



**Pan American
Health
Organization**



**World Health
Organization**

REGIONAL OFFICE FOR THE **Americas**

Webminar

- Recommendations:
- Please turn off your microphone.
- There will be 1 hour of presentation and 1 hour of questions and answers.
- Questions should be in writing, through the Chat or by email to: Infectioncontrol@paho.org
- The presentation will be available on the PAHO website in 48 hours.

Acknowledgment

This seminar was possible thanks to the auspices and cooperation of the Infection Control Center (CDC), according to the cooperation agreement CDC-RFA-CK13-1301. "BUILDING CAPACITY AND NETWORKS TO ADDRESS EMERGING INFECTIOUS DISEASES IN THE AMERICAS"



Using an **OUTBREAK** to Drive Change: Building an IPC program

Starting from

SCRATCH



Dr. Corey Forde MD,DM

Head of Infectious Diseases and Infection Prevention and Control
Queen Elizabeth Hospital – Barbados



Outline

Starting from
SCRATCH



1. Set the scene for the need for an IPC program in an Outbreak - scenario in Caribbean
2. Understand the importance of administrative leader buy in for an infection prevention program.
3. Revise the Core components of IPC Program and their application
4. Highlight the key issues in starting an IPC program in Resource limited setting.
5. Look at the possible challenges and solutions in starting from “scratch”
6. Introduce the **PROGRESS** concept

Setting The Scene Barbados

Hospital Background:

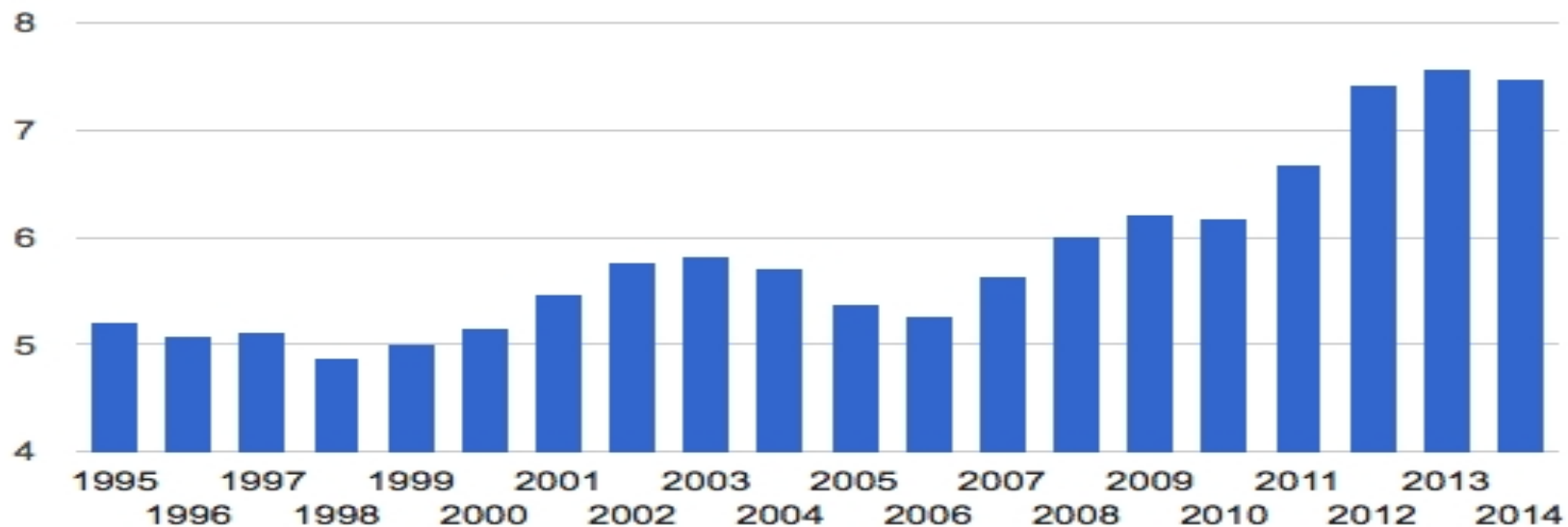
Public Facility: Queen Elizabeth Hospital, Barbados (51yrs old)

Bed Capacity: 600 beds with 60-70% occupancy

Specialty of Hospital: General Medical & Surgical Specialties- (neurosurgery, orthopedics, ophthalmology, cardiology), O & G, neonatal services, hematology and oncology services



Barbados Health spending as percent of GDP



Source: TheGlobalEconomy.com, The World Bank



Media Clips 2013 A True Story Part 1



Never Let A Crisis Go To Waste

**Bacteria alert at
QEH**

Sanka Price,
Added 03 April
2013

Related articles

- [Bacteria back at QEH](#)
- [QEH officials to update on bacteria...](#)
- [Bacteria delaying some QEH surgeries..](#)

Infectious Disease Specialist, Dr. Corey Forde (centre) speaking to the media. He is flanked by Chief Medical Officer, Dr. Joy St. John (left) and Head of Paediatrics, Dr. Clyde Cave (right). (G. Brewster/BGIS)

**Queen Elizabeth Hospital A Safe Place To Stay
And Visit**

by Melissa Rollock
Published on April 3, 2013

The Queen Elizabeth Hospital (QEH) continues to be a safe place for both patients and visitors. This message was reinforced by the hospital's Infectious Disease Specialist, Dr. Corey Forde, today at a Press briefing to address an increase in the prevalence of an infectious organism known as *Klebsiella Pneumoniae* at the QEH over the last 18 months. Dr. Forde emphasised that one of the ways to control any further spread of the bacteria was for members of the public to employ good "hand hygiene practices" when visiting the hospital.

