

**Delivering IPC education systems for Africa- one size does not fit all!**  
**Prof. Shaheen Mehtar, Infection Control Africa Network**  
**Broadcast live from the New Zealand Infection Prevention and Control Nurses College**

**BROADCAST LIVE FROM**



**IPCNC CONFERENCE 2019**  
CHRISTCHURCH, NZ • 23 - 25 SEPTEMBER



## Delivering IPC education systems for Africa- one size does not fit all!

Prof Shaheen Mehtar  
*Infection Control Africa Network*

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September 24, 2019

## LMI Country Resources

- Major challenges within health systems
  - Inadequate finances- GDP spent on health very low in Africa
  - Clear association between sanitation and infant mortality (Global fund & World Bank)
  - Skills gap
    - No career path or specific training in IPC
    - Unable to identify outbreaks without surveillance
- Knowledge-
  - Community
  - HCW experience
- Training provided by institutions with rigid parameters- excludes many!

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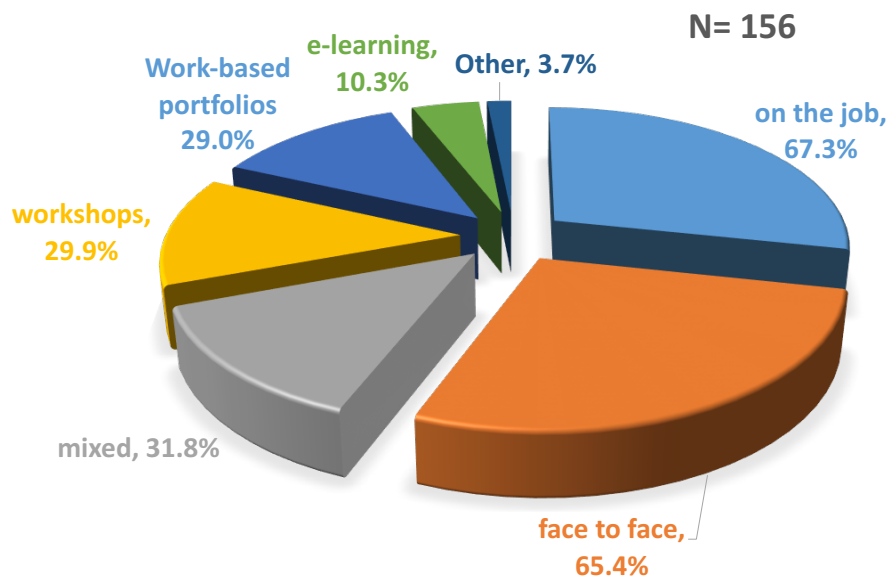
Is there a need for IPC and AMS training?

- An online survey using *SurveyMonkey*
- Questionnaire developed jointly ICAN/ BSAC
- 16 week period (2018)
- Replies= 263
- 92.3% agreed to participate
- Replies mainly from Anglophone countries
- Wanted more involvement in AMS - 238 (92%)

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## Training of HCW- how was training delivered?



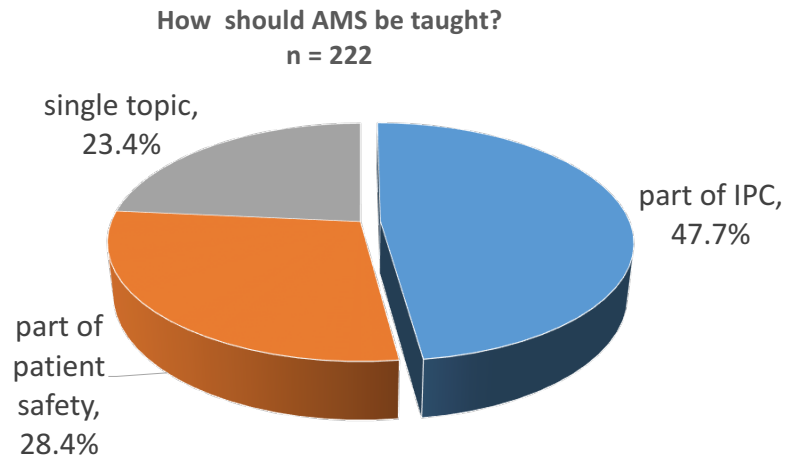
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## Education for Self in AMS

**Of 226 replies, 95.1% (n =216) wanted further training in AMS**



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## Challenges faced during delivery

- Cultural
  - Rote method of teaching and learning
  - Cannot tell an older person what to do.
  - Traditional and indigenous knowledge ignored
- Hierarchical
  - Inadequate knowledge of tutors never challenged
  - Seniors feel threatened by new information
- Language barriers
- Social and political instability
  - Conflict and war

