Contact**
 - Hands of health care workers
 - Hospital equipment
 - Hospital environment



Contact is the most common mode of transmission and it is divided into 2 categories: direct contact and indirect contact.

- **Direct Contact** involves the transfer of infectious agents from an infected person directly to another person.

- **Indirect contact** involves the transfer of an infectious agent through a contaminated intermediate object or person. The contaminated hands of healthcare workers are important contributors to indirect contact transmission.

Modes of Transmission

X represents VRE culture positive sites



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Indirect contact transmission can also occur when patient care equipment or the environment are not cleaned properly between patients.

This picture shows the sites in a patient's room that were still contaminated with vancomycin resistant enterococci (or VRE) after caring for a patient with the pathogen. As you can see, high touch surfaces quickly become contaminated with the patient's body flora.

Infectious agents can be spread when doctors, nurses and other healthcare workers do not clean their hands when leaving a patient's room.

Modes of Transmission: Equipment and Clothing

- Clean stethoscopes between patients
- Other potential sources of transmission:
 - Phones/pagers
 - Keyboards
 - Lab coats
 - Neckties



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Medical equipment and personal devices and clothing can also spread infectious agents when they come into contact with a patient. In our intensive care unit we have mounted baskets of alcohol wipes on the walls between bed spaces so that staff can clean their stethoscopes between patients.

There have been many studies that show such as phones, pagers, and keyboards can be a source of transmission. In our intensive care unit, this equipment is wiped down with a disinfectant wipe at the beginning and end of every shift. Personal phones are not allowed in the intensive care unit.

Clothing can also transmit pathogens. Staff should wear a clean uniform every day. Lab coats should be laundered frequently, and never worn into a patient bed space if the caretaker is going to come in contact with the patient or environment. Sleeves should be rolled up.

Modes of Transmission

Droplet

- Respiratory droplets carrying infectious agents are propelled short distances by
 - Coughing
 - Sneezing
 - Endotracheal tube suctioning



• Droplet transmission occurs when respiratory droplets carrying infectious agents are propelled short distances by coughing, sneezing, or endotracheal tube suctioning.

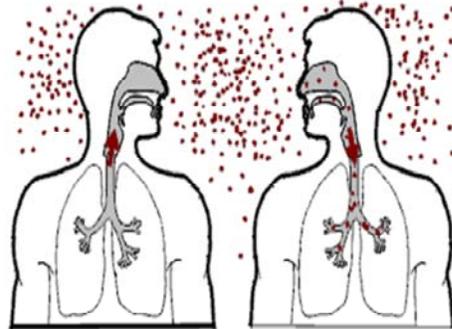
• These agents may cause infection when they enter the nose, eyes, or mouth of a susceptible person.

• Close contact with a sick person is needed. Examples of pathogens spread by droplet transmission are: influenza viruses, pertussis, and meningococemia

Modes of Transmission

Airborne

Particles containing infectious agents that are small enough to be carried on air currents or dust particles



- Airborne transmission occurs when tiny particles that contain infectious agents are small enough to remain suspended in the air for long periods of time. These particles may travel over long distances on air currents.
- Infection occurs when the particles are inhaled by a susceptible person.
- Close contact with a sick person is not needed. Examples of pathogens spread by airborne transmission are varicella, measles, smallpox, and tuberculosis

Modes of Transmission

Common Vehicle:

- Food
- Water
- Medications



Vector:

- Disease is carried by an animal or an insect



•Common vehicle transmission occurs when an infectious agent is spread from a contaminated common source such as food, water, or medications. For example, salmonella food poisoning. At our hospital, all medication vials and intravenous bags are one entry only. Our medications arrive from the pharmacy unit dosed. While this practice is expensive to implement, it does save money in the long run.

•Vector borne is when a disease is transmitted to humans by an animal, or an insect, such as rabies or malaria

Preventing Transmission of Infection

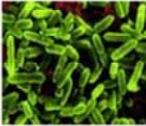
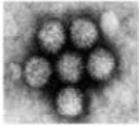
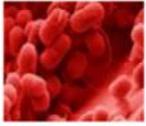
The #1
intervention is
careful hand
hygiene by health
care workers



The number one intervention for preventing the spread of infectious agents in healthcare settings is careful hand hygiene by doctors, nurses and other health care workers.