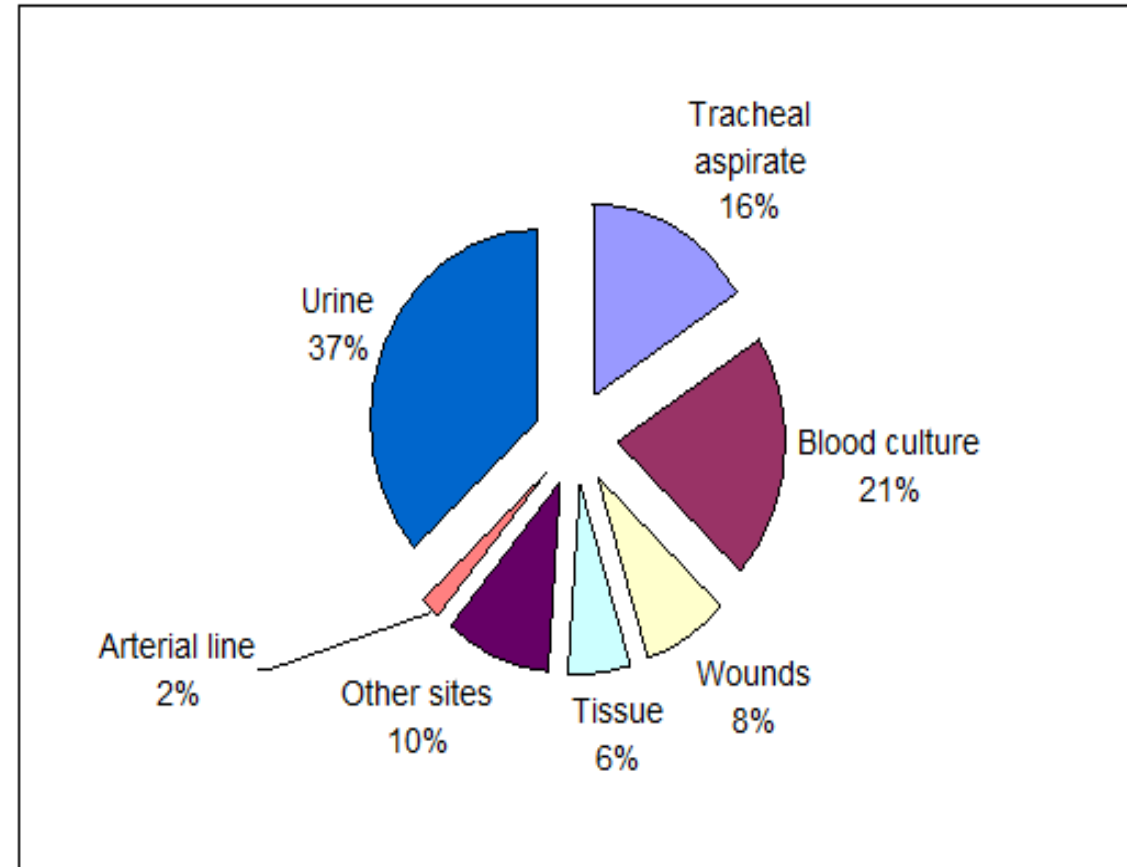
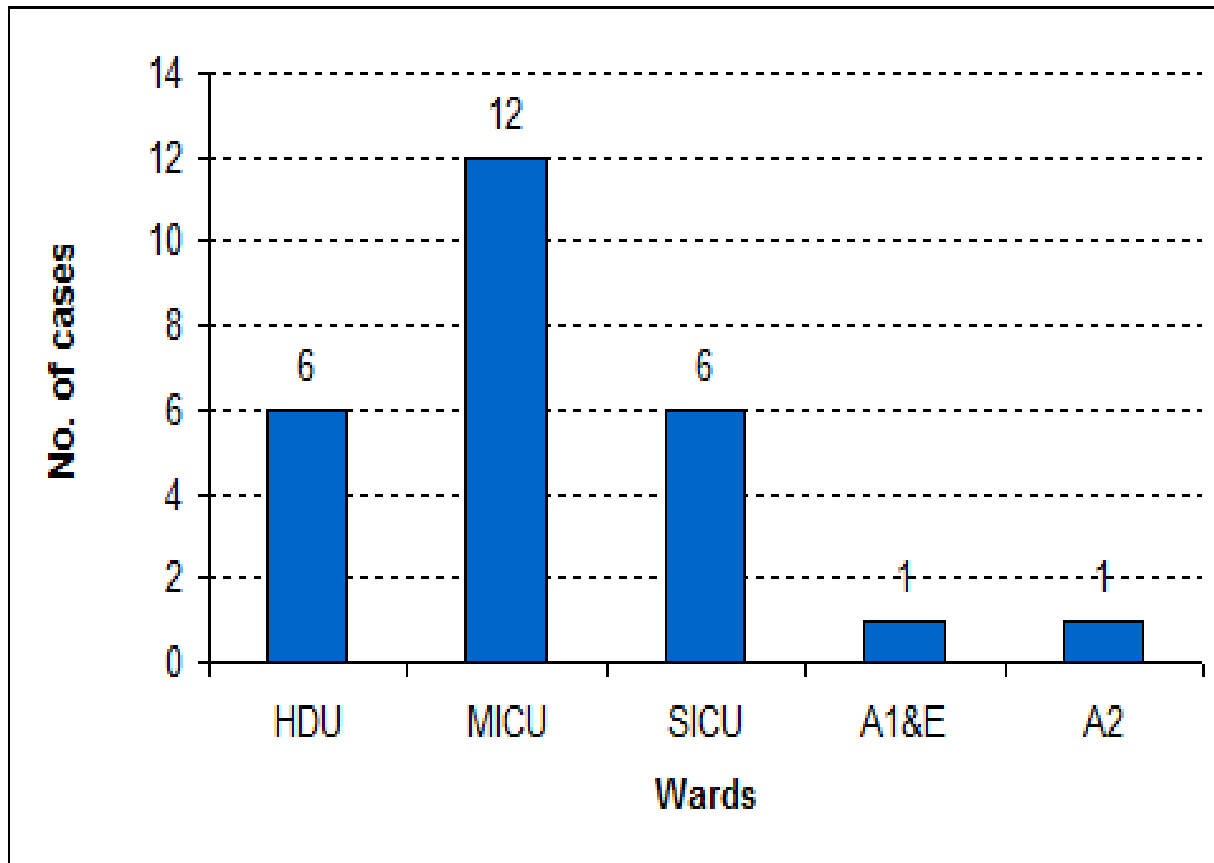
This is how we felt!!!!!!!!!!!!!!!!!!!!!!!!!!!!