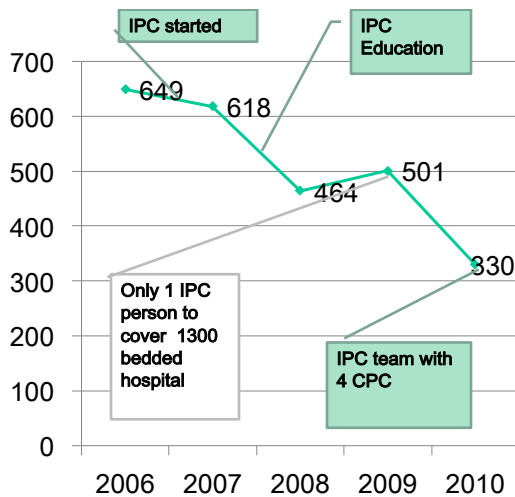


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**We train the managers!**



| Impact of IPC at TBH                     |                        | Maximum        |
|--|------------------------|----------------|
| 4 yr period                              |                        | R              |
| Year                                     | Infections avoided (n) | Cost (million) |
| 2007                                     | 31                     | 7.7            |
| 2008                                     | 154                    | 38.5           |
| 2009                                     | 47                     | 11.7           |
| 2010                                     | 171                    | 42.75          |
| <b>Total saving</b>                      | <b>356</b>             | <b>89</b>      |
| Cost per infection in ICU = Min R250,000 |                        |                |

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**Current IPC training in Africa**

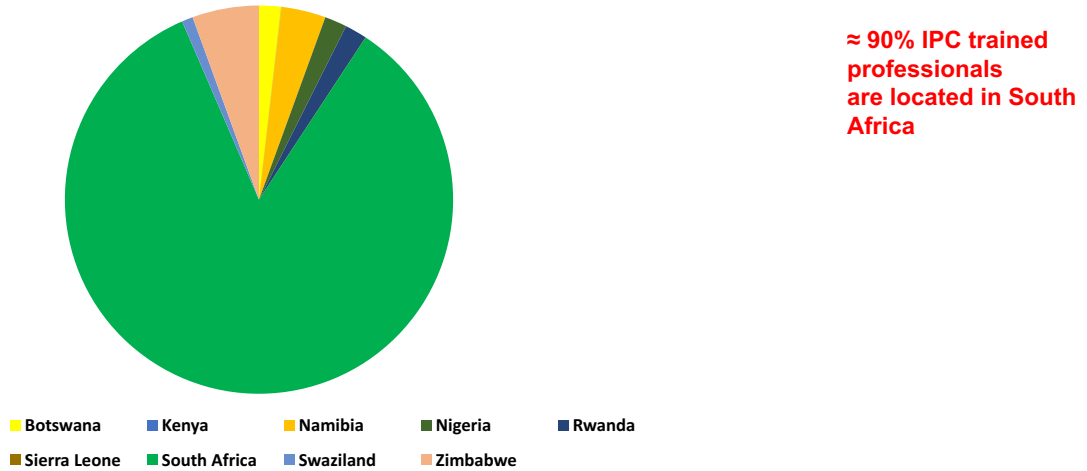
- Varied provision for healthcare delivery by province
- IPC is not recognised as a speciality in its own right
- No established career path in IPC which requires specialised training
- Considered a nursing speciality- doctors are not involved- therefore there are no teams as such!
- Research is limited- information gathering is considered intrusive and spying.
- Guidelines/policies are neither well advertised nor promoted

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## Distribution of trained IPC professionals in Africa per country (2005 - 2017)



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Courtesy Dr A Bulabula

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## Face-to-Face Training



- **Face-to-face is the most preferred training format in Africa**
- **Practical demonstrations necessary for clarification**
- **ICAN virtual learning via VIDEO- teleconferencing PLATFORMS, where lecturer and participants can see each other.**

Courtesy Dr A Bulabula

## Course structure

- Pre and post knowledge assessment
- Teaching structure
  - **Lectures** in the morning
  - **Clinical rounds** and visits in the afternoon
  - **Group discussion** followed by drafting a policy or SOP or guideline
- **Examination** – spots and MCQ
- Return to workplace and complete a **logbook and project** for each module
- **A WINNING FORMULA!**



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## HCW competence essential in outbreaks

- Highly experienced and confident
- Prepared to work long hours initially
- Strict compliance with IC and protective clothing policy
- Immune-competent staff
- Work efficiently without any dangerous shortcuts
- **You must KNOW WHAT YOU ARE DOING!**



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## Training in Ebola

- Back to basics!
- Sound knowledge about the mode of transmission will give confidence to treat EVD cases as they deserve to be treated
- Contact precautions
  - Single or isolation
  - Look after your hands- hand hygiene & gloves
  - Protection from splashes- gowns & face shield
- No need to spray with chlorine! Wipe only- if needed
- Manage linen with heat disinfection
- Manage waste with heat and/ or incineration

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## Peer Evaluation of TTT lectures

- Lectures prepared and given by trainers to their peer groups
- Adult education and have to present innovative means of knowledge transfer
- Peer evaluated according to set criteria.
  - Presentation skills
  - Scientific content
  - Interaction with audience
  - Answering questions
- Homework.
  - To train 5 HCW at place of work
 Tutors examine knowledge transfer.



| Topic                | Score (20) |
|----------------------|------------|
| Basic Microbiology   | 15         |
| Standard Precautions | 12.1       |
| Transmission based   | 14.3       |
| Risk assessment      | 14         |
| Clinical services    | 14.8       |

