Developing an Evidence-Based Clinical Resource for Registered Nurses on Medical Missions to Rural Zambia

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Medical Missions

- “Travel .... to a foreign country for the purpose of making a special study or of undertaking a special study of a short-term duration”.
- Interdisciplinary teams
- Variety of clinical foci

National Library of Medicine, 1999
Medical Missions

Then

- In 1979, an estimated 22,000 Americans were involved in short term missions.

Now

- In 2007, an estimated 1.6 million Americans were sent on international short term medical missions annually by more than 40,000 sending entities at an estimated cost of this to be $3 billion dollars.

Collins, 2007
Medical Missions

• There is limited literature on medical missions
  • No formal education/preparation is required
    • No nursing specific resources, handbooks, or guides
  • Lack of information on nursing’s participation in medical missions
  • Minimal tracking of patient outcomes and lasting impact of medical missions
Zambia

- Population 13.1 million
- Human Development Index: 163 out of 186 countries

- Literacy rate: 70.9%
- Gross National Income per capita 1,430 USD/yr
  - 64.3% of Zambia lives in poverty, defined as less than $1.25 USD/day
- Life expectancy: 49 yrs

Needs Assessment: Life in Zambia

80% of the population lacks adequate living facilities

- Safe access to water: 61% of the population
  - urban areas (87%) compared to rural areas (46%)
- 48% of the population have access to adequate sanitation
  - Urban 57% vs. Rural 43%
- 13% of households lack any toilet facilities
- Electricity is available in an estimated 3.2% of rural households.

(UN, 2010)
Needs Assessment: Zambia’s Healthcare Challenges

- High rates of morbidity
  - Malaria, Tuberculosis (TB), HIV/AIDS
- Leading causes of death
  - HIV/AIDS, respiratory infections, malaria, diarrheal diseases, and TB.
- Limited financial resources
- Limited number of trained national health care providers
  - Nurses 17.4 per 10,000 people
  - Physicians: 1 per 10,000 people
- Resulting in a reliance on medical mission organizations and non-governmental organizations to provide healthcare in Zambia.

(WHO, 2009)
Needs Assessment

- Convenience Sample
  - Luanshya, Zambia short-term medical mission
  - June 12-26th, 2011

- Retrospective chart review
  - The most common diagnoses of those attending a short-term medical clinic

- Institutional Review Board approval obtained
Data

- **Inclusion Criteria**
  - Seen at the short-term clinic and have had a chart generated with the following data collected:
    - Age
    - At least one diagnosis
    - At least one treatment documented

- **Exclusion criteria**
  - Age less than 14 years
  - Incomplete charts
# Data

<table>
<thead>
<tr>
<th>Total number of people seen clinic</th>
<th>1928</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Charts generated</td>
<td>1253</td>
</tr>
</tbody>
</table>

**Exclusion Criteria:**

- Age less than 14: 259
- Incomplete chart (No diagnosis): 275
- Incomplete chart (No treatment): 2
- Incomplete chart (No age): 9

**Usable Charts**: 708
Results

- Age range: 14-88 years
- Mean: 48 years
- Age median: 50 years
- Age mode: 70 years
Diagnoses by System

Total Diagnoses: 1147
Priority Diagnoses

- Musculoskeletal issues (352)
  - Sprains, strains
  - Arthritis
- Infectious Disease (165)
  - HIV/AIDS
  - Tuberculosis
  - Malaria
- Gastrointestinal Illness (128)
  - Reflux/GERD, Gastritis, Ulcers
- Other issues identified
  - Hypertension (78)
  - Intestinal parasites/worms (438 prophylaxed)
  - Culture/language
Zambian Culture and Language

- Societal roles
- Customs
- Availability of health resources
- Stigma
- Language barrier
Evidence-Based Resources

- World Health Organization
  - World Malaria Report
  - Model List of Essential Medicines
- Zambia Ministry of Health
- International Standards for Tuberculosis Care
- International Federation of Infection Control
- Centers for Disease Control

- USAID
- United Nations Millennium Development Goals
- Global Health Council
- Best Practices in Global Health Missions
- International Standards and Practice Guidelines and Health Missions
- Global Atlas on Cardiovascular Disease Prevention and Control
Development of the Resource

- Section 1: Introduction to global health
- Section 2: Zambia
- Sections 3: Health conditions
  - Chapter 1: Musculoskeletal Illnesses
  - Chapter 2: Hypertension
  - Chapter 3: Gastric upset
  - Chapter 4: HIV/AIDS
  - Chapter 5: Tuberculosis
  - Chapter 6: Malaria
  - Chapter 7: Intestinal worms
- Section 4: Sample formulary
- Appendices
  - Patient Education Tools
  - Bemba-English Dictionary
  - Common measure and formula
Roundworms are the most common worm infection in humans. The estimated global prevalence is 807 million, with an at risk population of 4.2 billion people. The worm is present worldwide but most prevalent in tropical areas including east Asia-Pacific, sub-Saharan Africa, India, and south Asia, and Latin America. Heavy infections are most common in children aged 5-15 with the intensity of infection declining thereafter.

**Description**: Roundworms are the largest of the intestinal worms, with size and shape similar to earth worms. Adult worms are white or yellowish, 15-35cm long and live in the small intestine. The roundworm life span is around 2 years.

**Pathophysiology**: Roundworms are passed via the fecal-oral route. Once the eggs are ingested, they hatch in the duodenum, and the resulting larvae penetrate the wall of the small bowel and migrate via the portal circulation through the liver to the heart and lungs. Larvae lodge in the alveolar capillaries, penetrate alveolar walls, and ascend the bronchial tree into the oropharynx. They are swallowed and return to the small bowel, where they develop into adult worms, which mate and release eggs into the stool. The life cycle is completed in about 2 to 3 months.
Initial Evaluation

- Review of guide by interdisciplinary team
  - Excitement
    - “Something new and different”
    - Ability to improve care provided
  - Useful
    - “Excellent resource that should be available for all members of teams going to Zambia.”
Ongoing Evaluation and Adaptation

- Increasing implementation of the guide into practice
- Publishing of guide to increase dissemination
- Sustainability of evidence-based nursing care after the medical mission by national nurses
- Adaptation of guide to curriculum planning
- Development of guides for use in other countries
Summary

- More must be done to ensure the quality of healthcare provided through medical missions to some of the world’s most vulnerable populations.
- By making current practice guidelines accessible at the bedside in some of the most remote regions, nurses will have the resources needed to provide competent, quality health care.
- Through sharing of resources and mentorship, there is a possibility for a more knowledgeable global workforce and sustainability of evidence-based practice.
Selected References

Questions?

Thank you for your time.