#1 Intervention: Hand Hygiene

80% of transmission of infectious agents in hospitals is by the hands of health care workers.

<u><i>Klebsiella</i> sp</u>	<u><i>E coli</i></u>	<u><i>Pseudomonas</i> sp</u>	<u>Rotavirus</u>	<u><i>Acinetobacter</i> sp, VRE</u>
2 min (mean)	6 min (mean)	30 min	16% 20 min	60 min
		180 in sputum	2% 60 min	
				



It is estimated that 80% of the transmission of infectious agents in hospitals is by the hands of doctors, nurses, and other health care workers.

Infectious agents can survive on hands for a few minutes to more than an hour.

These survival times clearly demonstrate the need for careful hand hygiene

#1 Intervention: Hand Hygiene

Multiple studies have demonstrated approximately **70%** of health care workers and **50%** of surgical teams do not routinely practice hand hygiene.



World Health Organization

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Approximately 70% of health care workers do not routinely practise hand hygiene, with health workers reporting misunderstandings about the relevance and importance of hand hygiene in everyday clinical practice.

Evidence suggests that as little as 50% of surgical teams comply with hand hygiene best practice throughout a surgical patient's hospital stay.

#1 Intervention: Hand Hygiene

Barriers to hand hygiene compliance

- Guidelines for hand hygiene are not clear
- Limited knowledge about infection prevention
- Products not available or near patient
- Products cause skin irritation/allergic reactions
- Too busy
- Forget



When doctors, nurses, and other health care workers are asked why they do not wash their hands they often say:

That guidelines for hand hygiene are not clear

They lack education on the importance of hand hygiene, or they do not know when to perform hand hygiene

Hand hygiene products, or sinks are located in areas far from patient care

They do not like the hand hygiene products due to odor, allergies, or skin irritation

They are too busy, or the patient is too sick for them to stop and perform hand hygiene

Or they forget

#1 Intervention: Hand Hygiene

Hand hygiene means:

Clean Your Hands

using antiseptic soap and
clean water

or

alcohol based hand
sanitizer



Therefore, the World Health Organization has made improving hand hygiene the focus of its program to reduce health care associated infections

- Hand hygiene means: Clean your hands using antiseptic soap and clean water or an alcohol-based hand sanitizer
- Hand hygiene compliance not only protects the patient it protects doctors , nurses and other health care workers.

#1 Intervention: Hand Hygiene



- Use alcohol hand sanitizer for fast, efficient hand cleansing
- Use soap and water when:
 - Hands are visibly soiled
 - Patient has *Clostridium difficile* or other infection caused by a spore forming bacteria (anthrax)
 - Before eating
 - After using the toilet



For more than fifteen years the World Health Organization has recommended the use of alcohol based hand sanitizers as the primary form of hand hygiene in health care settings.

Alcohol based hand sanitizers have been shown to:

- remove organisms more effectively
- require less time and
- cause less skin irritation than hand washing with soap and water.