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## Train the Trainer course (SUN)

| Type to Test                   | Pre       | Post      | Increase in knowledge/speed |
|--------------------------------|-----------|-----------|-----------------------------|
| <b>Written test: max marks</b> | <b>50</b> | <b>50</b> |                             |
| <b>Allocated time ( min)</b>   | <b>30</b> | <b>30</b> | <b>NA</b>                   |
| Average Completion time (min)  | 30        | 14.7      | <b>15 minutes</b>           |
| Average score                  | 31.15     | 44        | <b>13 marks</b>             |
| % score                        | 62.30%    | 88%       | <b>25.70%</b>               |
| <b>Spots- Visual test</b>      | <b>20</b> | <b>20</b> |                             |
| (10 spots x2 min) max marks    | 13.2      | 15.8      | <b>3 marks (15%)</b>        |

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## ICAN- *Cape to Cairo* Education Programme

- We need to use all the available facilities to teach and improve knowledge in IPC
  - Verbal communication (face to face learning)
  - Electronic platforms
  - Mobile Phones and telecommunication
  - Social media
- Think of innovative ways of transferring knowledge!

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## Designing e- IPC education for Africa

### Advantages

- Interactive lectures - exciting
- Quizzes interspersed in the lectures – test of knowledge
- Movement within the talks
- Can learn in one’s own time and repeat if necessary
- Much more user friendly once you get used to it.
- Can be linked to an SMS programme
- Standardised measure of outcome

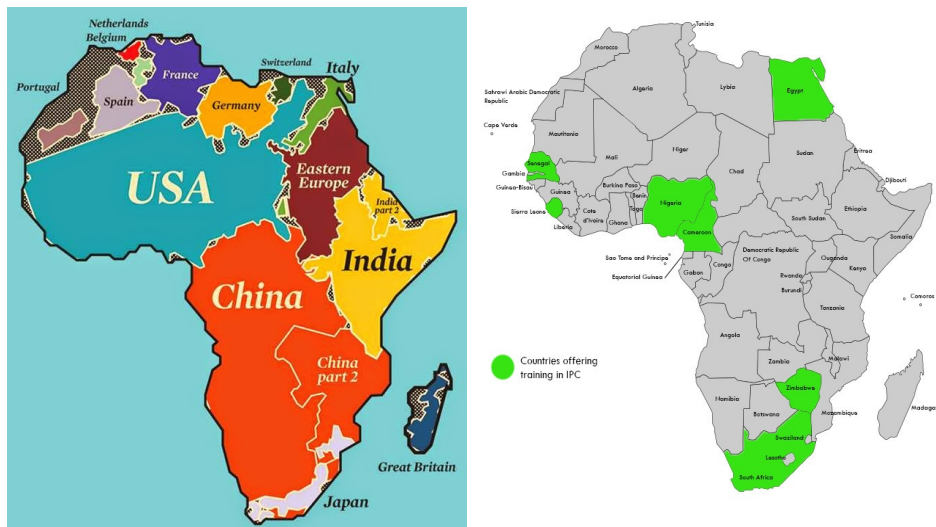
### Disadvantages

- Most learning in Africa is rote
- A very new concept in Africa for teaching IPC
- Access to the internet may be limited
- The programmes might be too big for the band width
- Unfamiliar territory
- May be resistance from learners
- Resistance from tutors

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## What is the true size of Africa?



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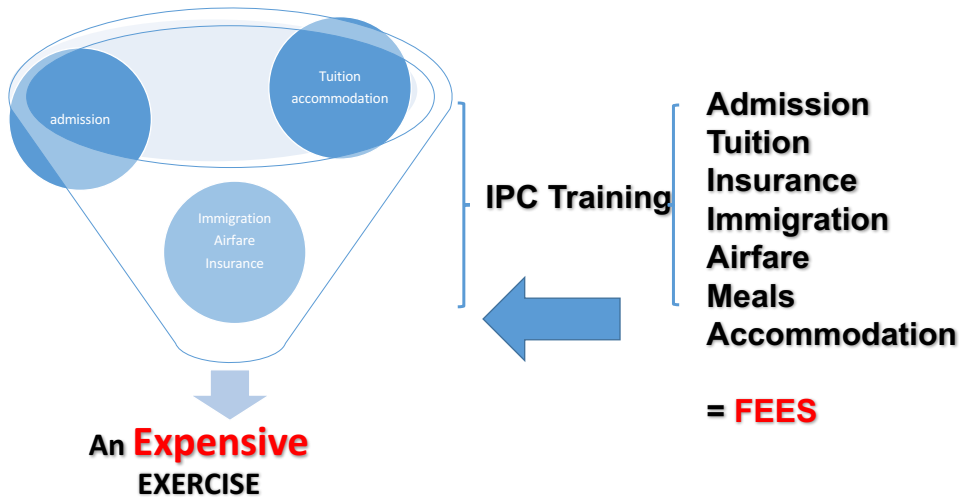
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ICAN/ SUN TEACHING IN AFRICA- 2005-2019



25 countries plus 2 outside Africa.

