UK National Screening Committee

Screening for Stomach Cancer

12 February 2016

Aim

1. To ask the UK National Screening Committee to make a recommendation, based upon the evidence presented in this document, whether or not screening for stomach cancer meets the UK NSC criteria to support the introduction of a population screening programme.

   This document provides background on screening for stomach cancer.

Current recommendation

2. The 2009 review of screening for stomach cancer concluded that systematic screening of adults in the population did not meet the UK NSC criteria and the committee did not recommend its introduction.

   The UK population has a low incidence of stomach cancer and the tests evaluated in 2009 were either highly invasive: ie endoscopy, or used radiation. This would mean that the potential harms of a screening programme would outweigh the potential benefits by exposing a low risk population to these tests, and exposing a large group to unnecessary anxiety.

Review

3. This review was undertaken by Solutions for Public Health, in accordance with the triennial review process http://legacy.screening.nhs.uk/stomachcancer

4. The scope of this review focused on three key areas: the natural history, the test and the treatment of stomach cancer; these were identified as problematic areas in the previous review. An attempt was also made to find any data on mortality and morbidity outcomes of the stomach cancer screening programmes in Korea and Japan.

5. The conclusion of this review is to reaffirm the UK NSC recommendation not to screen for stomach cancer in the UK adult population. The key reasons are:

    a. A test (biomarker) suitable for screening the general UK population has not been identified. H. pylori infection is a recognised risk factor that is linked to 32% of UK cases. But studies assessing H.pylori as a marker for disease report a low specificity: 30%. So there would be a substantial proportion of false positive screening test results. Another biomarker MG7-AG has been identified as a candidate but the evidence base is not sufficiently developed to recommend its use for screening. **Criterion 5 not met.**

    b. Other testing options are either invasive (endoscopy) or use radiation (barium x-ray), however there is insufficient evidence to assess the trade-off between benefit and harm to the UK population where the incidence is low. For example, a modelling exercise using endoscopy as the initial test was conducted by Solutions of Public Health (SPH) for this review. It estimates that there would be 15 stomach cancer cases per 100,000 people aged over 40 in the UK, ten of which would be detected, there would be 3900 false positives, 430 people would experience significant morbidity, and there would be one death from the test. **Criterion 5 not met.**

    c. There is inadequate evidence to inform the management of early potential malignant gastric lesions. **Criterion 10 not met.**

    d. There is no RCT evidence to demonstrate a reduction in mortality and morbidity. Therefore the criterion was not met. Two studies exploring the results of endoscopic screening in Japan and Korea reported earlier detection from screening and suggested that there may be improved survival. However the review considered that there should be caution in this interpretation because of the potential for bias arising from the studies. **Criterion 13 not met**

Consultation

6. A three month consultation was hosted on the UK NSC website. Direct emails were sent to stakeholders of whom 23 organisations were contacted directly. **Annex A**

7. Responses were received from the following 5 stakeholders: Cancer Research UK, Royal College of Pathologists, Royal College of Physicians (RCP) and British Society of Gastroenterology (BSG), Royal College of Physicians and Surgeons of Glasgow, National Cancer Research Institution- Oesophageogastric Subgroup. All comments are in Annex B, below.

   No respondent disagreed with the conclusion of the review. The submitted comments emphasised the importance of monitoring new literature assessing the performance of the MG7-AG blood test, which in China, has yielded a reasonable sensitivity and specificity when compared to other tests considered in this review. One respondent suggested that endoscopic screening and treatment should not be ruled out but commented that the workforce skill levels necessary for screening were not sufficiently developed at present and agreed that the evidence for treatment outcomes was not available at present.

Recommendation

8. The committee is asked to approve the following recommendation:
   A systematic population screening programme for stomach cancer is not recommended.

   A screening and treatment strategy that is appropriate for use in the UK has not been identified. Screening has not been demonstrated to do more good than harm.