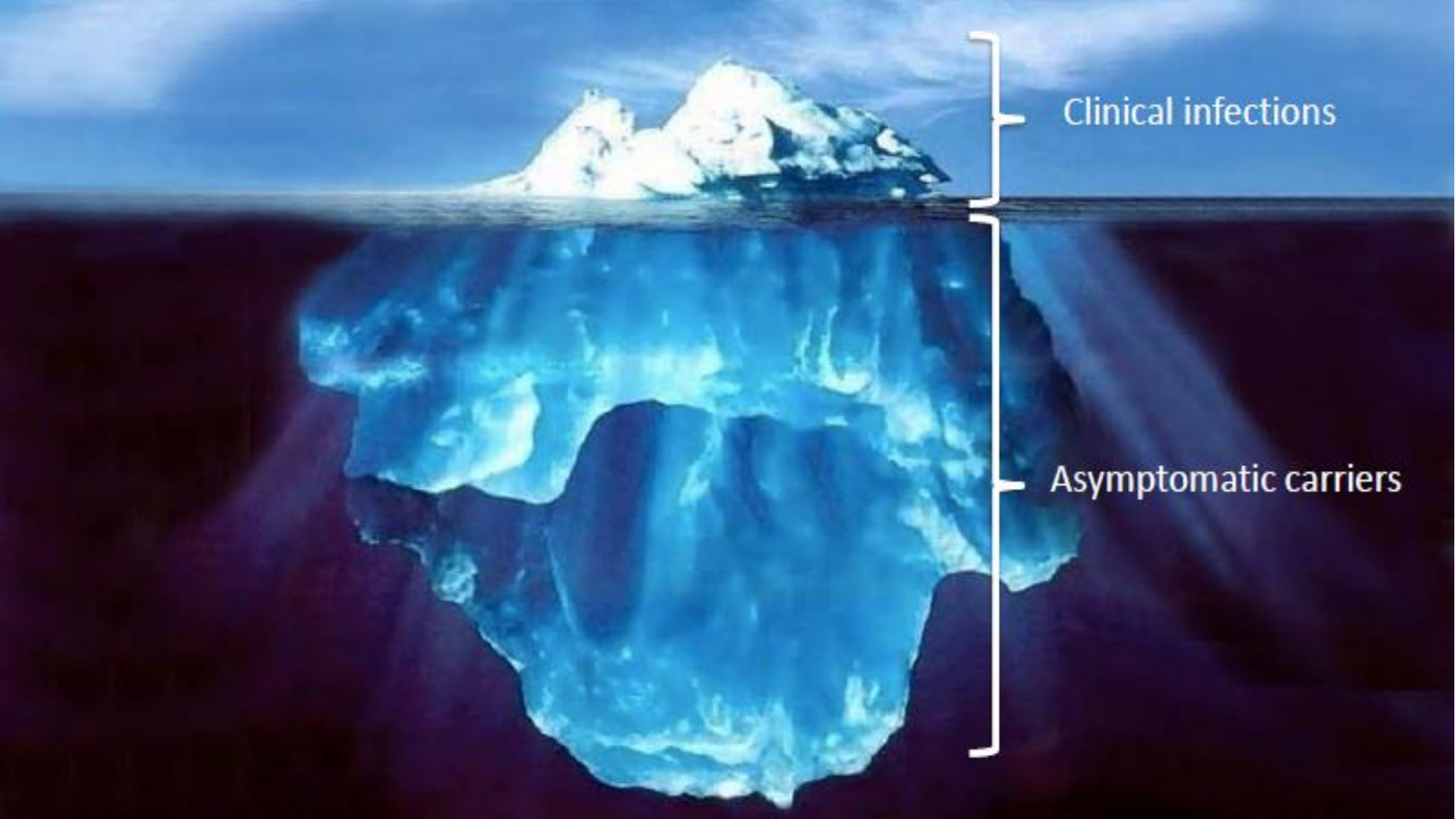


Introduction

Historical data from start of outbreak

From January to October 2012, a total of 26 cases were reported

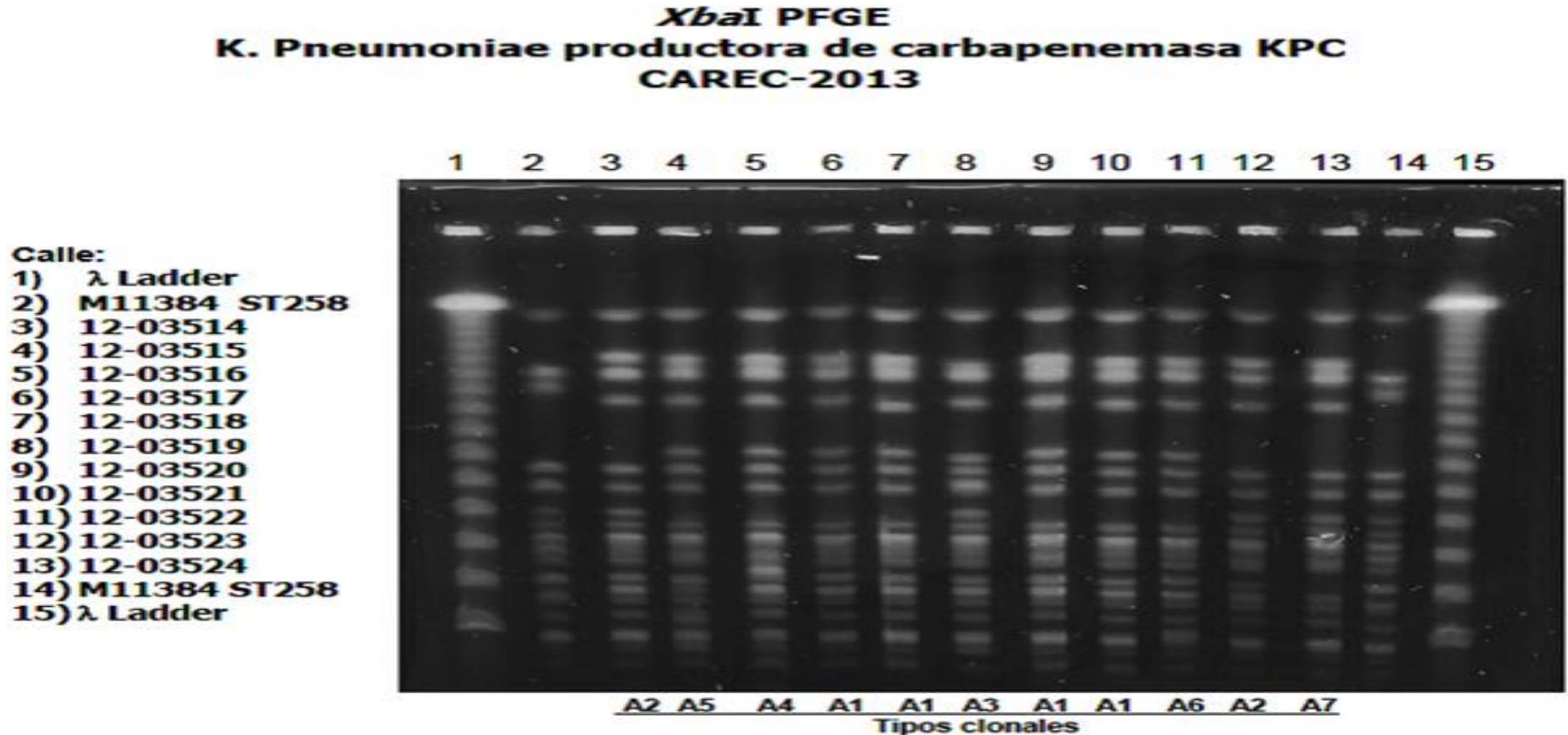




Clinical infections

Asymptomatic carriers

Fig 1. PFGE for molecular typing of selected samples showing similarities in band patterns across each sample.



Forde C, Stierman B, Ramon-Pardo P, dos Santos T, Singh N (2017) Carbapenem-resistant *Klebsiella pneumoniae* in Barbados: Driving change in practice at the national level. PLOS ONE 12(5): e0176779. <https://doi.org/10.1371/journal.pone.0176779>
<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0176779>

Coordination Of Limited Resources And Assembly Of An IPC Team For a Point Prevalence Survey



- Administration
- Microbiology
- Nursing and Medical Teams
- IPC Team
- Patient, Visitors and Staff sensitization
- Media and Legal Services
- Housekeeping Staff
- University Students
- PAHO Representatives

Point Prevalence Screening Results

- Survey of conducted on 26 wards with a total of 311 patients

Total Of 53 Patients

- Six rectal swabs were positive at the time of screening.

Were Colonized (18%)

- One patient on SICU was already a known case of CRKP

- A total of 299 (96%) patients received a rectal swab, with eight (3%) refusing to take part in screening and four (1%) were not swabbed due to other reasons.

The infection to colonization ratio was 1:7

Table 1. Characteristics of CRKP positive patients from point prevalence study.

Characteristics		Case (n = 53), n (%)	Non-Cases (n = 246), n (%)	p
Gender	Female	30 (56.6%)	153 (62.2%)	0.45
Age (years)	Mean (Min, Median, Max)	64.7 (26,65,95)	48.7 (0,49,102)	<0.0001 ^a
Length of Stay	Mean (Min, Median, Max)	42.5 (1,15,746)	27.0 (1,8,410)	0.0042 ^a
	>10 days	36 (67.8%)	113 (46.1%)	0.0040 ^a
Invasive Devices	Mean Number of Devices (Min, Median, Max)	1.02 (0,1,5)	0.51 (0,0,5)	<0.0001 ^a
	Any Device	35 (66.0%)	78 (31.7%)	<0.0001 ^a
	Urinary cath	29 (54.7%)	60 (24.4%)	<0.0001 ^a
	Mechanical Ventilation	2 (3.8%)	12 (4.9%)	1.00
	Nasogastric Tube	11 (20.8%)	29 (11.8%)	0.082
	Invasive Vascular Line	7 (13.2%)	18 (7.3%)	0.17
Antimicrobials	On Antimicrobials	48 (90.6%)	113 (45.9%)	<0.0001 ^a
	Mean Number of Antimicrobials (Min, Median, Max)	2.1 (0,2,6)	0.9 (0,0,6)	<0.0001 ^a
Location	In Intensive Care Unit	5 (9.4%)	1 (0.4%)	0.00077 ^a

Min, Minimum; Max, Maximum; Urinary Catheter; Nasogastric Tube, Intensive Care Unit

^ap ≤ 0.05 considered significant

<https://doi.org/10.1371/journal.pone.0176779.t001>

Forde C, Stierman B, Ramon-Pardo P, dos Santos T, Singh N (2017) Carbapenem-resistant *Klebsiella pneumoniae* in Barbados: Driving change in practice at the national level.