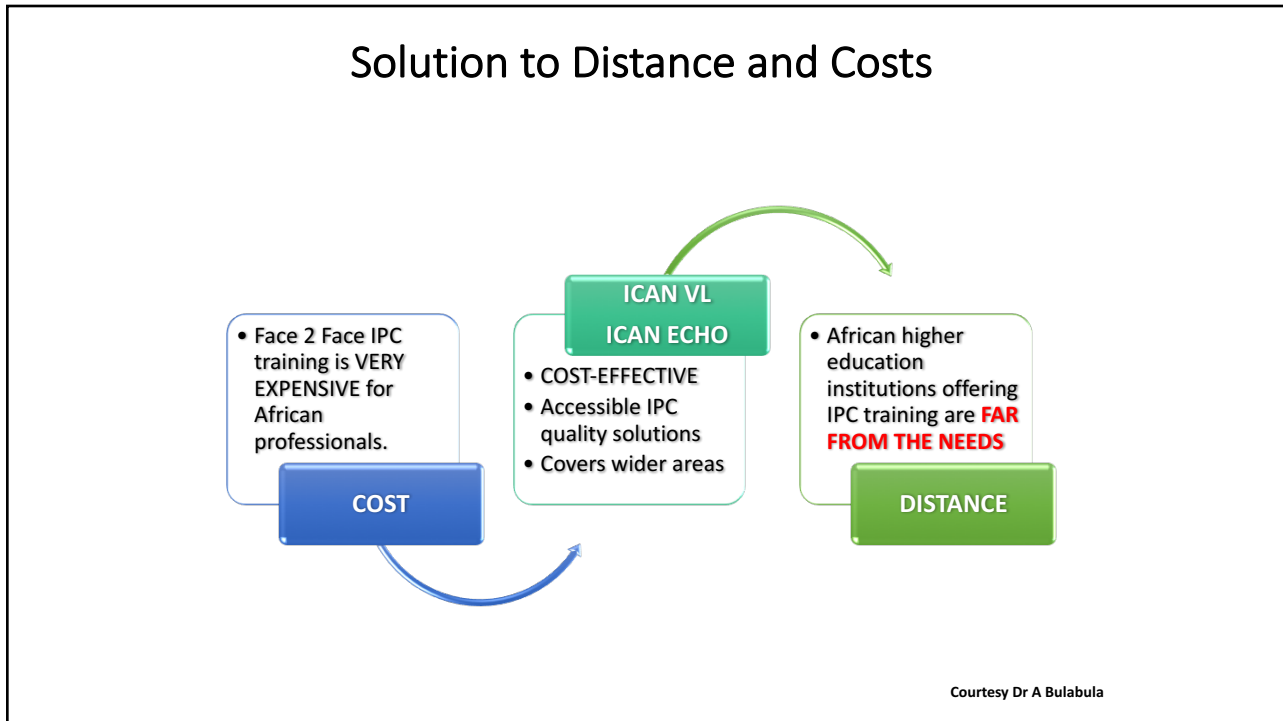
Face to face IPC TRAINING is expensive



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### ICAN – VIRTUAL LEARNING : Hub and Nodes

VIRTUAL LEARNING

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Login

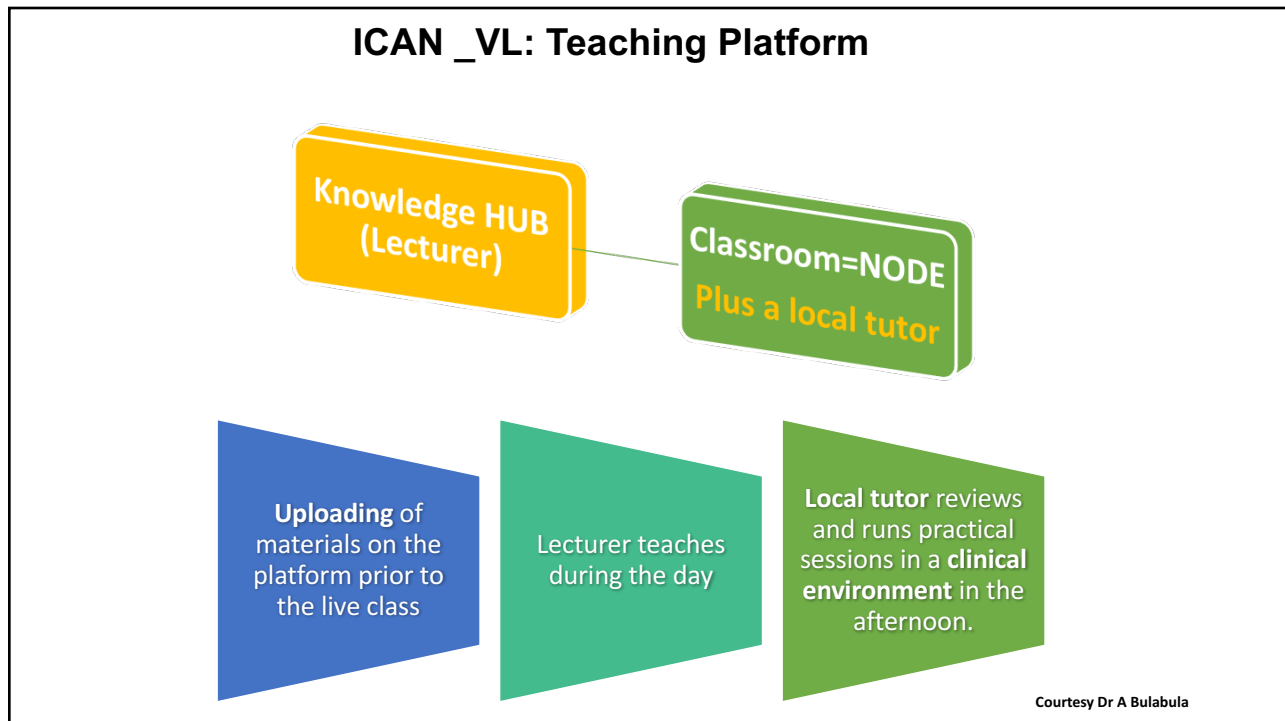
**WELCOME TO ICAN VIRTUAL LEARNING**  
PLEASE LOGIN ABOVE OR REGISTER TO CONTINUE

