The Thailand Colorectal Cancer Screening (CRC) Pilot Demonstration Project in Lampang Province

International Agency for Research on Cancer
Lyon, France
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Background

• Colorectal cancer (CRC) is the third most common cancer among men and fifth among women in Thailand; crude incidence rates range between 8 to 15 per 100,000 person-years in both sexes; 8400 new cases are estimated to occur annually.

• The incidence of CRC has increased steadily over the last two decades, probably due to increasing adoption of western lifestyle.

• Unfortunately, most CRC patients present at advanced stages, resulting in a poor 5-year survival rate (~30-40%).

• Neither Faecal Occult Blood Testing (FOBT) screening nor colonoscopy are widely practiced.
5-year survival from large bowel cancer in Thailand

<table>
<thead>
<tr>
<th></th>
<th>Colon</th>
<th>Rectum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>5-year survival (%)</td>
</tr>
<tr>
<td>Chiang Mai (1993-1997)</td>
<td>310</td>
<td>32.5</td>
</tr>
<tr>
<td>Khon Kaen (1993-1997)</td>
<td>258</td>
<td>44.3</td>
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<tr>
<td>Lampang (1990-2000)</td>
<td>522</td>
<td>39.4</td>
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<tr>
<td>Songkhla (1990-1999)</td>
<td>314</td>
<td>52.8</td>
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Goals

- Evaluate the **acceptability, feasibility, organization, implementation,**

  cancer screening in the general population in Thailand by integrating the programme into the existing public health services

- Inform and guide the eventual scaling up of CRC screening to cover the entire country

In collaboration with the:

**National Cancer Institute Thailand**
Target population and eligibility criteria

- All apparently healthy men and women aged 50 to 65 years resident in Lampang province with no debilitating mental or physical illness approx (approx 150,000).

Training of nurses and health workers in Primary Care Units (PCU) of Lampang province

- Information dissemination on CRC screening, creating awareness, motivating the target population and inviting eligible persons to participate in CRC screening during a one-day session.
- Trained in the FOBT test procedure, interpreting test results and in advising and referring.

Training of colonoscopy providers

- Gastroenterologists re-orientated at the Lampang provincial hospital and Regional Cancer Centre to improve their colonoscopy/polyp excision/biopsy skills.
- Surgeons and oncologists made familiar with the standard treatment protocols for the management of the various stages of CRC diagnosed.
Screening with immunochemical FOBT (iFOBT)

The pilot project provides a one step iFOBT (Hemosure™) once in 5 years to eligible participants. The iFOBT chosen is a highly sensitive, rapid, convenient and odourless sandwich dye immunoassay. In less than 5 minutes, elevated levels of Hb as low as 0.2 uG/ml can be detected and positive results for high levels of Hb can be seen within one or two minutes.

- Participants are educated about CRC, the screening program and are provided with the tube for the faeces sample to be collected by health workers during routine house visits.

- The participants are instructed on how to use the device, collect faeces, and return the tube to the PCU.

- At the PCU, the nurse/health worker completes an informed consent form and performs the assay.

- For those with positive FOBT, the nurse obtains a specific appointment for colonoscopy at Lampang provincial hospital or the Regional Cancer Centre and gives specific advice on pre-colonoscopy bowel preparation and a prescription for a cleansing preparation.
Colonoscopy, diagnosis and treatment of colorectal cancer

- Colonoscopy performed by a trained gastroenterologist at the Lampang provincial hospital or Regional Cancer Centre.
- Polyps and small lesions are removed and subjected for histopathology. Large lesions are biopsied for histological assessment.
- Those diagnosed with CRC receive further staging investigations, and their clinical stages determined followed by treatment as per the standard protocol for stage.
- The findings of colonoscopy, histology, stage, treatment and follow-up assessment are recorded in a pro forma.
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**Organized program**

- **Invitation of healthy eligible population (50 to 65 years)**
- **Faecal collection (iFOBT)**
  - **Negative**
  - **Invalid**
  - **Positive**
  
  - **Repeat iFOBT same day**
    - **Negative**
    - **Invalid**
    - **Positive**

  - **Repeat faecal collection**
    - **Normal**
    - **Polyps**
    - **Suspected cancer**
      - **Biopsy on large lesions during colonoscopy**
      - **Further investigations, staging, treatment and follow-up care**

- **Colonoscopy**

- **Monitoring CRC incidence and mortality**

- **Reassurance advice to repeat test 5 years later**
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Preliminary results

Invitation of healthy eligible population (50 to 65 years) 150,000 participants / 2 years

- Positive N=642* (1.3%)
  - Colonoscopy N=458* (71.3%)
    - Biopsy of polyps
    - Excision of growths/ulcers
    - Normal N=274 (59.8%)
    - Polyps N=145 (31.7%)
    - Cancer N=22 (4.8%)
    - Further investigations, staging, treatment and follow-up care

- Negative N=51,298* (98.7%)
  - Reassurance; repeat test after 5 years

- Inconclusive N=9* (0.1%)

Monitoring CRC incidence and mortality through Lampang Cancer Registry, Lampang death registration system and active follow-up

*on going
Preliminary Results - Summary

- To date participation rate has been 87% (52,000 out of 60,000 invited)
- One in 80 cancer cases were found among those subjected to colonoscopy
- One in every 2360 people screened by FOBT had a detectable colorectal cancer
- Of the colorectal cancer cases:
  - 5 cases were stage 0 (in situ); 9 stage I; 3 stage II; 5 stage III
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Preliminary Conclusions

• It is feasible to introduce an iFOBT-based CRC screening program through existing health services using logistics appropriate to resources and settings

• Participation for both screening colonoscopy and treatment are satisfactory

• The Lampang CRC screening projects will provide valuable information for implementation in Thailand
Acknowledgments

The Government of Thailand who entrusted the study to

- The National Cancer Institute, Bangkok (NCIB)
- The Early Detection and Prevention Section at the IARC for their technical assistance;
- The collaborators at:
  Lampang Provincial Hospital
  Regional Cancer Centre, and
  Population-based cancer registry
- The project participants