



### Strengthening IPC Structures Through Education Capacity Building in Africa

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October 12, 2017



#### **Objectives**



- 1. How to set up education programmes with low resources
- 2. What, and where, to start such programmes
- 3. How does one measure progress of such education systems
- 4. Why high income systems don't always work in LMICs

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### Challenges in setting up education programmes in IPC in Africa



- Level of basic education (primary and high school) is varied
- Learning is by rote; critical thinking is not well developed
- Difficult to understand concepts where there is a lack of infrastructure
- Irregular access to the internet; self learning is limited
- Little or no access to current literature
- Adopting concepts and guidelines from other countries without being able to adapt them locally
- Few publications from Africa (now improving) to inform local guidelines
- Irregular supply of water and electricity (WASH inadequate)

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#### LMI Country Resources- challenges

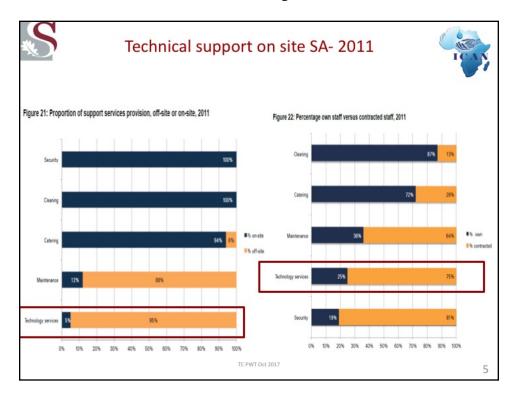


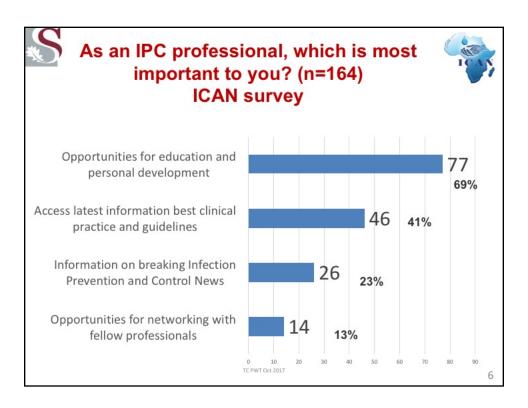
- Inadequate finances for health
- Ignorance leading to wastage of limited resources
- Clear association between sanitation and infant mortality (Global fund & World Bank)
- Skills gap in IPC
- · Indigenous knowledge ignored
  - Community
  - Past HCW experience
- HCW have permanent posts with little or no accountability

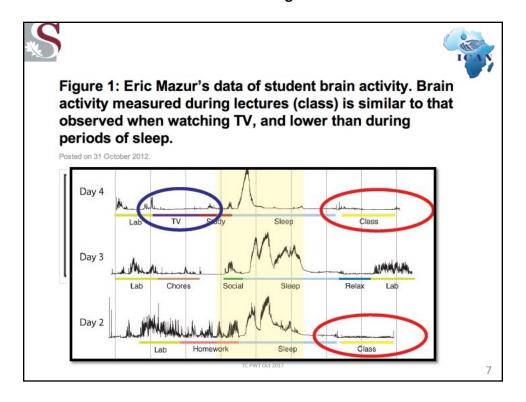


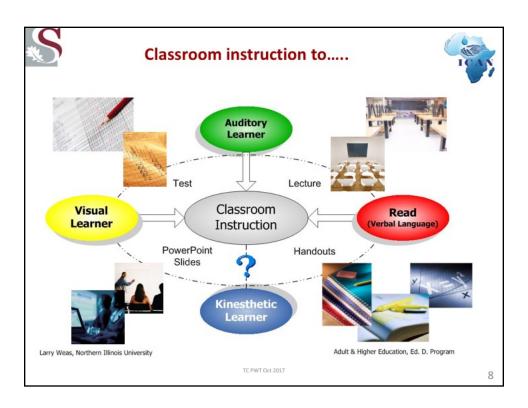
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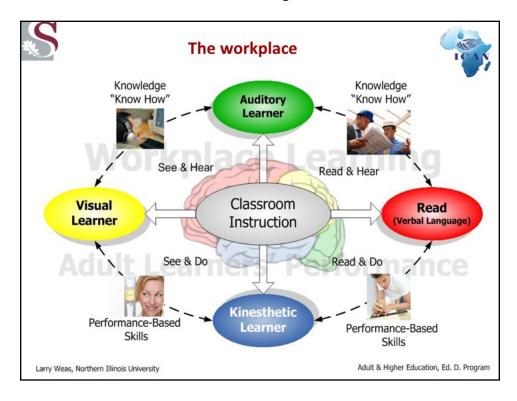