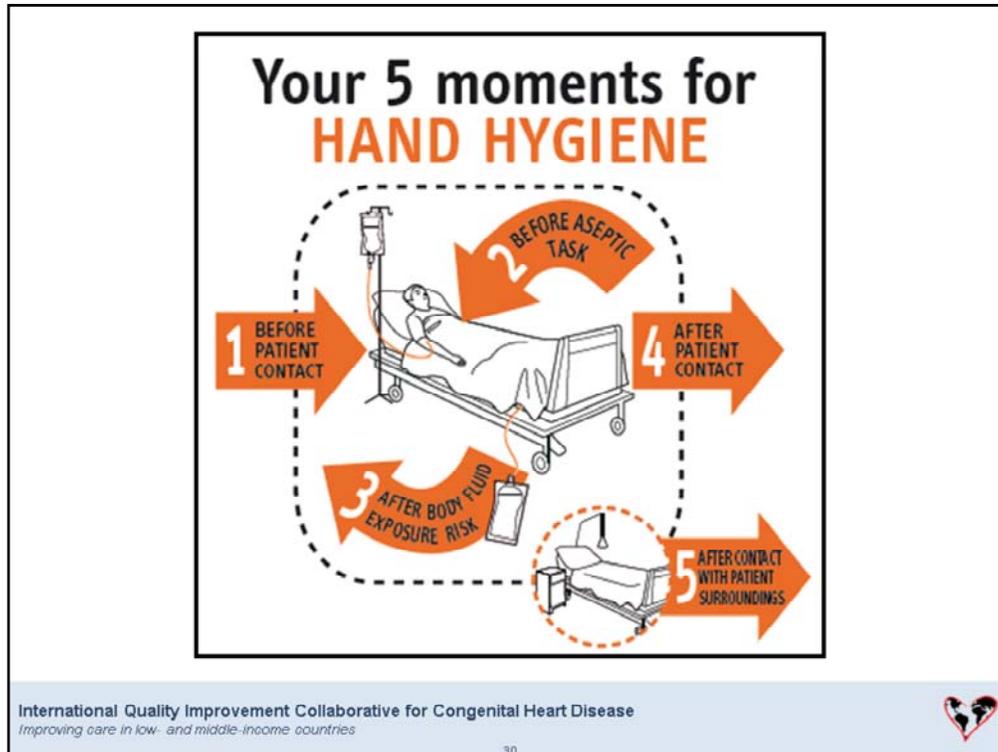
Soap and water should be used when :

- Hands are visibly soiled
- Patient has *Clostridium difficile* , or other infection caused by a spore forming bacteria such as anthrax
- Before eating and
- After using the toilet

Hand Washing Video



This video demonstrates proper hand hygiene technique with soap and water and with alcohol hand sanitizer.



This World Health Organization poster shows the 5 moments for hand hygiene

Number 1 is before patient contact

Number 2: before an aseptic task such as changing a dressing or touching an intravenous catheter

Number 3: after exposure to body fluids

Number 4: after patient contact

And number 5: after contact with the patient's surroundings

#1 Intervention: Hand Hygiene

- When moving from a contaminated body site to a clean body site during patient care
- Before and after:
 - Diaper changes
 - Dressing changes
 - Ostomy care
 - Endotracheal tube suctioning
 - Oral hygiene
- When moving back to the patient after touching equipment in the patient's room



Doctors, nurses, and other health care workers should also remember to perform hand hygiene:

when moving from a contaminated body site to a clean body site and before and after

- Diaper changes
- Dressing changes
- Ostomy care
- Endotracheal tube suctioning
- Oral hygiene

Doctors and nurses often forget that after stepping away from the patient and performing other tasks in the room such as charting they must clean their hands before touching the patient again.

#1 Intervention: Hand Hygiene

Other aspects of hand hygiene:

- Dry hands before patient contact
- Use hospital hand lotions
- Avoid multiple use products: bar soap, cloth hand towels
- Keep nails short: less than 0.2 cm long
- No artificial nails
- Bare below the elbows: short sleeves, no rings, bracelets, watches



Other important aspects of hand hygiene are to

- Dry your hands before patient contact. Moist hands transmit more microorganisms
- Use hospital hand lotions to prevent drying and cracking of skin. Dry skin promotes colonization by microorganisms.
- Soap should be from a dispenser, and the use of individual hand towels (either paper or cloth) is recommended.
- If bar soap is used, it should be kept in a holder that allows it to dry between uses.
- Finger nails should be kept short and
- Artificial nails should not be worn, by doctors, nurses, or other health care workers who take care of patients.
- Additionally, Bare below the elbows: short sleeves, no rings, bracelets, watches

#1 Intervention: Hand Hygiene

Use of gloves:

- Does not replace need for hand hygiene
- Change gloves between patients
- Wear gloves for contact with blood, other body fluids, mucous membranes, non intact skin, and wound dressings
- Do not reuse gloves



Gloves do not provide complete protection against hand contamination. Therefore, the use of gloves does not replace the need for hand hygiene

- Gloves can be contaminated when putting them on and hands can be contaminated when removing dirty gloves so hand hygiene is necessary before and after wearing gloves.
- Always change gloves between patients and between contact with patient supplies or environment
- Change gloves and perform hand hygiene after performing a dirty procedure (such soiled dressing change) before touching the patient again.
- Gloves should only be worn for one procedure and then changed
- If possible, do not reuse gloves.