Infection Control  
**ICAN**  
Africa Network

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### ICAN –VL Participating countries

**Burundi** (University of Burundi – Research and Innovation Centre)  
**Cameroon** (Cameroon Baptist Convention Health Services)  
**Sierra Leone** (Njala University and Freetown)  
**DRC:** setting up IPC training for EVD teams IN 2020

Two photographs are shown side-by-side. The left photo shows a presentation screen displaying a slide with text and images, with a laptop in the foreground. The right photo shows a group of people sitting at tables in a classroom, looking towards a screen at the front of the room.

**Uni of Burundi- attending virtual classes**

**For the 4 nodes, +/- 150 participants attended the inaugural BASIC IPC topic lectures**

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## Demonstrations incorporated into the e-learning programmes



- Principles of vacuum and entry of steam in a steam sterilizer



- Checking the same parameters on a functioning sterilizer

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## Case based learning



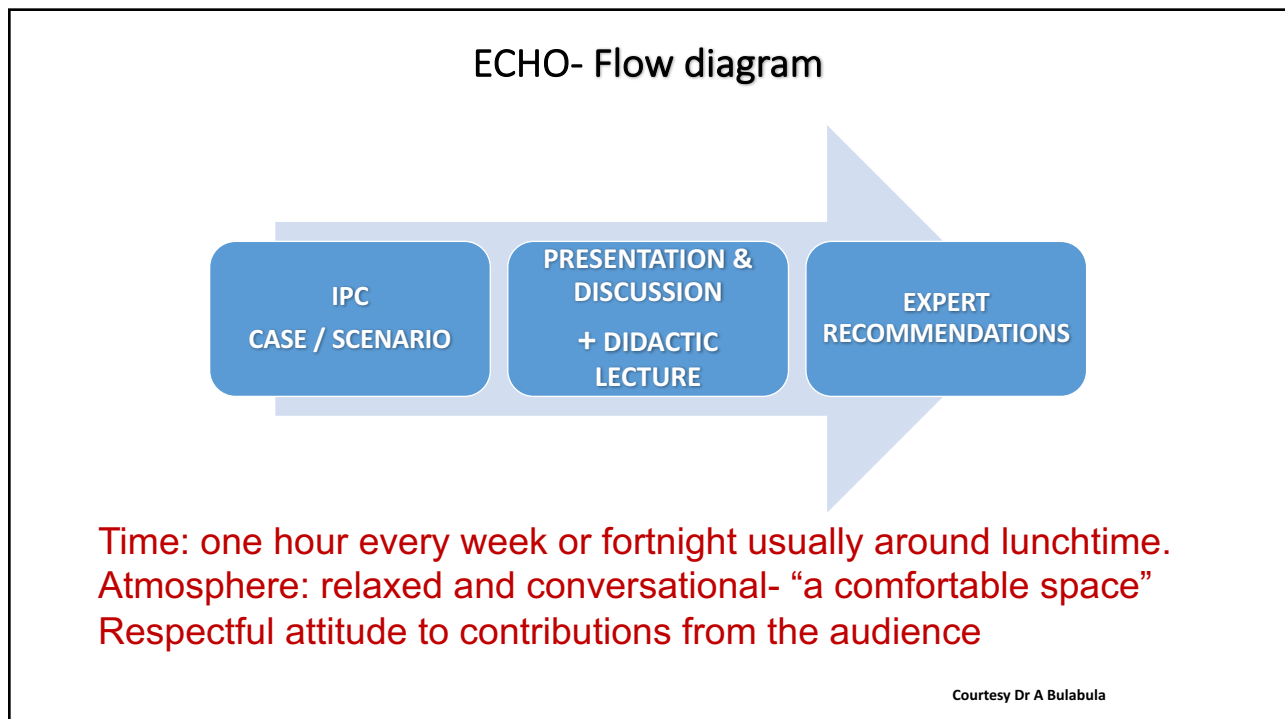
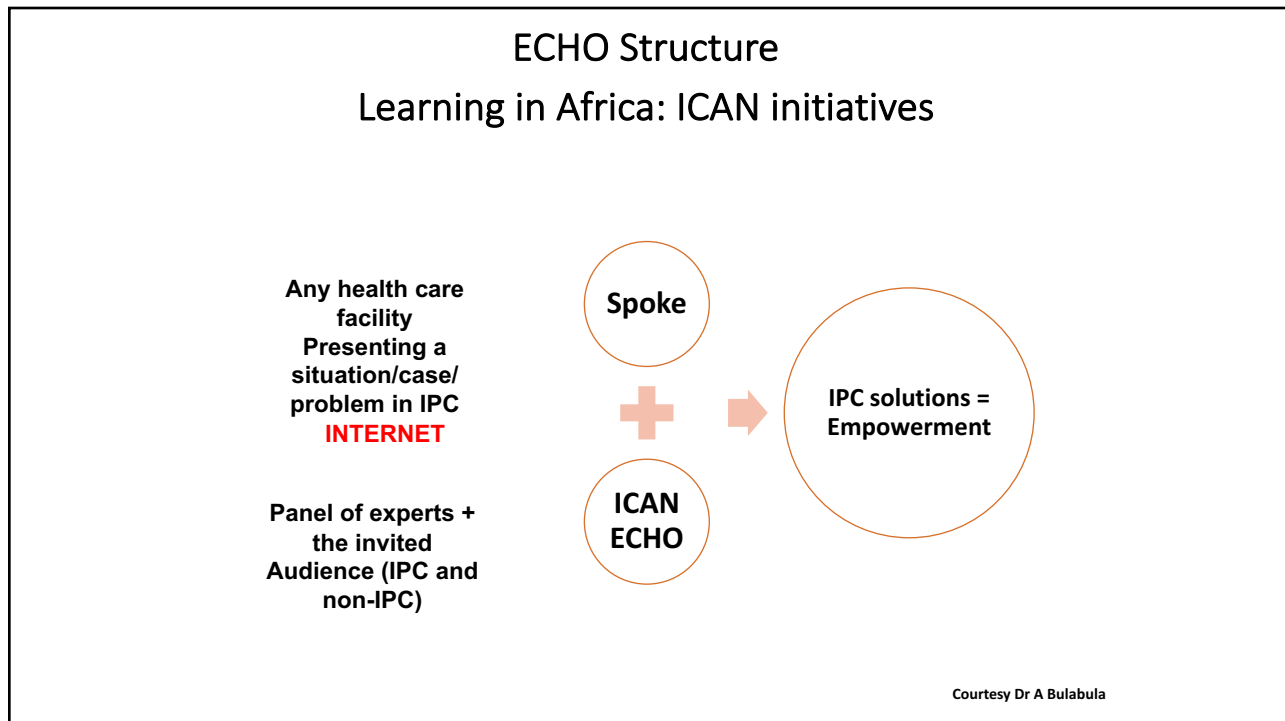
### ICAN ECHO IPC