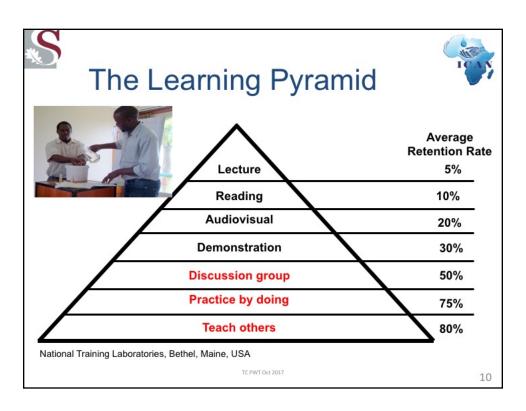


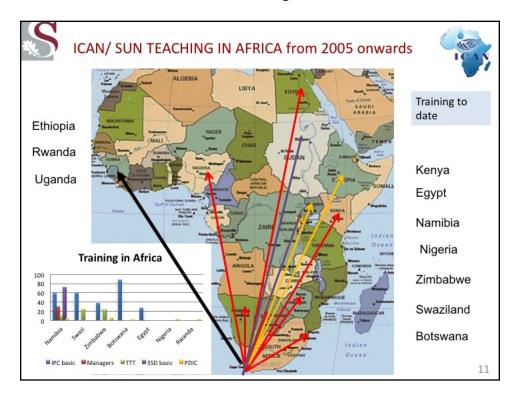




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#### Current IPC training in Africa



- 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!
- Surveillance: information gathering is limited
- Guidelines and policies are neither well advertised nor promoted
- The WHO Core Components (2016) recommends the <u>"presence of a fully trained IPC practitioner for 250 acute beds"!</u>

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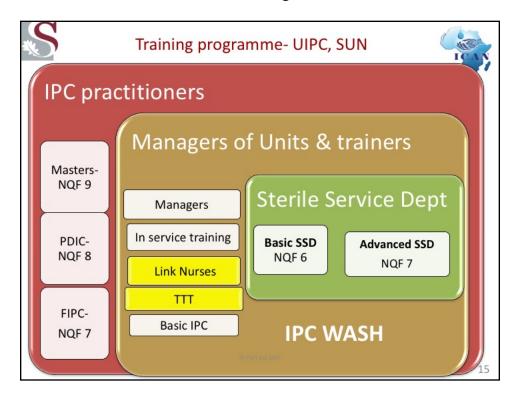
#### Types of training offered



- Classroom teaching- face to face
- E- learning platform across Africa
- Skills development practical classes for all cadres of health staff
- Train the trainers (Master Trainers)
- Managers courses
- Capacity building and knowledge transfer to communities
- Developing guidelines and apps specifically for Africa's needs

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#### **Face to Face Teaching**

#### Disadvantages of face to face

- Close relationship develops between tutors and within the
  - class networking
- Revision when necessary
- Modification of method of teaching if necessary
- Demonstrations and visual teaching is understood better
- Expensive for both students and faculty
- Time consuming
- Short term engagement
- Routine and sometimes boring
- Tutor dependent transfer of knowledge

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#### IPC Course structure that works

- 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 a project for each module- applying knowledge to the work place



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### **Barriers to teaching**



- Cultural
  - Do not argue with elders (teachers)
  - Cannot say how much you know
  - Cannot tell an older person what to do.
  - accept what one is told without question
- Hierarchical-
  - "I cannot question the boss"
  - "I AM THE BOSS!"
- Language- different words mean different things!

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#### EVD in Africa- using indigenous knowledge





- · Learn from the community
- There is indigenous knowledge which is not used
- Include them in the solution do not always think of them as the problem
- The elders and others are wise & experienced



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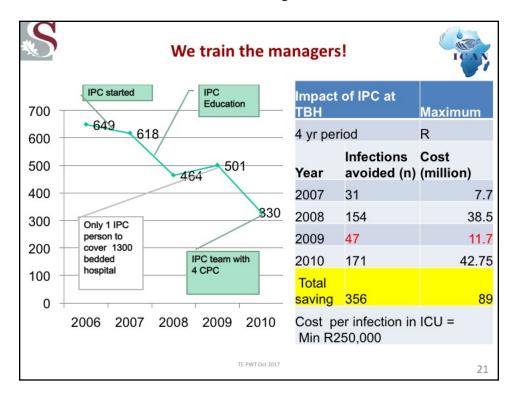
#### **Barriers to learning-cultural**



