Global Health
Endoscopic Care in Resource-limited Health Care Settings: Our Experience in Guatemala

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OBJECTIVES

“Travel is the only thing you buy that makes you richer.” – Anonymous

• Define the term “global health”

• Discuss steps for developing a gastroenterology program that addresses global health issues

• Realize the barriers for global health and considerations for patient care in resource limited healthcare settings

• Understand the effect of socioeconomic inequity on the ability to undergo diagnostic and screening endoscopy
GLOBAL HEALTH

TRANS-NATIONAL HEALTH ISSUES ADDRESSED WITH A MULTIDISCIPLINARY APPROACH

Global Health is derived from public health and international health (evolved from tropical medicine)

▪ Embraces both prevention in populations and clinical care in individuals

▪ Health equity among nations and for all people is a major objective

**Definition:** Global health is an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide

EXAMPLES OF GLOBAL HEALTH INITIATIVES

- Coronavirus
- Ebola
- HIV/AIDS
- Tuberculosis/Malaria/Polio
- Maternal/Fetal Health

Many are centered around infectious diseases and sponsored by large agencies such as the World Health Organization (WHO)

Noncommunicable diseases are becoming an important cause of morbidity and mortality

www.who.int/data/gho/publications
NONCOMMUNICABLE DISEASES

Account for 63% of all deaths (36 million) – cardiovascular, cancers, respiratory, diabetes, stroke

25% (9 million) of these deaths occur before age 60

80% of these occur in low and middle – income countries (LMICs)

Many are largely preventable – tobacco, weight, eating/cooking habits

Cancer – 2nd leading cause of death globally, 70% in LMICs

Risk factors – tobacco, infections (HPV, hepatitis), H. pylori

Deaths: lung (1.8 million), colon (862k), stomach (783k)

Who.int/nmh/events/un_ncd_summit2011/en/, accessed February 2020
BARRIERS FOR GASTROENTEROLOGY IN GLOBAL HEALTH

1. Cost, size, and availability of equipment
   Many hospitals all over the world have operating rooms with standard equipment, few have functional endoscopy setups

2. Need for adequate facilities

3. Procedural complexities – sedation, intervention

4. Process for cleaning endoscopes

5. Global experience in training/practice

6. Travel and funding for medical trips
GASTROENTEROLOGY TRAINING IN GLOBAL HEALTH

- Survey conducted of fellows and program directors (representing 55 programs nationally)
- Most faculty/fellows believed global health would strengthen fellowship education

Few fellowship training programs offer Global Health education (17%)

Barriers to establishing a Global Health curriculum:

1. Funding
2. Scheduling
3. Lack of standardized objectives
4. Insufficient data on impact of global health
5. Lack of interest from participants, institution, ACGME

GASTROENTEROLOGY EXAMPLES OF GLOBAL HEALTH INITIATIVES

MGH, Mayo partnership with Uganda and Kenya, Dartmouth – Rwanda, Yale Global Health Scholars (SA, Uganda, Rwanda)

- High incidence of esophageal cancer (35% of EGDs with SCC)
- Use of esophageal stents of treatment (sole therapy)
- Liver disease/esophageal varices

Generalizable lessons:

- Support from political, academic, and financial entities in both countries
- Early but flexible planning/reassessment
- Equipment maintenance and repair plan
- Research and process improvement
- Expand beyond region through education

GASTRIC CANCER IN RURAL HONDURAS

Patterns of Gastric Cancer Care in Rural Central American Resource Limited Settings

• Gastric cancer is the leading cancer in Central America Regions (CA-4: Honduras, Guatemala, Nicaragua, El Salvador)
• Identified 741 cases with gastric cancer
  • 25% received treatment (mostly surgical therapy), only 12% received chemotherapy
  • Individuals with extreme poverty and those >55 years were less likely to be treated
  • Individuals with greater time to regional treatment facility were less likely to undergo treatment

Estevez-Ordóñez D et al (Doug Morgan). JAMA Oncology 2018
A BRIEF STORY OF MY INTEREST IN GLOBAL HEALTH

“Travel isn’t always pretty. It isn’t always comfortable. Sometimes it hurts, it even breaks your heart. But that’s okay. The journey changes you; it should change you. You take something with you. Hopefully, you leave something good behind.” – Anthony Bourdain

Experiences shaped my interest:

▪ India (pre-med/med school)
▪ Belize (medical school)
▪ Honduras
▪ Guatemala
GUATEMALA

Largest Economy in Central America
Population: 16 million
Official Language: Spanish (spoken by 93%)
Ethnic groups: diverse
  - Mestizo (mixed indigenous and European heritage)
  - Mayan people (K’iche’, Q’eqchi, Kaqchikel, Mam)
  - Garifuna (coastal)

Health: worst health outcomes in Latin America (highest infant mortality rates and lowest life expectancy)

16,000 doctors for its population of 16 million (half of that recommended by the WHO)
STEPS TO ESTABLISH A PROGRAM

1. Identify existing **relationships** and explore interests in expansion to gastroenterology
2. Develop a comprehensive **plan** based on assessment of disease burden, local population needs, and available resources
3. Identify **infrastructure** – space, equipment, maintenance/repair
4. Plan regular and **frequent visits**
5. **Research with a purpose:** initiate study protocols and data collection early to identify needs particular to that region and tailor appropriately
ESTABLISHING ENDOSCOPY IN GUATEMALA

The medical system in the United States has access to medical care that many countries lack, such as endoscopy

1. Is there a relationship with a health care entity that wants GI services?
3. Logistics of a site (2016) –
   a. Safe?
   b. Appropriate patient care/follow-up?
   c. Facilities to perform endoscopy?
      - procedure/operating room
      - cleaning/reprocessing endoscopes
SANTIAGO ATITLAN, GUATEMALA

Here!