The Role of Infection Prevention and Control

- Experts
- Partner with ICU :
 - Advise
 - Educate
 - Train unit based infection prevention nurse(s)
- Determination of device associated infections per CDC guidelines
- 1 Infection Preventionist/100 beds



Every hospital should have a department of Infection Prevention and Control, and this staff should be a member of any committee formed to decrease infections. They can offer expert advice based on the most up to date recommended practices to prevent infection, and what to do to prevent the further spread of infections that have already occurred. They can provide staff education, and if your intensive care unit decides to implement the position of a unit based infection control nurse, they will be the ones to educate this nurse. The partnership between the department and a unit based infection prevention nurse is very close as they work together every day. In our hospital, the department of Infection Prevention and Control has the final say on which infections are device associated, as determined by definitions from the United States Centers for Disease Control. The Association Professionals in Infection Control recommends that each hospital have 1 Infection Preventionist per 100 beds.

Why A Unit Based Infection Prevention Nurse?

- Developing a comprehensive infection prevention/patient safety program is time consuming
 - Education of staff
 - Identification of areas for improvement and developing and implementing strategies to address the problem
 - Constant attention to the issues: real time interventions
 - Real time data collection
- The unit based infection prevention nurse is an insider....someone who knows the staff, the patients, the procedures, and the culture of the unit



In addition, our hospital implemented the position of a unit based infection prevention nurse in each intensive care unit. These senior nurses are partnered with a member of the hospital infection Prevention and Control Department. The advantages to developing this position are that unit based IP nurses can give their entire attention to the unit, every day, where as the hospital IP staff has to care for the rest of the hospital and any outlying clinics. Educating staff , implementing bundles and performing practice audits are very time consuming and more work can be accomplished in a shorter time with a unit based IP nurse.

Creating a Hand Hygiene Culture: Stage 1

Form a multidisciplinary hand hygiene team:

1. Doctors and nurses
2. Infection control experts
3. Hospital leadership
4. Other hospital staff
5. Parents and patients

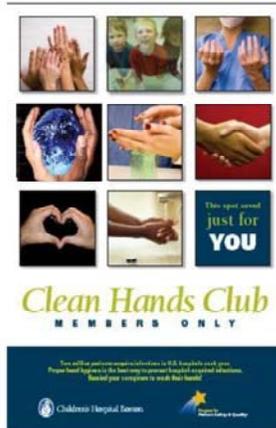


The final part of this presentation will focus on creating a hand hygiene culture:

- Initiatives to reduce infection and improve patient safety are important but changing practice is a difficult task! Maintaining enthusiasm and results is even more difficult.
- Forming a team will promote acceptance of practice change by all members of the health care team.
- Team members could include: doctors and nurses, infection control experts, hospital leadership, and other hospital staff.
- Always involve experts they will direct practice changes based on evidence-based interventions.
- Consider involving parents and patients

Creating a Hand Hygiene Culture

Stage 1



- Name the hand hygiene program
- Involve hospital staff
- Identify role models

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Have fun with the hand hygiene program. Hold a “name the program contest”. Offer an award for the winning slogan. Make posters to promote the program or have patients make their own posters for their rooms. This is our hospital’s “clean hands club” poster. Additionally, there are many posters on the internet that be copied and laminated to save money

- **Involve hospital staff** in different aspects of the program, designing posters, completing practice observations, and feedback sessions
- Identify role models from each discipline to set the example and promote the program.