- Hierarchal barriers
  - "What you learnt in class stays there!! Here you do what you are told!"
  - "Why do I need to know this? It is not my job"
- Despite knowledge in IPC difficulty in maintaining standards due to lack of resources
- Will not advise superiors- do not want to appear aggressive or a show off
- So,

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#### Cost of an IPC programme



- In the USA, a reduction of only 6% would off set the cost IPC by saving on reduced hospitalisation.
- BSI are the highest costing HCAI of all the types of infection
- Cost in India of BSI infection in a cardiac hospital cost \$15000 more per patient compared with those that did not develop infection.

Hussein et al. Globalization and Health 2011, **7**:14 http://www.globalizationandhealth.com/content/7/1/14

- ABHR introduction at point of use and other costs = \$23.7 saved for every \$1 spent . (Chen Y, Sheng W, Wang J, et al. PLoS One 2011;6:e27163)
- ABHR is less costly and greater compliance.
- Communicating (feed back) relating to HH activities and encouraging each other increased compliance (p<0.01)</li>

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#### Change the method of information delivery



- Change from extensive written documentation to visual demonstration
- Increase face to face discussion to clarify which requires well trained tutors!







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#### **Barriers- literacy (LMIC)**



- Few healthcare workers have access to the internet at work in LMI countries.
- They do not have easy access to libraries or the written word
- They rely on guidelines from national sources which they neither understand nor can they fully implement
- · Overworked and do not have time to read
- Need visual pictorial reminders preferably made by the IPC practitioners or community
- GIVE THEM CONCEPTS AND LET THEM BE IMAGINATIVE!-
- OWN THE VISUAL MATERIAL!

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#### Train the Trainer course



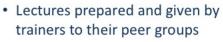
- Selection- wants to teach and has passed the basic IPC course with good marks
- Course structure
  - Taught how to teach adults (applying principles)
  - Will return to place of work and train a minimum of 5 students
- Examiners will visit workplace and
  - examine the 5 students taught (50% transfer of knowledge required)
  - Evaluate training material used to teach students
  - Hours of training
  - Pre and post assessment of student knowledge
- If the students get 50% or more, the Tutor will get a certificate of competence (TTT)
- If not, then the Tutor will only get a Basic IPC course certification.
- The students will be certified by their local institutions

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#### Peer Evaluation of TTT lectures

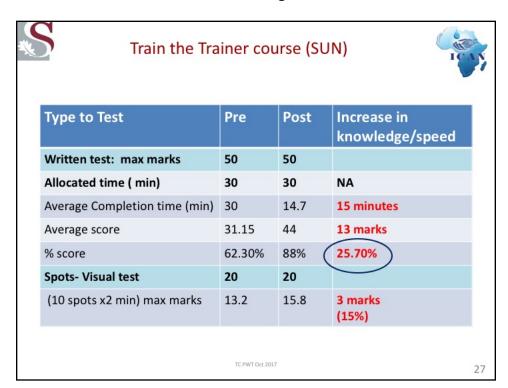


- Adult education and have to present innovative means of knowledge transfer
- Peer evaluated according to set criteria.
  - Presentation skills
  - Scientific content
  - Interaction with audience
  - Answering questions



	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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#### **Training in Ebola**



- 263 healthcare workers trained in IPC by ICAN
- 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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### HCW competence - essential



- · 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
- One must KNOW WHAT ONE IS DOING!





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#### HCW Cases at KGH vs Other Facilities (Total N = 77)



	KGH N (%)	Other N (%)	Total N (%)
Non-Ebola Ward	46 (74)	15 (100)	61 (79)
Ebola Treatment Center	13* (21)	0 (0)	13 (17)
Annex	3 (5)	-	3 (4)
Total	62 (100)	15 (100)	77 (100)

