Screening for colorectal cancer
A project in a small town in the middle of the Amazon rain forest

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### Epidemiological data

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate</td>
<td>61,200</td>
<td>26.6%</td>
</tr>
<tr>
<td>Lung</td>
<td>17,330</td>
<td>8.1%</td>
</tr>
<tr>
<td>Colorectal</td>
<td>16,660</td>
<td>7.8%</td>
</tr>
<tr>
<td>Breast</td>
<td>57,960</td>
<td>28.0%</td>
</tr>
<tr>
<td>Colorectal</td>
<td>17,620</td>
<td>8.6%</td>
</tr>
<tr>
<td>Cervix</td>
<td>16,340</td>
<td>7.9%</td>
</tr>
</tbody>
</table>

- **34,220** new cases
- **About 17** new cases/100,000 inhabitants
CRC screening

- High prevalence
- Detectable in a pre cancer stage
- Curative treatment available
- Suitable methods for screening

→ Eligible disease for screening

Wilson and Jungner criteria for screening
Early detection

- People from 50 y/o should have FOBT annually and if positive referrer to colonoscopy
- No CRC screening program established
Belterra Project
Belterra

- Lower Amazon basin
- 45 Km from Santarém
- Area 2,640 km²
- 18,000 inhabitants
- 6,853 urban area
- 9,471 rural zone (ribeirinha and interior)
- 2,359 50 ≥ 70 y/o
Belterra- Pará
Why Belterra?

• Underserved region - Requires development
• Closed and small population (18,000)
• Interest and support from Major and secretary of health staff
• Support from high complexity procedure hospital in Santarém
Belterra Project
Objectives

• ASSISTENTIAL
  – Detection of pre cancer lesions
  – CRC diagnosis on early stage
    • Better therapeutic results
    • Higher survival and better quality of life

• DIDATIC
  – Actualization of local endoscopists

• SCIENTIFIC
  – Data base
    • Enrolment of medical students – cietific iniciation
    • Master and doctor thesis
    • Scientific publications
Belterra Project

- Awareness campaign
  - Governamental agents
  - Doctors
    - General Practitioners
    - Gastroenterologists
    - Colorectal Surgeons
  - Population
    - Radio
    - Outdoors
    - Flyers
CAMPAIGN OF PREVENTION AND DETECTION OF COLORECTAL CANCER

SE VOCÊ TEM 50 ANOS OU MAIS, PROCURE UM AGENTE DE SAÚDE E AGENDE SEU EXAME.

O DIAGNÓSTICO PRECOCES SALVA Vidas E SÓ DEPENDE DE VOCÊ.
SE VOCÊ TEM 50 ANOS OU MAIS, PROCURE OS AGENTES DE SAÚDE E AGENDE JÁ SEU EXAME.
O DIAGNÓSTICO PRECOCE SALVA VIDAS E SÓ DEPENDE DE VOCÊ.
O câncer colorretal é o terceiro tipo de tumor mais comum em homens e mulheres no Brasil. No entanto, sabe-se que a taxa de sobrevida cresce proporcionalmente ao momento de identificação da doença. Dessa forma, a prevenção e diagnóstico precoce contribuem ativamente para obter melhores resultados no tratamento da doença.

A Boston Scientific, o Hospital Sírio Libanês e a Gastrocom, em parceria com a Prefeitura Municipal de Belterra, lançam em outubro de 2014, com previsão de término em 2016, uma iniciativa inédita para promover o atendimento gratuito a homens e mulheres entre 50 e 70 anos. É que prevê atendimentos para mais de 2.100 moradores do Município de Belterra nessa faixa etária.

Para cada indivíduo, serão realizados os seguintes procedimentos:

1) Exame parasitológico
2) Exame para sangue oculto nas fezes
3) Endoscopia Digestiva Alta (EDA)
4) Colonoscopia (EDB)
5) Biópsias e polipectomias
6) Exame anatomo-patológico

Essa iniciativa conta ainda com o apoio do Hospital Municipal de Belterra, Hospital Regional do Baixo Amazônia - Santarém, Laboratórios DASA, Navio Hospital Abaré e ONG Expedicionários da Saúde.
Belterra Project

• Definition of target population
  – Asymptomatic
  – 50 - 70 y/o

• Interview and orientations

• Fecal occult blood test

• Upper GI endoscopy + HP

• Colonoscopy
  – Polipectomy
  – Surgery
Belterra Project

- Hospital Municipal de Belterra
Belterra Project

- From October 2014
- 18th expedition (14th expedition)
- 1,350 patients
- Data
  - Insertion on RedCap platform
  - Coordination epidemiologists
Partial results

- Overall adhesion - 96.68%
- 97.9% complete colonoscopies
- Findings:
  - 8 cases of CRC
  - 33 high risk colorectal adenomas
  - 3 gastric cancers
  - 1 duodenal cancer
Partial results
Estimated cost
U$ 1,00 = R$3,164

• 1,103,747.07 (R$751.36 per patient)
• U$ 348,845.47(U$237.47)
• Cost per cancer diagnosis
  – R$ 91,979.00 – U$ 29,070.48
  – R$ 24,527.78 – U$ 7,752,14 (if we include high risk adenomas)
Conclusions

• an expedition-based colorectal and gastric cancer screening project appears to be feasible. The public and private partnership is essential for fundraising and supporting the program
• the cost benefit of the program as it was conceived showed to be comparable to others well established screening projects worldwide
• there was an expressive population participation on the screening project
• we found similar prevalence of high risk adenomas and CCR compared to previous studies
• the gastric cancer within the studied population was similar to those observed in high prevalence areas