Primary care based approaches to cancer prevention, screening and early diagnosis - a case study from Nkhoma Hospital, Malawi

Dr Liz Grant
Director  Global Health Academy
Assistant President for Global Health
Liz.grant@ed.ac.uk
Burden of cervical cancer in Malawi

- 83% of cervical cancers globally are in resource constrained countries.

In Malawi cervical cancer is the commonest cancer in women (45.4% of registered female cancers).

Estimated that number of cervical cancer cases could rise by 60% over the next decade.

Government policy supports screening using visual inspection with acetic acid (VIA), but provision is limited.

In the absence of cervical screening HIV-infected women are 6x more likely to develop cervical cancer than HIV-uninfected women.
Request from Nkhoma to:

- **Sensitisation** of healthcare professionals and local population
- **Upskilling** VIA
- Provision of a ‘see and treat’ programme of cervical screening, **including treatment**
- Ensuring **robust follow-up pathways** for all non-negative VIA patients
- Increasing **robust data collection and analysis**
- Exploring use of **HPV testing** for potential triage to VIA as Negative Predictive Value of HPV result is very high, especially in comparison with Pap smears.
- Developing a teaching **module on cervical cancer screening and prevention**

- Funded by the Scottish Government International Fund for Development in Malawi, 2013-2016
- Extensive engagement with Malawian Ministry of Health colleagues, and regional and village chiefs
• Supports screening using Visual Inspection with Acetic Acid (VIA) in resource-constrained settings

• Supports Cryotherapy with carbon dioxide or nitrous oxide

• Does not mention cold / thermo coagulation

• Initial plan was to use cryotherapy, consistent with WHO guidance, and Malawian MoH policy

• Very quickly evident that cylinder cost and availability of gas was prohibitive, and supply inconsistent

• Needed to consider an alternative treatment modality – one used in Scotland – old, but effective
Treatment using thermal (cold) coagulation

- Destroys abnormal cells at 120°C in 30 secs
- Small and portable
- Initial capital outlay required but low electricity running costs
- Abstention from sex after treatment is shorter
- Allows punch biopsies to be taken in clinic for suspicious lesions
Creating the environment for a successful ‘see and treat’ programme of cervical screening - 1

Stage 1: Nkhoma H obtaining support from Malawian Ministry of Health, and creating clinic

Stage 2: Nkhoma Leads raise awareness amongst staff, communities and patients (including meetings with traditional authority regional and village chiefs.)
Creating the environment for a successful ‘see and treat’ programme of cervical screening -2

Stage 3: VIA & Treatment training – 50 women & 10 thermo-coagulation treatments

Stage 4: Outreach to community Health centres

First provide consistent starter pack to every outreach clinic
NKHOMA CERVICAL CANCER SCREENING PROGRAMME

**Year 1**
Nkhoma Hospital

**Year 2**
Nathenje
Kasina
Matapila
St Josephs (= Chipwanya)
Diamphwe

**Year 3**
Mthenthera
Mayani
Kalulu
Chimbalanga
Tsoyo

[Map showing locations marked with circles indicating Nkhoma Hospital, Year 2 Health Centres, and Year 3 Health Centres]
Women leading women

• Over 14,000 women have been screened with VIA in the first two years, at hospital and health centre settings

• VIA positivity is approx. 6%, but varies by location, and by HIV status

• VIA-positive women receive treatment using thermo coagulation, over 80% on the same day

• Pathway of care including radical hysterectomy and palliative care now in place

• Treated women return for 36month and one-year follow up visits.
From Campbell et al. Use of thermo-coagulation as an alternative treatment modality in a ‘screen and treat’ programme of cervical screening in rural Malawi. Int J Cancer 2016; in press
Developed with Nkhoma team and Scottish colleagues

Draws on lessons learnt in Nkhoma and the health centres

Some background evidence, but aims to be practical and useful in Malawi

Accepted by the Association of Obstetrics and Gynaecology of Malawi

Being used in several sites across Malawi

Ethiopia and Zambian teams coming to Nkhoma Hospital to learn the procedure
Malawi and Edinburgh Team

- Beatrice Kabota, Heather Cubie, Christine Campbell, Savel Kafwafwa, Hilary Brown, Graeme Walker, Belito Madetsa, Miriam Deeny, David Morton, Reynier Ter Haar, Liz Grant,

- Nkhoma Hospital
- University of Edinburgh Global Health Academy
Evidence for use of thermal (cold) coagulation

- Gordon HK, Duncan ID. Effective destruction of cervical intraepithelial neoplasia (CIN) 3 at 100°C using the Semm cold coagulator: 14 years’ experience. Br J Obst Gynec. 1991: 98; 14-20
  - The primary success rate was 95% at 1 year and 92% at 5 years
  - 266 post-treatment pregnancies – no increase in rates of miscarriage, pre-term or operative delivery

- Dolman et al. Meta-analysis of the efficacy of thermo-coagulation as a treatment method for cervical intraepithelial neoplasia: a systematic review BJOG. 2014
  - 13 studies included. Among 4569 patients, summary proportion cured of 96% [95% confidence interval (CI) 92–99%] and 95% (92–98%) were obtained for CIN1 and CIN2-3 disease, respectively.
  - Fewer studies from low-income settings

  - Retrospective review 577 patients 2001 - 2011: cure rate 95.7% at 1 year.
Figure 2 Map of Research Area