\*6 not infected in the Ebola ward

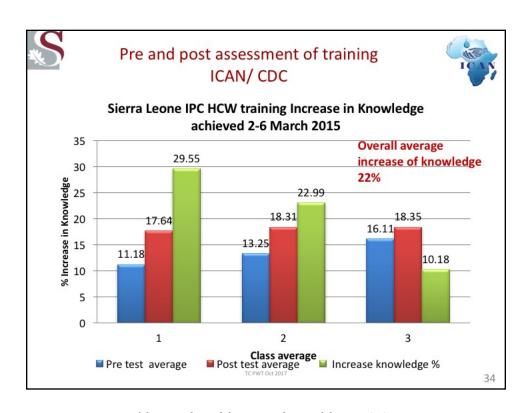
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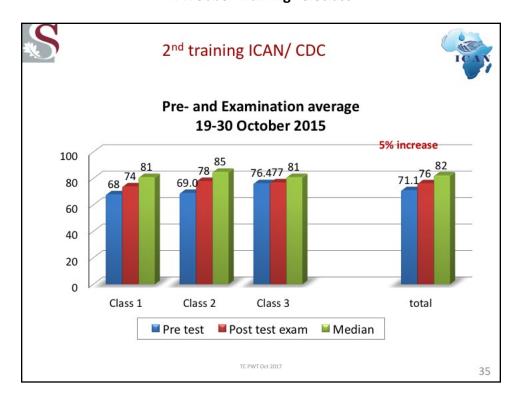


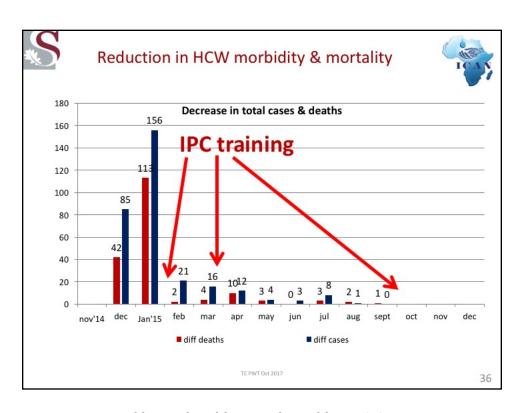
Characteristic N= 493	Single Cl <sub>2</sub> exposure (N=285) (57.8%),	Multiple Cl <sub>2</sub> exposure (N=208) (42.1%)	p-value
Eye sight problem before	19 (6.7)	25 (12.1)	0.04
Eye sight problem now	95 (33.6)	123 (59.1)	0.001
Difficulty in breathing	66 (23.0)	100 (48.1)	<0.001
Chest tightness	109 (38.2)	131 (62.9)	<0.001
Burning throat	85 (30.0)	112 (53.9)	<0.001
Skin irritation	95 (33.6)	109 (52.4)	€0.001

S	Using PPE by	Using PPE by HCW			
PPE in HCW	n= 493				
used	always	sometimes	never		
eye	405	73	16		
%age	82.1	14.9	3.2		
skin & mm	447	2	4.5		
%	90.6	0.4	9.1		
				33	

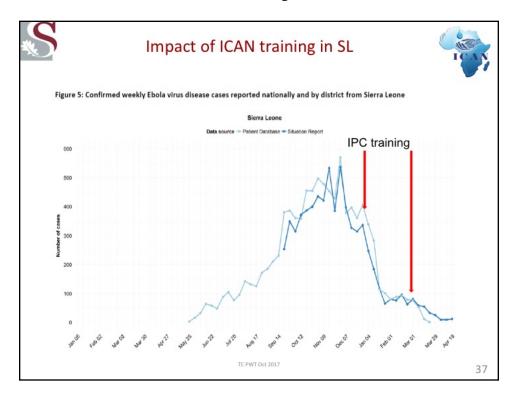


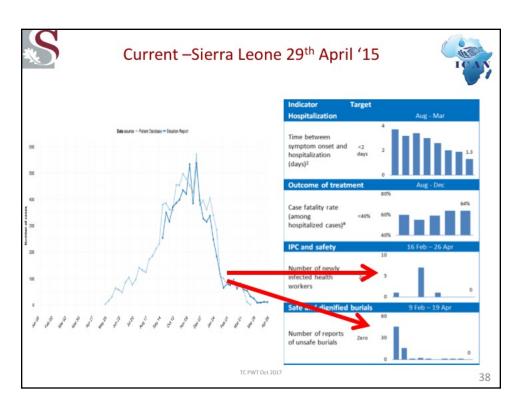
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#### ICAN programme

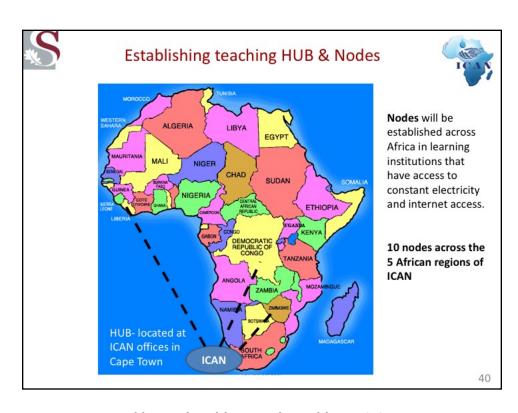


- ICAN teleclasses
- Teleclasses in partnership with Webber Training Inc to provide the Basic IPC course for ICAN members
- Knowledge hubs and nodes Setting up training hub and nodes across Africa.