   Based on the 22 UK NSC criteria set to recommend a population screening programme, evidence was appraised against the following seven criteria:

	Criteria	Met / Not met
The Condition		
1	The condition should be an important health problem.	Met ✓

The Test		
5	There should be a simple, safe, precise and validated screening test.	Not met ✘
The Intervention		
10	There should be an effective treatment or intervention for patients identified through early detection, with evidence of early treatment leading to better outcomes than late treatment.	Not met ✘
The Screening Programme		
13	There should be evidence from high quality Randomised Controlled Trials that the screening programme is effective in reducing mortality or morbidity.	Not met ✘

Annex A

List of organisations contacted:

1. Biohit Healthcare Ltd
2. The British Association for Cancer Research
3. British Association of Surgical Oncology
4. British Society of Gastroenterology
5. Cancer Recovery Foundation
6. Cancer Research UK
7. Debbie's Dream Foundation (Curing Stomach cancer)
8. Faculty of Public Health
9. Gastric Cancer Foundation
10. No Stomach for Cancer
11. Oesophageal Patients Association
12. Oxfordshire Oesophageal & Stomach Organisation
13. Radiology: National Clinical Director for Diagnostics NHSE
14. Rarer Cancers Forum
15. Royal College of General Practitioners
16. Royal College of Pathologists
17. Royal College of Physicians
18. Royal College of Physicians and Surgeons of Glasgow
19. Royal College of Physicians of Edinburgh
20. Royal College of Radiologists
21. Royal College of Surgeons
22. Royal College of Surgeons of Edinburgh
23. Society and College of Radiographers

Annex B

1.

Name:	Professor Hazel Scott	**Email address:**	**xxxx xxxx**
Organisation (if appropriate):	Royal College of Physicians and Surgeons of Glasgow		
Role:	**Honorary Secretary**		
Do you consent to your name being published on the UK NSC website alongside your response? **Yes – Please use the College name as above**			

Section and / or page number	Text or issue to which comments relate	Comment *Please use a new row for each comment and add extra rows as required.*

55	Surgical treatment of stomach cancer	The earlier the stage of the stomach adenocarcinoma, the greater the survival benefit to the patient following resection. Endoscopic screening would pick up gastric cancer at an earlier stage and this would improve patient outcome following surgery. The paper focuses on diagnosis of cancer rather than the effect on stage at pick up. Section 64 does indicate that screening by endoscopy would affect surgical outcome. The section titled “The Treatment” makes no reference to endoscopic treatment of early gastric lesions. It would appear that there is no literature with regards to this; however endoscopic treatment of endoscopic mucosal resection and radio frequency ablation have resulted in a change in the management of early oesophageal cancer or premalignant lesions in the oesopahgus and this lead to many patients undergoing oesophagus sparing treatment with functional, quality of life and mortality/morbidity benefit. Again section 64 discusses this and finds a significantly higher proportion identified by screening suitable for endoscopic treatment, however it is not felt that Eastern population results can be generalised to the Western population

61	The screening programme	Eastern endoscopists taking part in screening for cancer are very expert at obtaining good mucosal views and surveying all of the gastric mucosa with white light, NBI and staining if required. This is not the case in the UK. Standards exist for colonoscopy completion rate and practitioners undertaking bowel screening colonoscopes are all trained, assessed and registered. We would be concerned that many of the lesions that are picked up in the Eastern screening programmes would be missed entirely by the majority of our upper GI endoscopy practitioners. This is in the process of being developed with the British Society of Gastroenterology and European Society of GI endoscopy detailing minimum reporting and recommending photographic documentation of diagnostic upper GI endoscopy views.
72	Are biomarkers valid for screening?	We agree with papers findings. MG7 antigen may prove useful but not currently proven
73-75	Does endoscopic screening benefit outweigh harm?	We agree with papers findings
76	Management of potentially malignant lesions?	No studies in early cancers or premalignant lesions but endoscopic treatment is safe and feasible. We are currently unsure of if screening endoscopy is required for at risk groups for oesophageal cancer (intestinal metaplasia, pernicious anaemia, previous distal gastrectomy).
79-80	Research	Scotland does have a higher incidence of gastric cancer and a higher proportion of patients that are not suitable for radical treatment. We would be happy to support and contribute to research projects described.

2.

Name:	Dr Andrew Goddard	**Email address:**	**xxxx xxxx**
Organisation (if appropriate):	Royal College of Physicians (RCP) and British Society of Gastroenterology (BSG),		
Role:	RCP registrar, submitting a joint response on behalf of the above organisations		

Do you consent to your name being published on the UK NSC website alongside your response?

Yes ☒ **No** ☐

Section and / or page number	**Text or issue to which comments relate**	**Comment** *Please use a new row for each comment and add extra rows as required.*
General	General	The BSG/RCP are grateful for the opportunity to respond to the above consultation. We would like to endorse the decision to continue not screening for stomach cancer. Our experts believe that the section on H pylori in the document should be reviewed as it implies there are no reliable non-invasive tests for H pylori. It should say there is no evidence that diagnosing H pylori is not an effective screening test.

3.

