Improving Emergency Care in Resource Constrained Health Facilities in Uganda:

Experience of the Integrated Infectious Disease Capacity Evaluation Project (IDCAP)

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IDCAP aims

1. Develop an integrated curriculum for non-physician clinicians on TB, HIV, malaria, and related infectious diseases
2. Test the impact of the core training and distance learning on individual competence and clinical performance.
3. Test the impact of on-site support on clinical performance
4. Evaluate the cost-effectiveness of the intervention
Randomized study

18 control sites:
• core infectious diseases training and distance learning

18 intervention sites:
• core infectious diseases training and distance learning plus:
  – on-site clinical mentoring
  – on-site multidisciplinary team training
  – on-site quality improvement support
IDCAP Evaluation Design

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<th>Year 1</th>
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<td><strong>Phase 1</strong>&lt;br&gt;Sites 1–18</td>
<td><strong>Mid-Level Practitioner Training</strong>&lt;br&gt;On-site support</td>
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<td><strong>Mid-Level Practitioner Training</strong></td>
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<td><strong>Quarterly visits and on-going data collection</strong></td>
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Study hypothesis

1. Integrated infectious disease training can prepare mid-level practitioners to perform key clinical tasks corresponding to infectious disease competencies at acceptable standards
   • Unit of analysis = Trainee
   • Research Design – Pre/Post Comparison to Standard

2. On-site Support Services (OSS) consisting of multidisciplinary team training and Continuous Quality Improvement activities significantly improve clinic performance
   • Unit of analysis = Site
   • Research Design – Random assignment to start date
Site inclusion criteria

1. Accredited for HIV care and ART services
2. Has a functional laboratory with services including HIV, TB, and malaria tests
3. Staffed with registered nurses and clinical officers
4. Half the sites had minimal funding other than government funds
   Half the sites had previously participated in the Health Care Improvement with the MOH and URC
5. Follows MOH guidelines and protocols
Why did we start with improving triage?

• First thing was to improve triage systems
  – This is vital in low resource settings
    – human resource constraints
    – long patient waiting times
    – not uncommon for children to die in the waiting area

• Intervention to improve triage by on site support
  – Facilitated formation of quality improvement teams at sites
  – Helped them to re-organize process of care so that there was time to do triage
Changes tested, adapted and adopted by site teams

Site teams were facilitated to answer a set of fundamental questions of QI

– What were they trying to accomplish?
– How will they know that a change is an improvement?
– What change could they make that will result in an improvement?

Changes tested, adapted and adopted
1. Adjusted triage staffing to volume peaks
2. Displayed posters stating which symptoms or signs require admission
3. Set up triage equipment to be easy to find
4. Weekly self review of site team performance

10/18/2012
Percentage of OPD patients triaged in both intervention and control sites
Changes in triage by intervention group and time period

**Intervention sites**
- % patients triaged: Baseline 27.5, Intervention period 87
- % triaged pt with danger signs: Baseline 18.5, Intervention period 9.7
- % patients with danger signs admitted or referred: Baseline 13.6, Intervention period 27

**Control sites**
- % patients triaged: Baseline 36.3, Intervention period 67.6
- % triaged pt with danger signs: Baseline 25.1, Intervention period 16.2
- % patients with danger signs admitted or referred: Baseline 19, Intervention period 22.3

P-value of 0.0008
Changes in performance between baseline and intervention periods

- % patients triaged
- % triaged pt with danger signs
- % patients with danger signs admitted or referred

10/18/2012
Absolute number of patients identified with danger signs over time

Intervention sites

Control sites

Outpatients/10
Outpatients with danger signs

OPD attendances in control sites x 10
Identified with danger signs x 10
Summary

• Improved triage in group with on-site clinical and quality improvement mentoring
  – Increased % of patients screened for danger signs
  – Improved management of patients identified with danger signs
Conclusions

• On-site support improves triage beyond classroom training alone

• Ongoing cost-effectiveness analysis will guide governments in low-income countries as to whether they should reassign scarce resources to increase on-site support
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