First IPC ECHO programme globally!  
A multi-country ECHO program in IPC

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**ICAN ECHO IPC Teleclinic session**

**Didactic Lecture**

**Types of wound infection**

- Caesarian section risk – endometritis, necrotising fasciitis

Courtesy Dr A Bulabula

**Examples of clinical cases**

| Examples of IPC cases presented  | Didactic lectures   |
|--|---|
| BSI with <i>Candida parapsilosis</i> in neonates                       | <i>Candida parapsilosis</i> –<br>Prof Shaheen Mehtar                  |
| <i>Proteus mirabilis</i> in caesarean section                          | Caesarean SSI –<br>Dr Anne Eastaway                                   |
| Needlestick injury - Occupational Malaria                              | Malaria as Occupational Disease –<br>Dr Jack Meintjes                 |
| BSI with MRSA and <i>Enterococcus faecalis</i>                         | <i>S. aureus</i> : What’s the fuss... -<br>Prof Andrew Whitelaw       |
| Lessons learned from a pseudo outbreak of <i>Burkholderia gladioli</i> | Pseudo-outbreak of <i>Burkholderia cepacia</i><br>Prof Shaheen Mehtar |

Courtesy Dr A Bulabula

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**Examples of non clinical cases**

| Example of ICAN ECHO Talk series                               | Presenters                              |
|--|---|
| Implementation of IPC bundles                                  | Sr Marina Aucamp, South Africa          |
| IPC, what is the place of lab capacity? Case of Kenya          | Sr Loyce Kihungi, Kenya                 |
| The state of WASH/IPC in Cameroon                              | Mr Jacob Nkwaan, Cameroon               |
| Progress on IPC/WASH in Tanzania, Opportunities and Challenges | Dr Hokororo / Mr Robert Mussa, Tanzania |
| MDRO spread in a Tunisian Hospital                             | Prof Basma Mnif, Tunisia                |
| IPC in Ebola Virus Disease: the reality in Africa              | Prof Shaheen Mehtar, S Africa           |

Courtesy Dr A Bulabula

**Participating countries from Africa**



**The 5 AU regions have been participating in ICAN ECHO IPC**

**11 countries from all AU regions participate**

**More than 100 participants ICAN ECHO IPC sessions**

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**IMPACT**

Knowledge transfer

Help in addressing emergencies: outbreaks

Wide network of hospitals in different countries

**Growing interest in IPC discussions Africa wide**

In DR Congo, ICAN ECHO sessions have helped the local team to control a large *Klebsiella pneumoniae* outbreak in an NNU

**Participating countries have found a non judgmental space to share challenges and find solutions from peers in just an hour per week**

Courtesy Dr A Bulabula

### Next Steps

Establish an ICAN ECHO Outbreak Response Network “on call”

ICAN ECHO .....

ICAN ECHO ....