PLOS ONE 12(5): e0176779. <https://doi.org/10.1371/journal.pone.0176779>

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0176779>

Success Story Component:

✓ Outbreak Investigation and Response using CDC CRE Tool Kit

✓ IPC Team Expansion

✓ A Change in the Culture in Institution (Catheters/ Restriction and Enforcement of Restricted Drugs), material resources and infrastructural changes, education and training of health care workers, signage

✓ Active Surveillance and enhanced communication between Microbiology and IPC

✓ Development and launch of National ASP

✓ Infection Control Week Barbados and Now Caribbean Infection Prevention and Control Week



MARKET JITTERS spending power
mutual fund CREDIT CRUNCH
emergency loans
endorse stimulus package
APITAL INVESTMENT

Financial crisis
dollar weakens STOCK MARKET
Downturn Inflation
slump confidence wobbles
Economic disaster
Shares
Stocks tumble
anxiety deepens
survival in danger
risk

World News

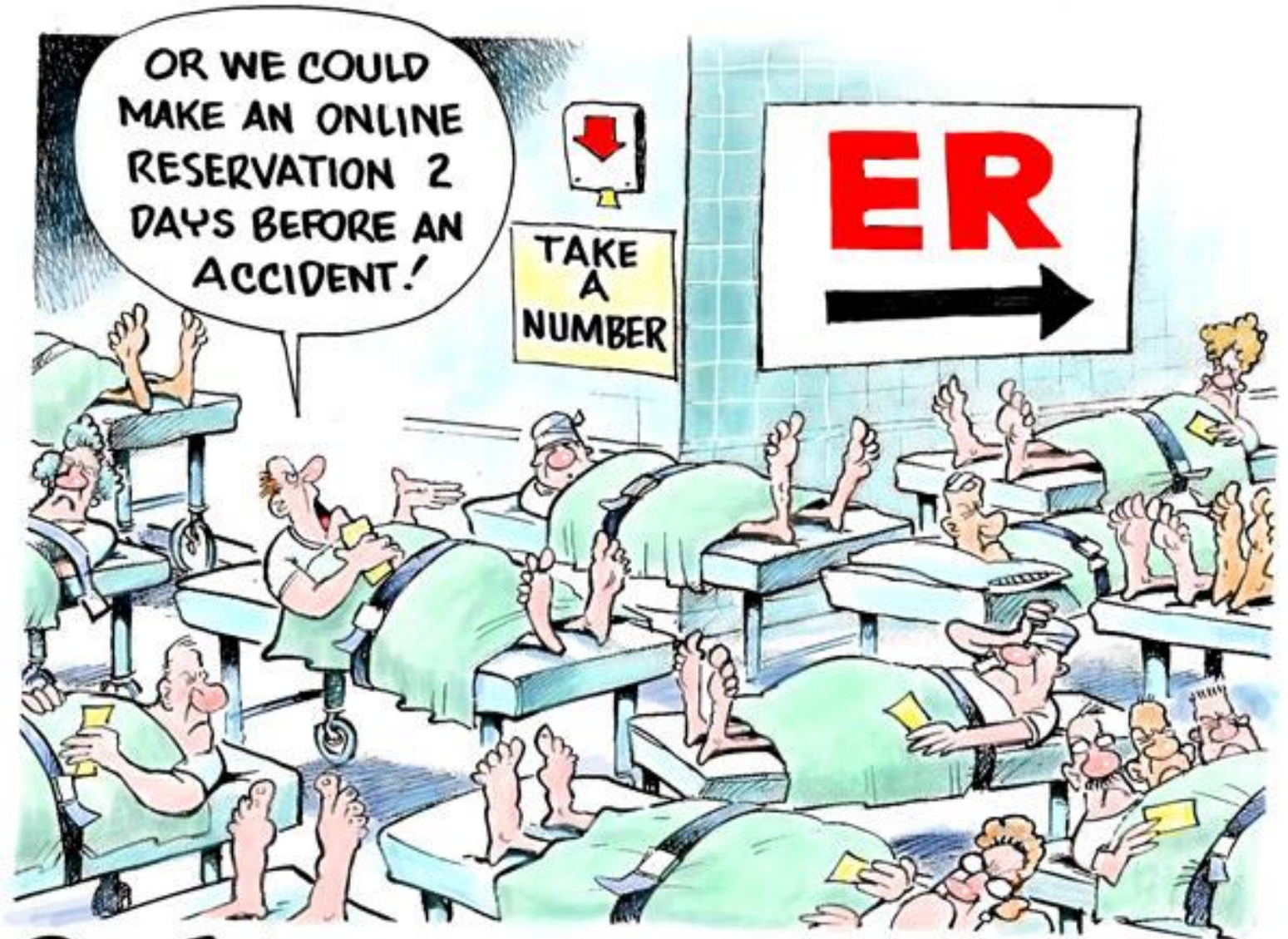


Nuclear catastrophe!





SITUATION IN
RESOURCE
LIMITED
SETTINGS IN
LOW AND
MIDDLE INCOME
COUNTRIES



DAVE GRANLUND © www.davegranlund.com

Each health care facility needs to:

Develop An Infection Control Programme To Ensure The Well Being Of Both Patients And Staff

Develop Annual Work Plan To Assess And Promote Good Health Care, Appropriate Isolation; Sterilization; And Other Practices, Staff Training, And Epidemiological Surveillance;

Provide Sufficient Resources To Support The Infection Control Programme.



Core Components of an IPC Program 2016 Update

Core component 1: Infection prevention and control programmes

Core component 2: National and facility level infection prevention and control guidelines

Core component 3: Infection prevention and control education and training

Core component 4: Health care-associated infection surveillance

Core component 5: Multimodal strategies for implementing infection prevention and control

Core component 6: Monitoring and evaluation and feedback

Core component 7: Workload, staffing and bed occupancy at the facility level

Core component 8: Built environment, materials and equipment for infection prevention and control at the facility level

Organization Of An Infection Control Programme

Facility Level

The hospital administrator/head of hospital should:

- Establish an infection control committee and infection control team
- Provide adequate resources for effective functioning of the infection control programme.
- Establish mechanisms for oversight
- Hospital leadership should be accountable for the IPC program (measurable goals and objectives)
- Ensure an adequate position in the hospital organizational structure for the IPC officers



Infection Prevention And Control Programme

- Set relevant objectives consistent with other national health care objectives;
- Develop and continually update guidelines for recommended health care surveillance, prevention, and practice;
- Develop a national system to monitor selected infections and assess the effectiveness of interventions;
- Harmonize initial and continuing training programmes for health care professionals;
- Facilitate access to materials and products essential for hygiene and safety;
- Encourage health care establishments to monitor health-care associated (nosocomial) infections and to provide feedback to the professionals concerned.