Name:	Sara Bainbridge	Email address:	**xxxx xxxx**
Organisation (if appropriate):	Cancer Research UK		
Role:	Policy Manager		
Do you consent to your name being published on the UK NSC website alongside your response? Yes x No ☐			

Section and / or page number	Text or issue to which comments relate	Comment
Page 16, section 72	The additional studies identified in the literature search for this review do not provide sufficient evidence to change the conclusion of the previous NSC review.	Cancer Research UK welcomes this appraisal of screening for stomach cancer. We support the conclusion of the report that at this time there is not sufficient evidence that screening for stomach cancer in the UK population would be likely to do more good than harm, and therefore should not be recommended.
Page 5, sections 8 - 10	The condition should be an important health problem	We agree that stomach cancer is an important health problem. Although the age-standardised incidence rate of stomach cancer has been steadily decreasing in the UK, around 7,000 people were diagnosed with the disease in 2012 and in 2013 there were around 4,700 deaths from the disease.

Page 6, section 19	Are any tests for *H. pylori*, or any other biomarkers or combinations of biomarkers, sufficiently valid for use in a population-based screening programme?	To ensure it is as up-to-date as possible, we suggest this appraisal is expanded to incorporate the findings of the recent Cochrane review into detection and treatment of Helicobacter pylori as a means of reducing stomach cancer, though this would not change the final conclusion. We would welcome continued regular monitoring of the literature on: • the use of the MG7-Ag biomarker as a screening test, especially in the UK or a similar population, and, • to identify new targets for screening.

4.

The Royal College of Pathologists
Pathology: the science behind the cure

Consultation ECR0156 Public Health England UK National Screening Committee – Stomach Cancer

The Royal College of Pathologists' written submission

November 2015

For more information please contact:
Rachael Liebmann
Registrar

The Royal College of Pathologists
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21 Prescot Street
London
E1 8BB

1 About the Royal College of Pathologists

1.1 The Royal College of Pathologists (RCPath) is a professional membership organisation with charitable status. It is committed to setting and maintaining professional standards and to promoting excellence in the teaching and practice of pathology. Pathology is the science at the heart of modern medicine and is involved in 70 per cent of all diagnoses made within the National Health Service. The College aims to advance the science and practice of pathology, to provide public education, to promote research in pathology and to disseminate the results. We have over 10,000 members across 19 specialties working in hospital laboratories, universities and industry worldwide to diagnose, treat and prevent illness.

1.2 The Royal College of Pathologists comments on the Consultation ECR0156 Public Health England UK National Screening Committee – Stomach Cancer. The following comments were made by Fellows of the College during the consultation which ran from 24th September until 6th November 2015 and collated by Dr Rachael Liebmann, Registrar.

2 General consultation responses:

2.1 Fellows agreed with the conclusion of this document i.e. that there is insufficient evidence of a suitable benefit:harm ratio currently to support the introduction of a screening programme for stomach cancer. The number of people who would need endoscopy per case of gastric cancer identified seems high and there is an absence of any economic models or calculations that would support untargeted screening.

2.2 We support the conclusion that given the sensitivity and specificity of existing tests cancer screening is unlikely to be cost effective on its own.

2.3 The College supports the Early Cancer Detection Consortium which aims to produce a generic blood test for cancer, are using multiple biomarkers.

5.

Dear Adrian,

On behalf of Professor Cunningham please find below the opinion from the NCRI Oesophagogastric Subgroup on the draft report for the UK National Screening Committee on Screening for Stomach Cancer, which was discussed at their meeting on 10th September 2015:

"The draft report for the UK National Screening committee was circulated prior to the meeting and was discussed. It was noted that this was an update from the previous review conducted in 2010 which concluded that the potential harms outweighed the potential benefits of a national stomach cancer screening programme and that in 2015 there was not sufficient evidence to change this conclusion. The potential screening tests reviewed were briefly considered including barium studies, endoscopy, H.pylori serology, serum pepsinogen, gastrin-17 and monoclonal gastric cancer 7 antigen (MCG7-Ag). The last of these may be of interest in the future, with higher sensitivity and specificity than some of the other blood tests, but the evidence to date is based on a study in rural China which may not be applicable to a UK population. It was also noted that there has been a further decline in the incidence of stomach cancer in the UK.

The OG subgroup is therefore in agreement that there is currently no compelling evidence for screening for stomach cancer in the UK."

Please do not hesitate to contact me should you require any further information.

Thanks,

Kate

Dr Kate Young

Clinical Research Fellow to Professor David Cunningham, GI Research Unit

The Royal Marsden NHS Foundation Trust

Email: xxxx xxxx

Phone: xxxx xxxx