Establishment of an Electronic Health Surveillance Program

Hillside Health Care International
Punta Gorda, Belize

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Outline

• Introduction
• Methods
• Results
• Discussion
• Conclusion
• Acknowledgements
Introduction

Research Question: In small, resource depleted health settings how can patient data be collected in a sustainable manner to fully employ it’s potential to characterize clinic utilization, high volume conditions, and preventable conditions in the population being served?
Introduction

• Hillside Health Care International (HHCI)
  – Punta Gorda, Toledo District, Belize

• Toledo District
  – 23,000 residents
  – HHCI is one of two primary care providers
  – 5 major ethnic groups
  – Primarily rural
Methods

• HHCI manually recorded patient data in both medical records and a daily log
  – The log information was not being utilized

• Epi-Info
  – Public domain database software
  – Easy to program and use
  – Contains essential tools used in public health monitoring
  – Online support available
  – Compatible with other database software (MS Excel, MS Access, and other SQL databases)
Methods

• Patient log data collected
  – Age
  – Sex
  – Village of Origin
  – Visit (Initial/Follow-up)
  – Date of Visit
  – Visit Location (Clinic/Mobile)
  – Primary/Secondary Diagnosis
    • Abbreviated IDC 10 coding
  – Referral (Lab, Pharmacy, Hospital, Specialist)

* Identifiable indicators were not collected
Methods

- Clinic data entered from January 2007 - July 2008
  - 6249 visits entered
    - Clinic and Mobile data
  - 2/3 manually entered using Epi-Info database, 1/3 imported using Excel
    - Creates inconsistencies in data collection and tracking
Results

Patient Visits by Sex

Sex

- Male
- Female

Percentage
0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%
Results

Visits by Age

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>30%</td>
</tr>
<tr>
<td>6-18</td>
<td>10%</td>
</tr>
<tr>
<td>19-50</td>
<td>50%</td>
</tr>
<tr>
<td>50+</td>
<td>10%</td>
</tr>
</tbody>
</table>
Results

Visit Location

<table>
<thead>
<tr>
<th>Location</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinic</td>
<td>60%</td>
</tr>
<tr>
<td>Mobile</td>
<td>40%</td>
</tr>
</tbody>
</table>
Results

Top Diagnosis

Percentage

Diagnosis

- Upper Respiratory Infection
- Hypertension
- Diabetes Type 2
- Scabies
- Headache, Other
- Worms
- Back Pain
- GERD
- Insect Bite
- Muscle Pain/Muscle Strain
Discussion

• Strengths
  – Electronic log entry makes analysis easier and more reliable than performing analysis by hand
  – Epi Info can be used to track individual patient data

• Limitations
  – Diagnostic capabilities are restricted, which impacts the accuracy of diagnosis
  – Data is selective in relation to:
    • Ability of individuals to go to the clinic
    • Severity of the disease
Conclusion

• The data is valuable in providing Hillside a summary of the patient population and is useful in several areas
  – Prepares practitioners for what they will see in the field
  – Aids the clinic in determining what resources they need
  – Allows the clinic to determine areas needed for specific public health interventions

• The data remains insufficient to make broad epidemiological summaries of the local population

• To follow trends over time the data collection and analysis needs to be sustainable
Acknowledgements

• Hillside Health Care International
  – Joycelyn Lopez

• Ministry of Health
  – Cherry-Mae Avilez

• Preceptor
  – Jeff Hartman

• Mentor
  – Lori DiPreteBrown