Incidence of Healthcare associated infections

- Lack of reliable data affects estimates on the burden of HAIs
- No health-care facility, no country, no health-care system in the world is free of this problem
 - Developed world: 5–10% patients
 - Developing countries: risk is at least 2 times higher and can exceed 25%
 - ICU - 30% patients; attributable mortality as high as 44%

The Impact Of HAIs On Individuals Is Well Documented

- ❖ Increased morbidity and mortality
- ❖ Decreased well-being and increased suffering
- ❖ Psychosocial effects as a result of isolation- (particularly in long-term care)
- ❖ Safety issues including reduced attention to isolated patients from health care personnel:
(the impact of isolation is an important consideration as recent Canadian data show that 92% of VRE patients were isolated and 22% of these patients were on isolation for more than 28 days)
- ❖ Prolonged length of stay in hospitals with subsequent increased direct costs and reduced bed availability
(e.g., Prolonged waiting time for patients needing joint replacements)



The Study on the Efficacy of Nosocomial Infection Control (SENIC Study)

- 6 % of infection can be prevented by *minimal* infection control efforts
- 32% could be prevented by a well organised & highly effective infection control programme

Haley RW. *Am J Epidemiol* 1985;121:182-205

Uncertainty And Implications For Low And Middle Income Countries







Starting from scratch: The PROGRESS Concept for Resource Limited Settings

Political Will

Resource distribution and Utilization

Observation

Goal Setting

Reassessment

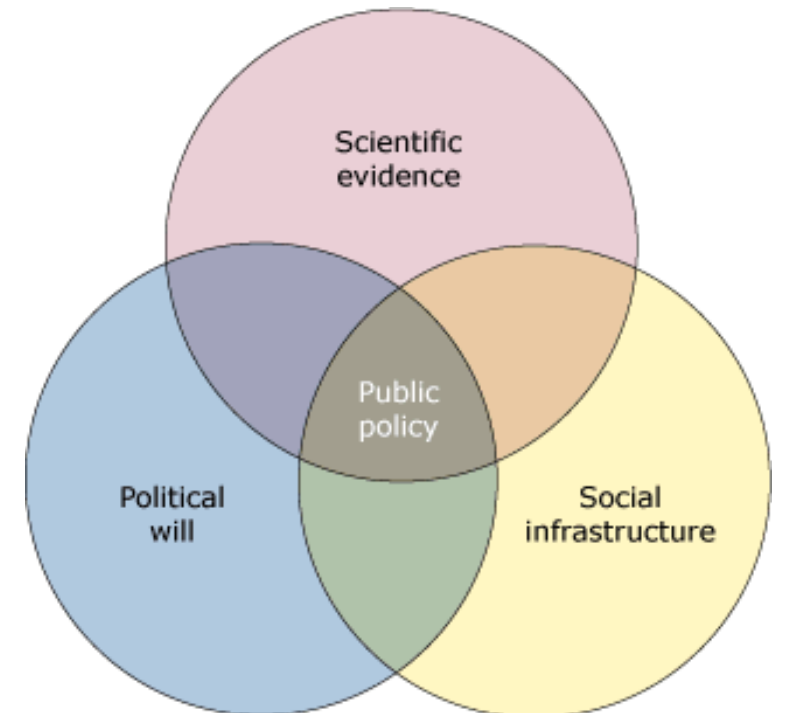
Education

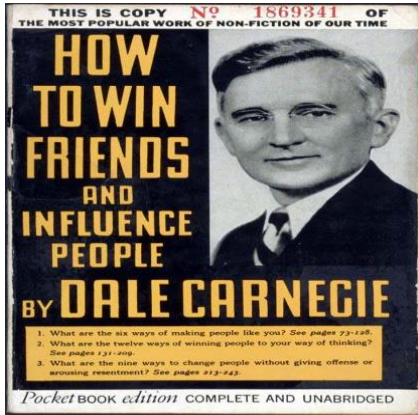
Surveillance Strategy

Stewardship Program Development

Political Will -Single most important step

- Political intention or desire specifically the firm intention or commitment on the part of a government to carry through a policy, especially one which is not immediately successful or popular.





Barriers:

- ✓ Lack of scientific data with in the environment
- ✓ Perceived financial burden/no clear benefit
 - ✓ Benefits of changing from the norm
 - ✓ Lack of leadership

If I were given one hour to save the planet, I would spend 59 minutes defining the problem and one minute resolving it". -Albert Einstein

Political Will- Getting 'Buy-in'

- The most important feature of a successful IC program is a supportive organizational structure emphasizing a commitment to a culture of safety that allows for successful monitoring of the appropriate components of IPC.

Allegranzi B, Bagheri Nejad S, Combescure C, et al. Burden of endemic health-care-associated infection in developing countries: systematic review and meta-analysis. *Lancet*. Jan 15; 2011 377(9761):228–241. [PubMed: 21146207]

Murphy DM, Hanchett M, Olmsted RN, et al. Competency in infection prevention: a conceptual approach to guide current and future practice. *American journal of infection control*. May; 2012 40(4):296–303. [PubMed: 22541852]

How Do You Gain Political Will ?

- Who are the key MOH parties? – Figure out who is on board!!!
- Present local scientific information- Institutional and National level
- Demonstrate a no or low cost implementation
- Demonstrate key and easy cost saving areas to target and set one or two targets to report back on to administrators as success stories.
- Identify Key Policy Initiatives already in place to fit your program – NAP (No need for duplication)
- Use of Outbreaks to Drive change.¹
- Engage public and the Media to keep political will and your program going once started

Tips for pitching your issue



- Run the meeting: Have an agenda, start on time, keep moving
- Start by framing the problem with facts that everyone can agree on
- Don't present a problem without having a well-planned solution
- Don't get stuck in the weeds
 - Take note of perceived roadblocks and move on
- Keep it constructive
 - Don't spend your time complaining about the issue, the lack of previous support for your work, or how problems never get solved at your hospital
- Focus the discussion on the costs and benefits of the problem and your solution

Media Engagement in the A Resource Limited Setting to Keep Political Will

- TV /Call in Programs and Public Lectures
- Invitations of Media and administration to Conferences which highlight at launches in the program



NATURAL SELECTION:

“Those who survive are not the smartest nor the strongest, but those who are best adapted to the environment”



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Resource Distribution and Utilization:

The resources of an organization or person are the materials, money, and other things that they have and can use in order to function properly.

Resource Distribution and Utilization:- Making It Happen!!!!

- Do you have the physical and human resources in country to make the start?
- How are current resources being utilized?

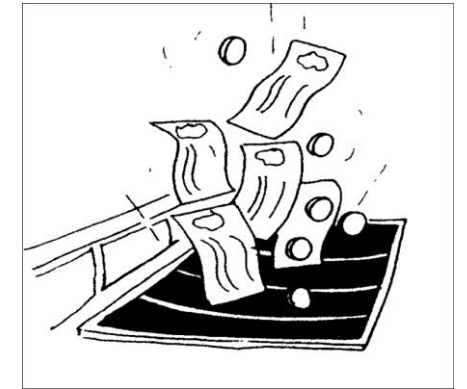
COST SAVING MEASURES

Unnecessary and wasteful practices

- Routine
 - Microbic
 - Disinfect
 - Fumigati
- Unnecessar
 - Use of o
 - Personal
- Excessive/u
 - IM/IV ir
 - Insertion of indwelling devices e.g. IV lines, urinary catheters, nasogastric tube
 - Antibiotics both for prophylaxis and treatment

**COST
EFFECTIVE**

nit



Damani NN. *Journal of Hospital infection* 2007; 65(S1): 151-154.



Low to No Cost Measures

Good infection control practices



- Aseptic technique for all sterile procedures
- Remove indwelling devices when no longer needed
- Isolation of patient with communicable diseases/multi-resistant organism
- Avoid unnecessary Per Vaginal (PV) examination in women in labour
- Placing mechanically ventilated patients in a semi-recumbent position
- Minimize number of people in operating theatre

Damani NN. *Journal of Hospital Infection* 2007; 65(S1): 151-154.