**Lecture series on most relevant IPC matters for Africa- 2020**

Project  
**ECHO**<sup>®</sup>

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## Measuring knowledge improvement

- Pre and post assessment- written
  - Multiple choice questions
  - Pairing of questions and answers
  - True or False
  - Short answers
- Spots: (2 min each)
  - A child with MDR-TB. Comment on this slide from an IPC point of view.

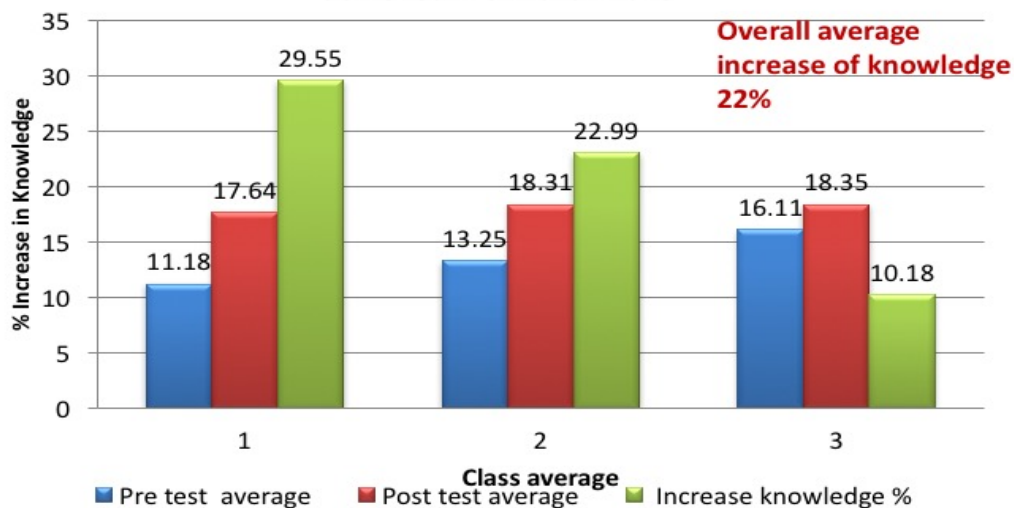


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## Pre and post assessment of IPC training

Sierra Leone IPC HCW training Increase in Knowledge achieved 2-6 March 2015



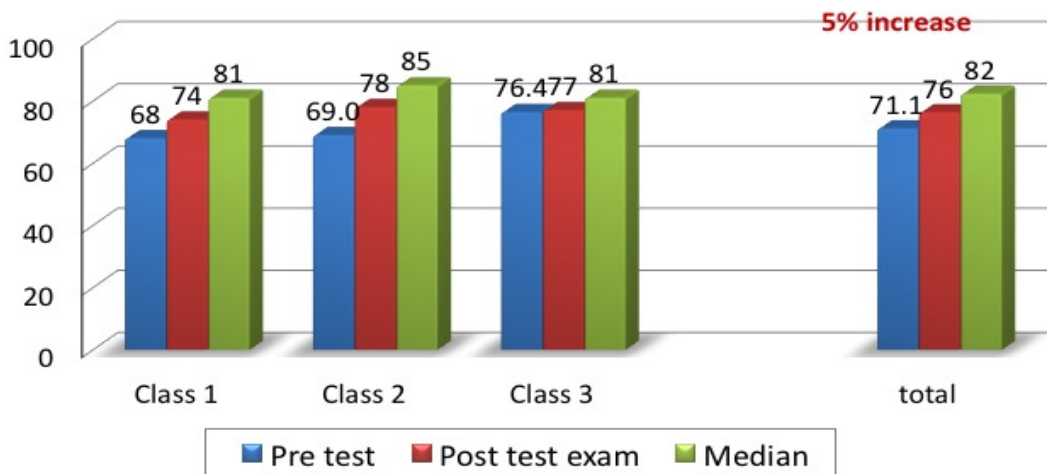
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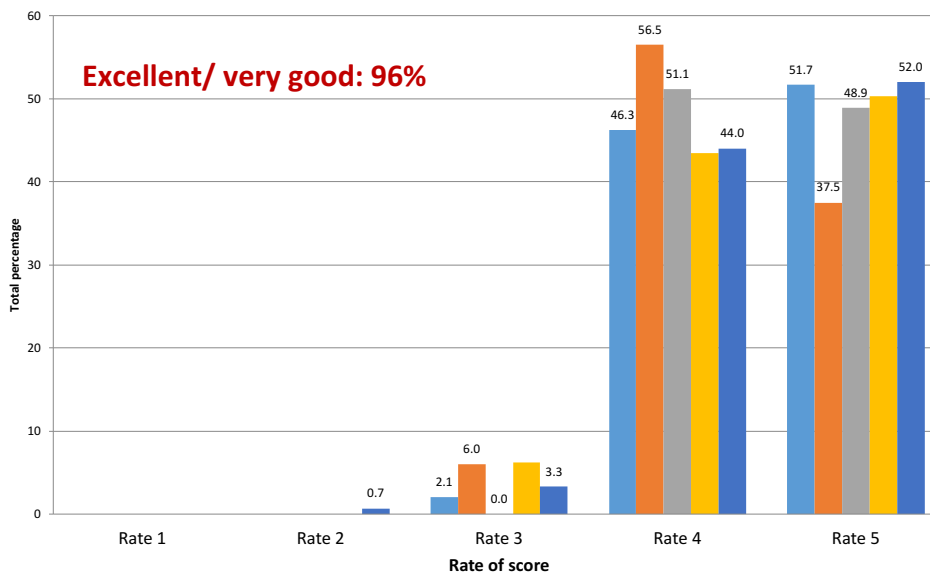
**Assessment second round of training- av. increase from 13% to 72% at pre test level**