Creating a Hand Hygiene Culture: Stage 1

- Evaluate barriers to hand hygiene compliance
- Address areas to be improved:
 - Supply of hand hygiene products
 - Hand hygiene products available at “point of care”
 - Preference of products
- Educate hand hygiene teachers
- Educate staff to observe hand hygiene practice



Evaluate barriers to hand hygiene compliance and address areas to be improved

- Is the hospital able to provide a reliable supply of hand hygiene products?
- Are hand hygiene products available where patient care takes place?
- The World Health Organization recommends that there be one sink for every 10 beds at a minimum with soap and disposable towels at every sink.
- Alcohol hand sanitizer at every bed space is the ideal situation.
- Observe patient care to determine where hand hygiene products should be placed.
- Does the staff like the hand hygiene products?
- Staff should be involved in the evaluation and choice of hand hygiene products
- Infection control experts should educate hand hygiene teachers and the staff who will observe hand hygiene practice

Creating a Hand Hygiene Culture

Stage 2

Education

- Educate staff on why hand hygiene is important and when it is necessary
- Provide training for new staff and annual education review for all staff
- Educate patients and their families
- Educate staff to speak up when hand hygiene is not performed



Education will be the biggest factor in your success.

- Educate staff on why hand hygiene is important and when it is necessary: the World Health Organization provides many educational materials on their web site
- Hand hygiene education should be provided for all new staff and repeated every year
- Educate patients and their families on the importance of hand hygiene Ask parents and patients to remind staff to wash their hands
- Educate staff to speak up in a professional manner when hand hygiene is not performed.

Video



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This video will demonstrate professional communication between healthcare workers when hand hygiene is not performed.

Creating a Hand Hygiene Culture: Stage 2

Observe practice and share results

- Collect baseline data
- Monitor hand hygiene practice
- Post practice results in visible areas
- Post reminders throughout the hospital



After staff are educated to observe hand hygiene practice

- collect baseline data on hand hygiene practice in their work area
- Then continue to monitor hand hygiene practice on a regular schedule
- Posting results in many areas will assure that staff, patients, and their families, will notice the information
- Use reminders throughout the hospital such as posters and newsletters to promote hand hygiene

Hand Hygiene Observation Tool

Hand Hygiene (HH) & Personal Protective Equipment (PPE) Audit

CHB ID #

2015
 2016

Jan Feb Mar Apr May June
 July Aug Sep Oct Nov Dec

Shift: Day Evening Night

Yes = Done Properly
 No = Not Done
 InAd = Done Inadequately

| | | Yes | No | InAd |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Performs HH with Purell or Soap & Water prior to patient contact (or between contacts): | RN | <input type="radio"/> |
| | CA | <input type="radio"/> |
| | MD(Surgical) | <input type="radio"/> |
| | MD(Medical) | <input type="radio"/> |
| | MD(Surg trainee) | <input type="radio"/> |
| | MD(Med trainee) | <input type="radio"/> |
| | NP/ CNS | <input type="radio"/> |
| | RT | <input type="radio"/> |
| | Child Life/nutrition | <input type="radio"/> |
| | Anesthesia | <input type="radio"/> |
| Anesthesia Att. | <input type="radio"/> | |
| Other _____ | <input type="radio"/> | |
| Performs HH with Purell or Soap & Water after removing gloves or when leaving the room/bedside after contact: | RN | <input type="radio"/> |
| | CA | <input type="radio"/> |
| | MD(Surgical) | <input type="radio"/> |
| | MD(Medical) | <input type="radio"/> |
| | MD(Surg trainee) | <input type="radio"/> |
| | MD(Med trainee) | <input type="radio"/> |
| | NP/ CNS | <input type="radio"/> |
| | RT | <input type="radio"/> |
| | Child Life/nutrition | <input type="radio"/> |
| | Anesthesia | <input type="radio"/> |
| Anesthesia Att. | <input type="radio"/> | |
| Other _____ | <input type="radio"/> | |

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We recently modified our hand hygiene audit tool to help identify which disciplines were the best and least compliant with hand hygiene. Monthly results are posted in very visible areas of the CICU, and sent to the department heads. In addition, monthly hand hygiene compliance for every area of the hospital is posted on the hospital intranet. If compliance is less than 90%, the department head for that area or specific discipline, is asked, by the Chief Executive Officer of the hospital, to develop a plan of action to address the non compliance

Hand Hygiene **Fun Fact**



Singing Happy Birthday or your ABC's while washing your hands can ensure that you have washed or scrubbed for 20 seconds.



This is an example of a hand hygiene work place reminder at our hospital.

Family Hand Hygiene

- Posters in all the parent waiting areas
- Multiple languages



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Parents and families need to be educated on the importance of hand hygiene when their child is hospitalized. They are touching their child and then venturing out to other areas of the hospital, bringing germs along with them.