Low Cost Measures

Cost effective practices



- Education and practical training in
 - Hand hygiene
 - Aseptic technique
 - Appropriate use of PPE
 - Sharp use and disposal in robust containers
- Provision of alcoholic hand rub and hand washing facilities for hand hygiene
- Use of adequately sterile items for invasive procedures
- Use of single-use disposable sterile needles and syringes
- Adequate decontamination of items/equipment between patients
- Provision of Hep B vaccination for healthcare workers
- Post exposure management of healthcare workers

Recruiting Physician and Nursing Champions

- Identify the clinician leaders with a stake in the issue
 - Approach people who have a demonstrated ability to drive change
 - Ask personally
- Develop a work group of champions
- Assign specific tasks
- Engage their ideas on changing the hospital's culture
- Provide follow up and reports on progress of intervention



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Observation

- **The activity of paying close attention to someone or something in order to get information :- something you notice by watching and listening or researching....**
- Observation of IPC programs through literature searches for success stories is a valuable at the start.
- New programs should use lessons learnt in settings much like theirs.
- These success stories and challenges encountered can be used in the next aspect of **Goal Setting**.

Observation

- What data do you have available?
- What are the success stories from literature that can be used in your settings?

Don't Reinvent



Perfect It

Effect of hand washing on child health

Randomised controlled trial in Karachi, Pakistan.

Hand washing with soap and water

Children under age of 5 years

- 50% lower incidence of pneumonia

Children under age of 15 years

- 53% lower incidence of diarrhoea
- 34% lower incidence of impetigo

Luby SP *et al. Lancet* 2005; **366**: 225-33.

IPC Programs have been credited with significant cost savings including the following:

- a reduction in hospital health care costs and lengths of stay
- a reduction in incidence and costs of surgical site infections including post Cesarean section and post-cardiac surgery
- a 19%–22% decrease in antibiotic expense without negative impact on patient outcomes
- improved compliance with isolation precautions to control the transmission of MRSA resulted in a sustained 30% decrease in its incidence over two years

Kressel AB, Keitkemper P, Losekamp G, Siddiqi TA. Cost-savings from reducing post-cesarean infection rates. *American Journal of Infection Control* 28[1], 78. 2-1- 2000.
RCromer AL, Hutsell SO, Latham SC, Bryant KG, Wacker BB, Smith SA, et al. Impact of implementing a method of feedback and accountability related to contact precautions compliance.

Am J Infect Control 2004;32:451-5.

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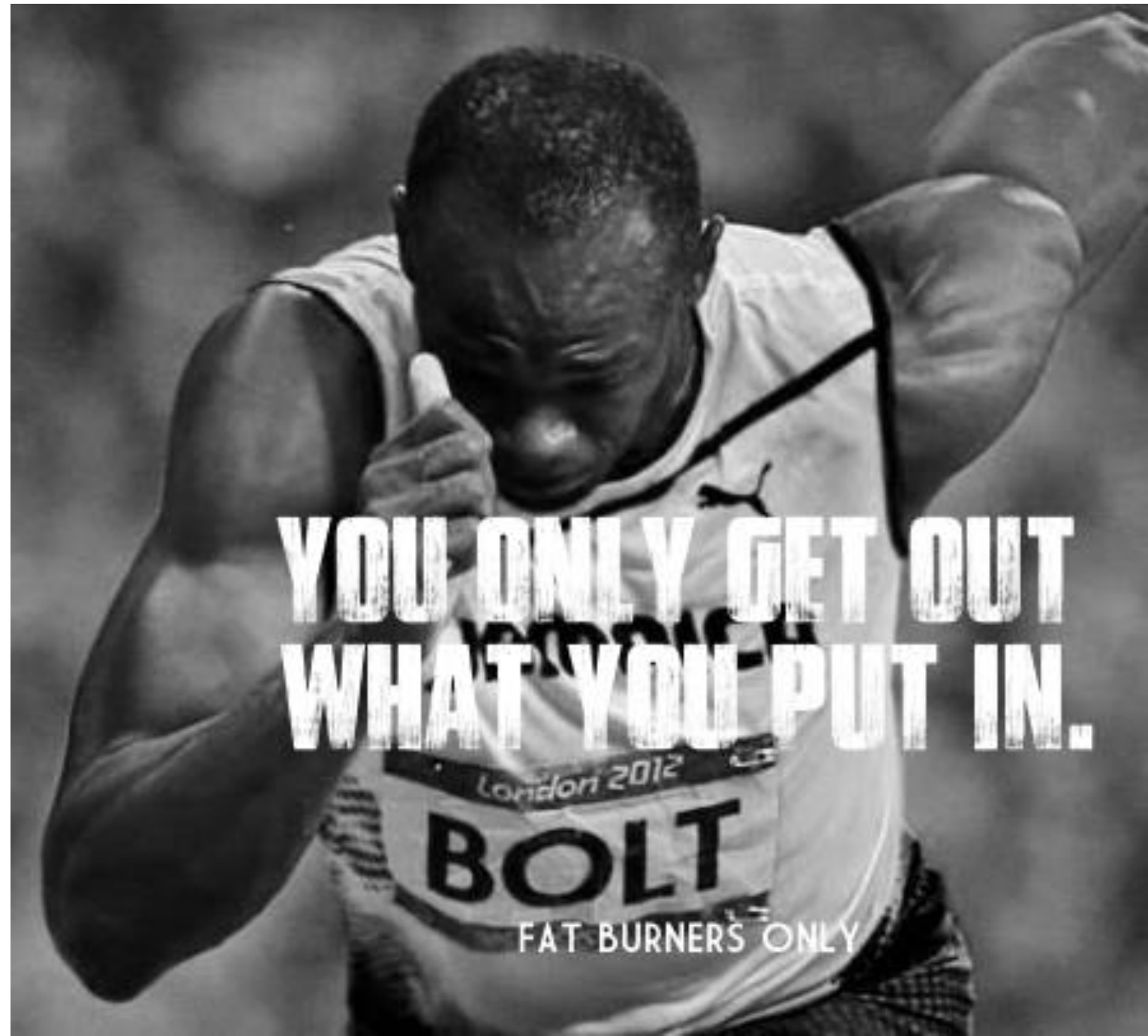
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Goal setting

Goal setting involves the development of an action plan designed to motivate and guide a person or group towards a target.

People perform better when they are committed to achieving certain goals.



Setting goals affects outcomes in four ways:

- **Choice:** Goals narrow attention and direct efforts to goal-relevant activities, and away from goal-irrelevant actions.
- **Effort:** Goals can lead to more effort-: one may work more intensely towards the goal than one would otherwise.
- **Persistence:** Someone becomes more likely to work through setbacks if pursuing a goal.
- **Cognition:** Goals can lead individuals to develop and change their behavior.

Goal Setting

- What are the “**low hanging fruit**”?
- What are the immediate short term and long term goals?
- What are key yearly goals for the program?



Define an Institutional IPC Committee: Role

- To review and approve a yearly programme of activity for surveillance and prevention;
- To review epidemiological surveillance data and identify areas for intervention;
- To assess and promote improved practice at all levels of the health facility;
- To ensure appropriate staff training in infection control and safety management, provision of safety materials such as personal protective equipment and products; and
- Training of health workers.

Goal Setting – Hand Hygiene Campaign

Reset the importance of Hand Hygiene – WHO 5 moments

Campaign involving staff, visitors and patients

Use posters, videos, direct teaching, screen savers, social media etc.

Local school competitions for poster (National and Institutional based)

Engage media

Goal Setting – Hand Hygiene Campaign

- St Vincent and Grenadines: INSTITUTIONAL AND NATIONAL RESET
- SLOGAN: "Hand Hygiene the key to being germ free"



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Reassessment

- To perform a reassessment of something is to evaluate it again, or reappraise it, especially if its value has changed or new information has altered your understanding of it.