Photo Credits: Michael Dougherty MD
A DREAM REALIZED

In 2018, after nearly 3 years of efforts, the donation of endoscopy medical equipment arrived in Guatemala.

Partnership with Americares and Olympus Hospitalito Atitlán, Santiago Atitlán
LOGISTICS OF SETTING UP AN ENDOSCOPY UNIT

- Consents
- Scope processing
- Scope storage
- Staffing
- Patient Selection
TWO MEDICAL MISSION TRIPS (JORNADAS): FEB & NOV 2019

Feb: 41 procedures, 35 patients (6 doubles)
Nov: 27 procedures, 24 patients (3 doubles)

Setup/Staffing:
- 1 endoscopy tower (1 of 2 operating rooms)
- 3 gastrosopes, 1 peds colonoscope
- 3 endoscopists: 1 GI fellow, 2 GI attendings
- 3 endoscopy nurses:
  - procedure, scope cleaning, recovery
- 1-2 nurse anesthetist(s)
- Guatemalan nursing staff in charge of intake, IVs; assisted with scope cleaning and procedure room circulation
IDENTIFICATION OF CASES

- Best use of expertise is procedure-related
- Vibrant outpatient clinic at Hospitalito Atitlan
- Referrals from regional health clinics (within 1 hour travel)
- Most patients had never had an endoscopy
PROFESSIONAL AND PERSONAL CONSIDERATIONS BEFORE YOU TRAVEL

Being aware that if staff are from one unit, there may be staffing concerns at home

You may have to sacrifice:
  • Own vacation time
  • Scheduling conflicts (Thanksgiving 2019)
  • Funding is limited—your own personal money may need to be spent

Having self-awareness about whether you may or may not be able to handle being in a resource-limited country
NURSING CONSIDERATIONS

- Acquaint yourself with the hospital – arrange for time for a hospital tour/orientation to understand the local practice patterns
- Partner with the local nurses/techs
- Ask and understand hospital processes
  - Specimen collection and labeling
  - Admit/discharge protocols
  - Paper charting (Farren)
- Be flexible and adaptable
  - Do not try to re-invent or alter the process if it is working
  - Protocols are often hospital/site specific
- Be respectful of photographs
NURSING CONSIDERATIONS

- Patient advocacy: high risk for errors due to speed of procedures, pre-assessments, minimal documentation of health history, and language/cultural barriers
  - Example: colon preparation – language barriers
  - Example: patients may have limited “healthcare” experience – involve family members

- Single use items in the United States may mean “reusable” when resources are limited:
  - Example: unsoiled gowns, devices that can be cleaned/sterilized

- Medical equipment in resource limited countries tends to be older versions of what we see in the United States – ensure proper functioning
TEAM CONSIDERATIONS

- Discuss team member roles and responsibilities
- Discuss what worked, what didn’t work, what could have been done better or differently
- Brainstorm about what supplies or processes could have made our work easier
  - Make a list of supplies for next trip
- Address any conflicts between team members, any cultural insensitivities seen, and any frustrating experiences
- Definitely discuss the victories!!
- Take time to reflect on your experiences
- Make sure you thank people that supported you financially and those that supported you in their thoughts and prayers.
INDICATIONS

68 Procedures (59 patients)

51 upper endoscopies
  • 43 Dyspepsia (epigastric pain, nausea, bloating)
    – 2 also with heartburn, 1 also with diarrhea
  • 3 Nausea/vomiting
  • 2 dysphagia
  • 2 weight loss (>10 lbs unintentional) – 2/2 gastric cancers
  • 1 globus

16 colonoscopies, 1 flex sig
  • 8 Constipation + abdominal pain
  • 4 Rectal bleeding
  • 2 Other anorectal symptoms (itching, painful defecation)
  • 1 Screening (66 yo German woman, never screened)
CASES – MOST COMMON

Normal
CASES – MOST COMMON

Gastritis due to *H. pylori*
CASES

Irregular Z-line

Pancreatic Rest
CASES

Sessile Serrate Polyps

Adenoma
CASES

Large Adenoma
CASES

Large Adenoma
CASES

79 yo M with 2-y functional decline, and several month history of 10-lb wt loss, epigastric pain and dysphagia
69 yo M w/ 50-lb wt loss in 6m and worsening post-prandial vomiting

Cases

Pylorus, hidden, partially obstructed

Ulcer
FUTURE DIRECTIONS

▪ Goal 2-3 trips per year, 3-5 working days (~12 procedures/day)
  Medical student & trainee involvement, expansion personnel

▪ Expand referral network through collaboration and regular visits

▪ Incorporation of local Guatemalan gastroenterologist and/or surgeon to do cases more frequently
  ▪ Limiting factor is cost of CidexOPA disinfectant – only good for 14d, need 2-3 gallons for submersion and $80-100/gallon

▪ Research (in order of priority and feasibility)
  1. Local clinical protocols for endoscopic procedures, *H. pylori* testing
  2. Assessment of referral patterns, indications, and outcomes
  3. Additional site for pilot of stool-testing for luminal / colorectal cancers?
  4. Prospective studies, biobanking for collaboration with other CA-4 sites (unique population)
SERVING OTHERS IN GUATEMALA

“Travel makes one modest. You see what a tiny place you occupy in the world.” – Gustave Flaubert

“Work hard, serve others, have fun”

Work was rewarding – we knew that endoscopy was a privilege for these patients and they were grateful.
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