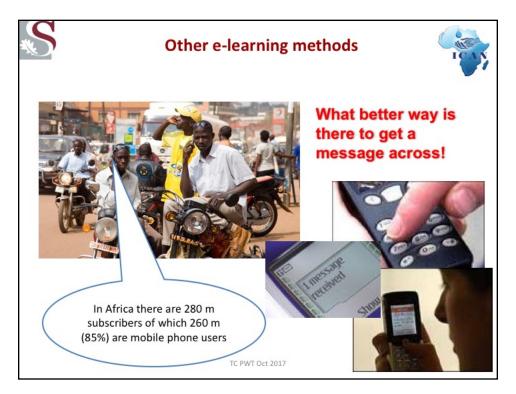
Reduce of cost of training



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#### e- IPC education for Africa



#### **Advantages**

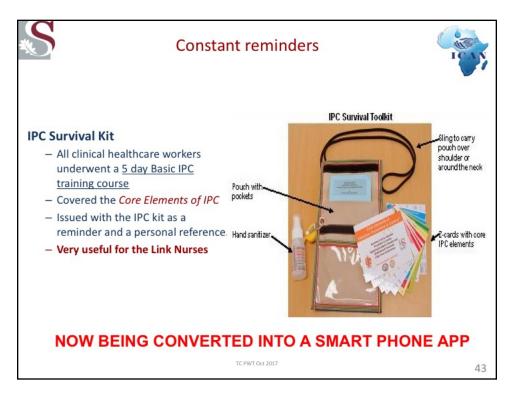
- Interactive lectures exciting
- Quizzes interspersed in the lectures – test of knowledge
- Movement within the talks
- Can learn in one's own time and repeat if necessary
- Much more user friendly once you get used to it.
- Can be linked to an SMS programme
- Standardised measure of outcome

#### **Disadvantages**

- New concept for IPC
- Access to the internet restricted
- The programmes might be too big for the band width
- Unfamiliar territory
- May be resistance from learners
- Resistance from tutors

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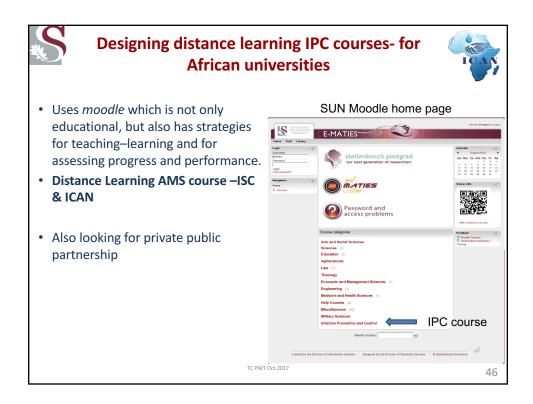
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#### Feedback



- No learning without feedback!
- Contemporary education provides little feedback
- · Build in feed back into all courses
- · Students must be able to evaluate tutors and studying conditions.



Hattie, J., & Timperley, H. (2007). The power of feedback. Review of Educational Research, 77, 81-112.

### The team approach!



- (a) mutual trust,
- (b) Respect for colleagues
- (c) empowering employees
- (d) shared responsibilities.

Interdisciplinary health professions education must be incorporated into the formal curriculum of all health disciplines.





A mixed group of students- FIPC TC PWT Oct 2017





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#### Finally.....



- "The current approach to educating and training our health care providers has outlived its effectiveness and utility.
- With the growing complexity of health care and the accelerated pace of accumulation of knowledge, significant reform of health professions education is required".
- "For LMI countries we should encourage
   Multi modal approaches (which are culturally sensitive to sustain effect)
   Educational intervention could be extremely cost effective Educating healthcare workers to optimal (hand hygiene) practices is effective."

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#### What actions can be taken



- · Apply activities which take less funding
- Better and cost effective outcomes
- Put effective structures into place.
- Most important
  - Knowledge
  - Reduce waste by reducing cost of HAI, environmental cleaning, purchasing poor quality items
  - Donations- be careful what you wish for?
  - Reinvest what has been saved by reducing HAI

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#### Think outside the box.....