Reassessment

Internal Audits of program & External Audits are Necessary *Audit tools for monitoring infection control standards and the Nosocomial Infection Program Rapid Evaluation Guide*, produced for use in LMI countries by the Pan American Health Organization/Regional Office of the WHO (PAHO)

CDC AUDIT TOOL,

[Infection Control Assessment Tool for Acute Care Hospitals](#)

[Infection Control Assessment Tool for Long-term Care Facilities](#)

[Infection Control Assessment Tool for Outpatient Settings](#)

IPC CANADA

https://ipaccanada.org/photos/custom/Members/Tools/PAT_Workbook.pdf

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Depends On How You See The World?



Education

The process of receiving or giving systematic instruction

- Administrators
- Employees
- Visitors
- Patients

Infection Prevention and Control Manual

Practical Guidelines for Infection Control in Health Care Facilities

http://www.wpro.who.int/publications/docs/practical_guidelines_infection_control.pdf

1. Infection Control Programme
2. Infection Control Practices- Standard and Additional Precautions
3. Environmental Practices
4. Care of healthcare Workers
5. Special IPC Issues

“Infection control is everyone’s responsibility”

1. Define the hospital standard content of the induction training
2. Include all health care personnel (new staff)
3. Ensure visible signs and effective communication on special precautions
4. Establish a formal link between housekeeping and IPC Department
5. SOPs on hospital cleaning procedures, including adequate use of disinfectants.
6. Training on cleaning, disinfection and sterilization

Multimodal Strategy

- A bundle is structured way of improving the processes of care and patient outcomes: a small straightforward set of evidence-based practices (eg. 3-5) that, when performed collectively and reliably, have been proven to improve patient outcomes.

Ressar R – Joint Commission Jr on Qual & Patient Safety 2005; 243-248

Role of For Partnership in The Resource Limited Training and Audits



Impact of Staff Education Programme on Ventilator-associated Pneumonia

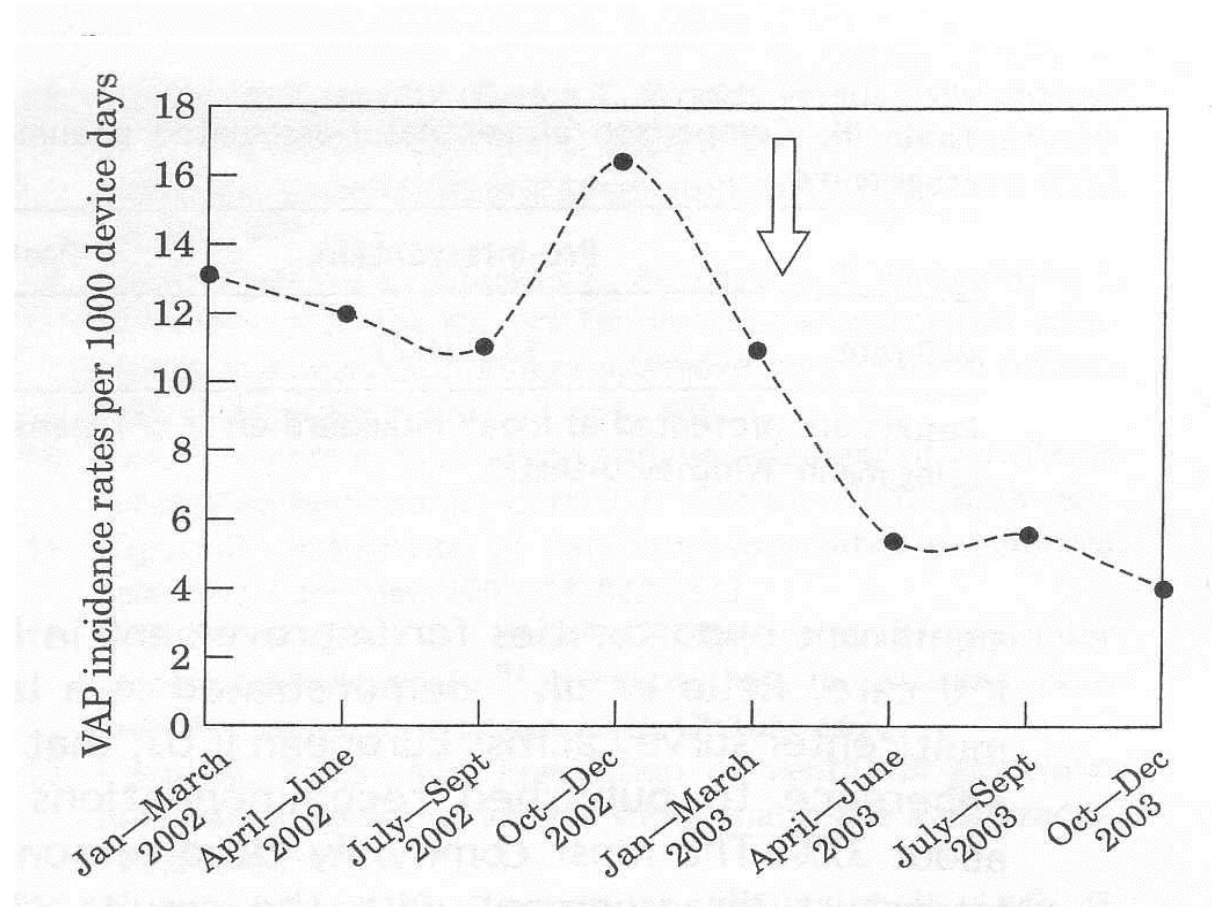
Aga Khan Hospital, Karachi, Pakistan

Reduction in incidence of VAP from 13.2 to 6.5 episodes /1000 ventilator days

Salahuddin N et al. *J Hosp Infect* 2004;57: 223-227

Reduction in incidence of VAP from 12.6 to 5.7 episodes /1000 ventilator days

Zack JE, *Crit Care Med.* 2002;30:2407-2412



Importance of International and Regional Support in Resource Limited Settings



WHO/PAHO WORKSHOP ON NATIONAL ACTION PLANS DEVELOPMENT FOR REGIONAL COUNTRIES



CDC : Supporting Speakers to Segment of Caribbean IPC Week





Making healthcare safer

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Determining costs: Personnel Needs



- How many infection preventionists should a program have?
- SENIC study¹:
 - One IP per 250 beds in 1974
- Delphi Project ²:
 - 0.8 to 1 IP per 100 beds in 2002
- Survey of SHEA membership 2010³
 - Number of IP's decreased as hospital size increased
 - 1:139 for <200 beds
 - 1:205 for >600 beds

Surveillance

- The increased economic costs of HAIs are mainly a result of extra days the patient has to stay in hospital.
 - Estimated increased length of stays published in the US in 2000 were
 - 1– 4 days extra stay for a urinary tract infection,
 - 7–8 days for a surgical site infection,
 - 7–21 days for a bloodstream infection,
 - 7–30 days for pneumonia.
- Costs of these infections vary from \$600 for a urinary tract infection to over \$50,000 for a bloodstream infection.



© Kilian-Nakamura.com 2007



Stewardship Program Development



A model for LMIC Getting things together.....

	This IDEAL framework includes:
I	Implement programs for infection prevention and control
D	Develop antimicrobial and diagnostic stewardship based on local data
E	Enhance interventions based on relevant technical and behavioral factors to improve impact
A	Accreditation of healthcare institutions to improve quality and safety of care
L	Legislation to ensure compliance with accreditation

What is Antimicrobial Stewardship ?