We placed posters on the importance of hand hygiene in all the parent waiting areas, parent sleep spaces, bathrooms, and eating areas. These posters are also available in 9 languages.

Family Hand Hygiene

- Bedside nurses review correct hand hygiene with families within 48 hours of admission
- Parents are empowered to remind staff to clean their hands before touching their child

Family Education Sheet 

Family Hand Hygiene Standard: Why Hand-Washing is Important

Why do I need to wash my hands?
Keeping your hands clean (called hand hygiene) is one of the best ways to help prevent the spread of infection and illness, especially in a hospital setting.

How should I wash my hands?

<p>When Your Hands Look Dirty: Wash with antimicrobial soap and water.</p>  <ol style="list-style-type: none"> 1. Wet hands with water. 2. No need to use hot water, as it may cause skin irritation. 3. Pump a quarter-sized amount of antimicrobial liquid soap into the palm of your hand. 4. Rub hands together vigorously, making sure to get all surfaces of the hands and fingers. Do this for at least 15 seconds. 5. Rinse your hands with water. 6. Dry fully with a disposable towel. 7. Throw away towel in designated trash can. 	<p>When Your Hands Look Clean: Wash with Alcohol-Based Hand Rub.</p>  <ol style="list-style-type: none"> 1. Pump a quarter-sized amount of alcohol-based hand rub to palm of one hand. 2. Rub hands together. 3. Cover all surfaces of hands and fingers with sanitizer. 4. Rub hands together until completely dry. <p>Do not use alcohol-based hand rubs when your hands are visibly dirty. Alcohol-based products are more effective for standard hand washing or hand antisepsis than antimicrobial soaps.</p>
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When should I wash my hands?

You should wash your hands:

- before going into the unit/bed space
- before direct contact with your child
- after direct contact with your child or your child's bed space/equipment
- after having contact with body fluids or tissues or internal sites. For example, wash hands after a diaper change or mouth care.

You should use alcohol-based hand rubs:

- after contact with a toilet or dirty bed/side table
- before leaving any restricted room or your child's bed space
- before and after eating
- after using a restroom

Who should wash their hands?
Anyone who comes in contact with your child, such as a family member, friend, or clinician, should wash their hands.

Author: Dr. T. Lynn Dinkler, Clinical Committee



Bedside nurses review correct hand hygiene with families within 48 hours of admission. We have a family education sheet available in 9 languages. Nursing will review the sheet with the parents, which is especially important for families who cannot read, and then demonstrate how to wash hands with both alcohol sanitizer and soap and water.

The most important part of this program however is that parents are empowered to remind staff to clean their hands before touching their child. Some parents find this intimidating, but with support from the staff they are feeling more comfortable.

Patient Hand Hygiene

- Patients hands are cleaned at least twice a day, and as needed



Patients hands are cleaned at least twice a day, and as needed. Parents are urged to do this as part of their child's care, but nurses will do it when the parents are not available

Patient Hygiene

- Bathing: bath basins are frequently contaminated with pathogens
 - Disinfect after use
 - Do not store other patient supplies in bath basin
 - Consider packaged bath wipes
- Oral Hygiene
 - Brush teeth and gums with toothpaste and sterile water every 6 hours
- Daily linen change

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Many studies have shown that bath basins are frequently contaminated with pathogens, such as Methicillin resistant staph aureus and E coli
If you must continue to use bath basins, they should be disinfected after each use with your hospital disinfectant wipes or alcohol or bleach solutions.

Do not store other patient supplies in the bath basin, because they can become cross contaminated

Many centers in the US are now using packaged bath wipes, which are kept in a warmer. In our cardiac intensive care unit we also use chlorhexidine impregnated bath wipes daily, for all patients over 2 months of age with a central line.

We also have a strict oral hygiene program: for all patients that are intubated or fasting which includes using a toothbrush toothpaste and sterile water to clean the teeth and remove plaque, every 6 hours. Plaque will also build up on gums, so it is still important to clean gums if the patient does not have teeth. Nurses should begin to educate parents on the importance of oral hygiene from the day their child is born, or from the day the child enters the intensive care unit. Our families are given education sheets on the importance of brushing the gums and teeth from the newborn period onward, as well as scheduling regular dental visits once teeth and molars have come in.