**Pre- and Examination average  
 19-30 October 2015**



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**SL HCW IPC TRAINING – student evaluation of tutors,  
 2015- n=25**



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## Measurable outcomes that can be done on line

- Pre assessment
  - Provision
  - Knowledge
  - Application of knowledge in clinical practice
- Intervention- training, videos, ECHO
- Post assessment
- Certificate of Competence

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## What should be incorporated in education for LMI countries

- Social and cultural context is important
- Good robust guidelines- easy and simple to follow
- Provision- water, hand wash system, alcohol rub
- How to work safely when provisions are not available
- Accountability- Link nurses, managers
- Surveillance (simple) associated with HAI & AMS



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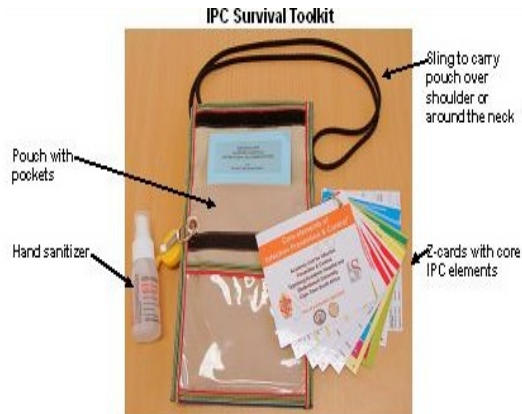
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## Constant reminders

**NOW BEING CONVERTED INTO A SMART PHONE APP**

### IPC Survival Kit

- All clinical healthcare workers underwent a 5 day Basic IPC training course
- Covered the *Core Elements of IPC*
- Issued with the IPC kit as a reminder and a personal reference.
- **Very useful for the Link Nurses**



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## Converting information in to apps- easy access

<http://apps.who.int/iris/handle/10665/250232>



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<https://play.google.com/store/apps/details?id=com.ionicframework.decontamination851011> .  
 OR go to the Apple store and use this link to download it <https://appsto.re/gb/vvalfb.i>, or look for "ICAN Decontamination".



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# WELCOME! And thank you!



## 8th ICAN Congress

Infection Control Africa Network

### 23 – 26 August 2020

Century City Conference Centre  
Cape Town | South Africa

INFECTION PREVENTION AND CONTROL (IPC) AND PATIENT SAFETY

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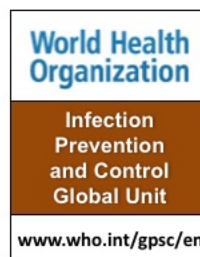
The screenshot shows the homepage of the Infection Prevention & Control Nurses College NZNO. At the top left is the IPC logo. A navigation menu includes Home, About Us, Members, Forum, Education, Resources, News, Contact Us, Join Us, and Login. A search bar is located on the right. A large banner features the URL [www.infectioncontrol.co.nz](http://www.infectioncontrol.co.nz) over a background of blue bacteria. Below the banner, there are sections for a Māori greeting, a notice about the Phoenix Rising IPCNC Conference 2019, and a 'Latest Measles numbers from ESR' section. On the right side, there is a 'LATEST NEWS' section with a Facebook icon and two news items: 'Largest New Zealand measles outbreak for two decades on political agenda' and 'CDC publishes Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings'.

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| <a href="http://www.webbertraining.com/schedulep1.php">www.webbertraining.com/schedulep1.php</a> |   |
|--|---|
|  | <p><a href="#">POSITIVE DEVIANCE AND HAND HYGIENE: WHAT CAN WE LEARN FROM THE BEST?</a><br/>           Speaker: <b>Josiane Létourneau</b>, University of Montreal</p> <p>September 26, 2019 <i>Sponsored by GOJO Canada</i></p>  |
| October 3, 2019  | <p><a href="#">BEWARE OF DRY BIOFILMS: THE NEXT CHALLENGE IN INFECTION CONTROL</a><br/>           Speaker: <b>Prof. Jean-Yves Maillard</b>, Cardiff University, Wales</p>   |
| October 10, 2019   | <p><a href="#">ENDOSCOPE REPROCESSING: PARADIGM SHIFT</a><br/>           Speaker: <b>Dr. Michelle Alfa</b>, University of Manitoba</p>  |
| October 16, 2019   | <p><i>(South Pacific Teleclass)</i><br/> <a href="#">SELF-REPORTED BEHAVIORS AND PERCEPTIONS OF AUSTRALIAN PARAMEDICS IN RELATION TO HAND HYGIENE AND GLOVING PRACTICES IN PARAMEDIC-LED HEALTHCARE</a><br/>           Speaker: <b>Prof. Nigel Barr</b>, University of the Sunshine Coast, Australia</p>          |
| October 24, 2019   | <p><a href="#">INFECTION CONTROL ISSUES IN HEALTHCARE CONSTRUCTION, PART 2 – NEW BUILDINGS</a></p>  |

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