Coordinated interventions to **improve and measure the appropriate use of antimicrobials** by promoting the selection of the optimal antimicrobial drug regimen, dose, duration of therapy and route of administration.

Ensuring that every patient gets:

- An antibiotic only when one is needed
- The right agent
- At the right dose
- For the right duration

Cost Saving Measures

Antibiotic prescribing

35% of the total healthcare budget is spent on antimicrobials versus 11% in developed countries.

Isturiz RE et al . *Infection Control Hospital Epidemiology* 2000;21:394-397

What Can We Do?

- Sit around and ~~wait~~ for new antibiotics?
- Programmatic approach: antimicrobial stewardship
- Point-of-care approach: teach prescribers to change their views and habits
- National requirements

Critical Relationships

- **Hospital Administration**

- Endorsement of the program and its mission
- Resources

- **Pharmacy**

- Enforcement of restriction policies
- Data on antimicrobial use
- Identification of prescribing trends

- **Information Technology**

- Assistance with collating antimicrobial, microbiology and clinical data from several sources
 - To facilitate identification of cases for intervention
 - To track antimicrobial use

Critical Relationships

- **Pharmacy and Therapeutics Committee**
 - Determination of what antibiotics will be available on the formulary
 - Endorsement of guidelines and restriction policies
- **Other Infectious Diseases Providers**
 - Address concerns about effect of program on infectious diseases consults
 - Agreement regarding guidelines
- **Thought-leaders from Other Services**
 - Agreement regarding guidelines
- **Patient Safety Groups**
 - Implementation and quality improvement approaches

Critical Relationships

- **Infection Control Department**

- Knowledge of trends regarding resistant organisms, *C. difficile*, and clinician behaviors in the institution
- Familiarity with acquiring, tabulating, and disseminating data

- **Microbiology Laboratory**

- Antibiogram
- Selective reporting of susceptibility testing
- Practical interpretation of microbiology data
- Rapid diagnostic testing

Know Your Microbiology Lab Requirements

- Trained staff
- Standardized procedures ID, AST.
 - Blood culture
 - Urine
 - Catheter
- Quality Control program
 - QC all procedures
 - Records QC
 - ATCC strains
 - Corrective actions
- Equipment, reagents and materials
- Computer and internet access (IT)
- Software to collect and analyse MicroB information (WHONET)





Routine Cultures !!!!!!!

- Tracheal Aspirates
- Urine Cultures
- Environmental Swabs



CHANGING THE “CULTURE”

Trautner et al, JAMA Intern Med. 2015;175(7):1120-1127

Sarg, M., et al., Impact of changes in urine culture ordering practice on antimicrobial utilization in intensive care units at an academic medical center. Infection Control & Hospital Epidemiology, 2016

Jones, K., et al., How and when nurses collect urine cultures on catheterized patients: A survey of 5 hospitals. American Journal of Infection Control, 2016. 44(2): p. 173-176



AMR Role of For Partnership in The Resource Limited Setting :

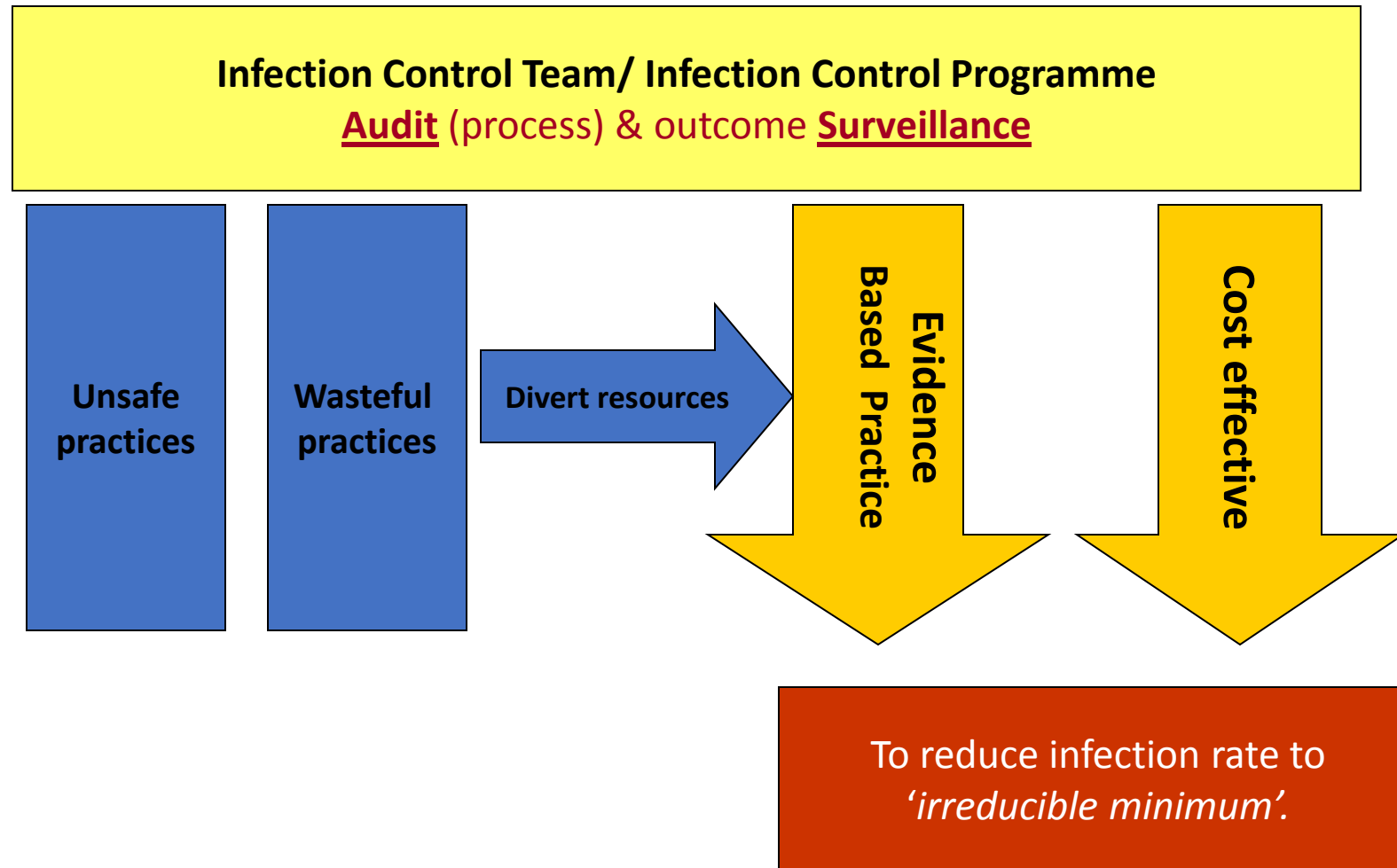


“Get All On Board”



**Review Of The Program And
Reward Your Team**

An approach to infection control in developing countries



**THE SECRET TO
SUCCESS IS TO
START FROM
SCRATCH AND KEEP
ON SCRATCHING.**

**MOTIVATED ONE MORE TO BE A
HEATHEN**

Thank you

Thank you

Thank you

MISSION SUCCESSFUL



CARIBBEAN INFECTION CONTROL WEEK
OCTOBER 15TH - 20TH



Infection Prevention and Control
"IT'S A TEAM THING"

Conference to be held on
October 16th, 2017
at
Ocean Terrace Inn P.O. Box
65 Wigley Avenue, St. Kitts and Nevis

Acknowledgements

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Next Webminar

October 10 – 2pm EST

- "Implementation of the IAAS Epidemiological Surveillance System in Colombia"
- Mrs Sandra Rivera – Instituto Nacional de Salud