Additionally patients have their bed linens changed at least once per day

Strategies to Change Culture: Summary

Form the team and engage champions

- Doctors and nurses
- Experts: Infection Prevention and Control
- Hospital leadership
- Other hospital staff
- Parents and patients



In summary, to effectively sustain a change in culture: Form the team and engage champions including

- Doctors and nurses
- Include the experts such as Dentists and Infection Prevention and Control
- Hospital leadership will define the mission of the hospital and provide financial backing
- Include other hospital staff such as respiratory therapy, nutrition, child life, environmental services
- And do not forget Parents and patients, they have a voice in change also, and they will be most affected by our practice

Strategies to Change Culture: Summary

- Collect baseline data
- Choose metrics thoughtfully
- Evaluate staff knowledge
- Evaluate parental knowledge
- Evaluate barriers to expected practice and improvements



- Collect baseline data
- Choose metrics thoughtfully
- Evaluate staff knowledge
- Evaluate parental knowledge
- Evaluate barriers to expected practice and improvements

Strategies to Change Culture: Summary

- Set goals and expectations
- Start with small changes
- Evaluate progress frequently
- Make changes if something is not working
- Highlight good practice
- Celebrate your success!



- Be clear with goals and expectations
- Start with small changes and evaluate progress frequently
- Don't be afraid to make changes if something is not working
- Highlight good practice: recognize doctors, nurses, and other healthcare workers who always comply with hand hygiene expectations
- And finallyCelebrate your success!

Resources

Hand Hygiene Websites:

- World Health Organization: “Clean Care is Safer Care”
<http://www.who.int/gpsc/en/>
- Centers for Disease Control and Prevention
<http://www.cdc.gov/handhygiene/>



These are 2 additional resources for education materials for hand hygiene



Remember -- infection prevention is
in your hands



Remember infection prevention is in your hands.....

COVID-19

Discuss COVID-19 experience, communication, and preparations



Information to be shared during webinar

COVID-19 Experience in Wuhan, China

Dr. Peng Ji

West China Hospital, Sichuan University
Chengdu, China



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We are thankful to have the opportunity to be joined by Dr. Peng from West China Hospital, Sichuan University in Chengdu, China who worked in Wuhan, China treating patients with COVID-19 recently who will share her experience. Thank you, Dr. Peng.

HEROES IN WHITE

—FRONTLINE EXPERIENCE OF COVID-19 IN WUHAN



Peng Ji

Attending Physician of Critical Care Medicine Department,
West China Hospital, Chengdu, China

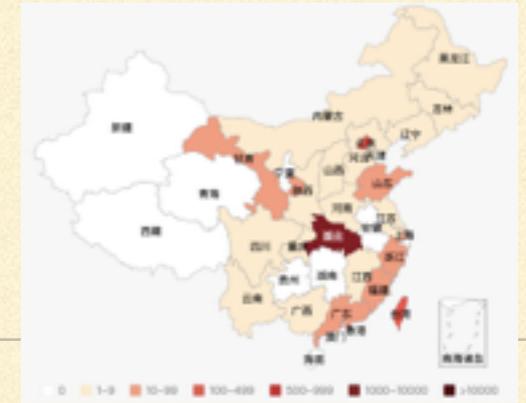
290732981@qq.com

WHO I AM



- ICU physician, dedicated in CHD treatment, West China Hospital (WCH), Chengdu
 - Finished 3-year residency training in WCH, both adult and pediatric critical care department
 - Finished 2-year anesthesia residency training in WCH
 - Finished clinical fellowship in Sickkids Hospital (Toronto, CA), cardiac critical care department (Sponsored by Heartlink)
 - Today is my 46th day in Wuhan
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WHY AM I IN WUHAN