- While there will be shortages, well trained IPC practitioners and HCW can think "outside-the-box" and deliver healthcare reasonably safely for patients and themselves
- Understand the community and work closely with them
- Need to reassess teaching methods in LMIC using more innovative ways of getting the message across- A WhatsApp IPC group in SL!

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#### Clinical Shield of Excellence in IPC

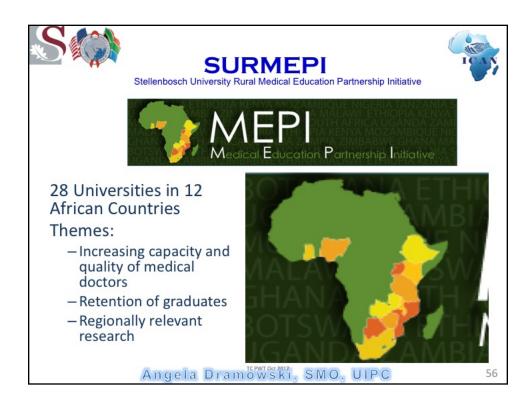


- Education in IPC is provided to 2000 employees annually and reinforced via the Link Nurse programme
- Each ward at TBH is evaluated annually using the following criteria
  - HAI rates;
  - Provision for IPC; e.g. hand hygiene, PPE;
  - Standard precautions in place;
  - Transmission based precautions in place;
  - Number of staff trained in IPC;
  - Link nurse programme.
- Outcome is a reward of proudly carrying the shield for a year plus two runner up wards



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MBChB graduate survey: IPC curriculum II				
Question n = 181	Agree totally/ strongly	Agree	Disagree/quite strongly	
IPC is important	82.9%	17.1%	0%	
Adequately covered in curriculum?	not at all/inadequate %	basic %	adequate /comprehensive %	
Sharps disposal	4.5	7.9	87.7	
Hand hygiene	5	12.7	82.3	
Aseptic procedures	7.9	15.3	76.8	
Use of PPE	7.9	17.9	74.3	
Transmission-prec.	10.8	22.6	66.6	
Decontamination	11.1	22.9	66	
Waste management	19.4	28.9	51.8	
IPC policies	28.5	39.7	31.8	
HCW behav. change	28.2	37.9	33.9	
Occup. health	34.4	39.4	26.2	

Medical education in IPC: proposed SU model					
MB 1	MB 2	MB 3	MB 4	MB 5	MB6
Foundat	ion phase	Early clinical	Middle clinical	Late Clinical	
	ching in <b>modules</b>	IPC teaching in skills laboratory  OUTCOME:  applies IPC principles to clinical scenarios & attains IPC clinical skills		Integrated IPC teaching in clinical disciplines	
OUT	COME:			OUTC	OME:
princ	tands IPC iples & nology			s evaluates healthcar services & reduces clinical risk by application of IPC principles	
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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
- Start IPC training in undergraduate curriculum (example: Sierra Leone.



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#### Conclusion



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

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V	vww.webbertraining.com/schedulep1.php
October 17, 2017	(FREE South Pacific Teleclass - Broadcast live from the 2017 IPCNC conference) HAND HYGIENE PROGRAM SUCCESSES IN MEMBER COUNTRIES OF THE INICC Speaker: Dr. Victor Rosenthal, Founder and Chairman, International Nosocomial Infection Control Consortium (INICC), Buenos Aires, Argentina Teleclass broadcast sponsored by Schülke (www.schuelke.com)
October 26, 2017	INFECTION CONTROL IN PARAMEDIC SERVICES  Speaker: Jennifer Amyotte, City of Greater Sudbury Paramedic Services, Canada
October 31, 2017	(FREE European Teleclass) INFECTION PREVENTION CHALLENGES AMONG HOSPITALIZED CHILDREN AND NEONATES IN AFRICA Speaker: Prof. Dr Angela Dramowski, Stellenbosch University, Cape Town
November 9, 2017	CLEANING THE GREY ZONES OF HOSPITALS: LESSONS FROM A COMMUNITY-BASED TEACHING HOSPITAL Speaker: Prof. Makeda Semret, McGill University, Montreal
November 21, 2017	(European Teleclass) THE ROLE OF RAPID DIAGNOSTICS IN PREVENTING HEALTHCARE INFECTION Speaker: Dr. Hilary Humphreys, The Royal College of Surgeons in Ireland