- The most severe epidemic region which should be controlled immediately (almost 30,000 patients at that time in Wuhan)
 - So many patients cannot get adequate medical treatment (more than 10,000 patients at that time)
 - Stressful work load in Wuhan in the context of pandemic of COVID-19
 - High mortality (higher than 5%)
 - Lack of ICU resources (people, machines, PPE, beds, kits, knowledge...)
 - Construct medical team to support Wuhan (more than 40,000 medical professionals)
 - Nationwide rescue strategy
-

WHAT ARE CONDITIONS REALLY LIKE IN WUHAN

- Initially critical and urgent
 - Improved dramatically since early February
 - Resolved resources issues (PPE, people, ventilators, NA screen kit, etc)
 - All of the infected people were isolated by community screening
 - Patients were triaged according to disease severity
 - Focus on severe and elderly patients and try to save them at all costs (dedicated hospitals and dedicated medical team)
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DIFFICULTY

- Scary
- Uncertainty
- Lack of knowledge around COVID-19 and self protection
- Incomplete oxygen supply
- Convert the general ward to ICU
- Multidisciplinary medical team building and adaptation
- Working in a different local hospital, understand and coordinate with their medical system



OUR TEAM



- All of the team members are from WCH
- We are working on 2 modified ICU
- 80 inpatient beds in total
- 30 physicians, 99 nurses and 1 engineer
- Managed almost 200 severe patients so far
- Mortality is less than 2%



IS IT SAFE

- Yes
 - Sorting out process and establish norms for hospital infection control
 - Training and assessment of wearing PPE
 - Reasonable shift system to ensure adequate rest
 - Good logistics, medical staff live in hotel, commute by shuttle buses, no gathering for food, stay in own room except when working
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ABOUT MEDICAL TREATMENT

- don't think any anti-viral medicine is super useful
 - respiratory monitoring and treatment are the key points
 - nutrition is important
 - Basically we kept the same treatment quality as my hospital (bedside ECHO, PICCO, bronchoscopy, ECMO, CRRT etc. All by my own team members.)
 - Good outcome (mortality less than 2%, all of them are elderly)
 - Early intubation if necessary
 - ECMO mortality is very high (procedure, limited resources, indication, etc)
 - Watch out secondary bacterial infection
 - Protect medical professionals are the most important part
-

WHAT DO WE WEAR

- surgical mask all of the time (even in the shuttle bus, or when talking with colleagues)



WHAT DO WE WEAR

- Level 2 protection if entering quarantine area



WHAT DO WE WEAR

- Level 3 protection if working for long periods or aerosol generating procedures (intubate, extubate, bronchoscopy, tracheostomy, ECMO)



WHAT ABOUT THE NURSES

- Doctors talk, nurses do. (traditional Chinese saying)
 - Actually, nurses are the medical professionals most worthy of praise
 - Nurses that stay with the patients 24 hours nonstop
 - Nurses are responsible for cleaning the ward, handing out hot water, delivering meals, administering shots and IVs, performing bedside ECGs, conducting blood tests and arterial blood gas analyses, checking vital signs, and so much more.
 - Everything you can and can't think of, what is in and not in a nurse's job description, anything the patient needs outside the doctor's responsibilities, all fall on the shoulders of our nurses
 - They warrant higher salaries, higher social status, and society's utmost kindness and respect.
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MY SUGGESTION

- Disease control is more important than sole treatment itself
 - Centralized admission, comprehensive screening, key treatment of key patients, and rapid replenishment of supplies and personnel are the fundamental reasons for improvement of the situation
 - Negative pressure wards don't appear to be a necessity
 - Normal wards can be converted to isolation wards in special times
 - Consider the sub-professions that may be needed when forming a team
 - Respiratory therapists play an important role in treatment
 - Hospital infection management is important, and hand hygiene is especially important in isolation wards
 - The disease itself appears to have a higher mortality rather than other influenza. Hypercapnia is very common
 - Don't blindly believe in antiviral treatments, maintain immunity, support by adequate respiratory therapy is the best treatment solution
 - Respect nurses, the most valuable of all people in the event
 - Psychotherapy is extremely important (family cannot stay with patients, several family members passed away in the event, frighten, depression, etc)
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Boston Children's Hospital
Until every child is well

HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

Thank you!

Any questions?

Email IQIC: InternationalQI@Childrens.Harvard.edu

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Thank you for your kind attention, we will now take questions.