

# **REVIEW OF REFERRALS TO COLPOSCOPY CLINIC**

**RESEARCH REPORT  
FOR THE NATIONAL CERVICAL SCREENING PROGRAMME**

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## FOREWORD

Dr Sheryl Jury carried out this research as part of her work as a Public Health Medicine Registrar with the National Screening Unit (NSU) during 2004.

The views expressed are those of the author and may not represent the views of the NSU.

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## **ABSTRACT**

### **Introduction**

The content of referral letters determines which patients get seen with what priority. Referrals to a Colposcopy Service were reviewed as there were concerns that inappropriate or inadequate referrals from primary care could be impacting on the service provision and waiting times for all women.

### **Objectives**

To provide a baseline description of referral content to the Colposcopy Service to characterise service utilisation, particularly for women requiring appointments within one month.

### **Methods**

Referral adequacy and appropriateness was defined. A literature review was conducted looking at the broader categories of audits of primary care referrals against guidelines, variations in referral rates and the most effective ways of feedback about referral quality. Over twelve weeks a prospective review of consecutive referrals was done. This involved comparison with a minimum referral data set and recording the outcome of the grading assessment. The clinical outcomes for women requiring appointments within one month were correlated with their referral reasons.

### **Results**

208 referrals were received, most for women aged between 20-39 years. Around two thirds of referrals (68%) were from primary care, with referrals from Family Planning Association making up a further 20%. Just over half of the referrals received were for low grade cytology or non-urgent reasons (47% and 4% respectively), the outcomes for these women were not analysed further.

Referrals received for each of the three high grade categories: CIN 2 and 3, ASC ?High grade or ASC ?H/L, and referrals with urgent clinical features such as post coital bleeding made up 14% each. These women all received appointments within one month. Referrals containing high grade cytology results (CIN 2 and 3) were much more likely to correlate with a high grade condition requiring treatment and ongoing management at clinic, with referrals for urgent clinical features having the least yield (almost 60% having normal findings on colposcopy).

National Health Index numbers were included on 72.6% of referrals. Only 23% of referrals had the doctors' medical council number available despite this being a mandatory element present on many other forms that the GP would electronically generate every day.

Almost half the referrals were received by the clinic by the next day after they had been written. Only 29 % of referrals received were hand written with the vast majority being in a computer generated format.

96 % of referrals were deemed to be appropriate to be sent to the service (n=199). Of the nine referrals that were inappropriate, three were more appropriate to be sent to a general gynaecology clinic, three had a single low grade result, one was for absent endocervical cells and two could have been managed by either review with another primary care practitioner (i.e. if part of a group practice) or clinical review in 6-12 months.

Twenty-one referrals were felt to be inadequate (~10%) usually because the cytology results were not included (nineteen referrals). There were two referrals that appeared to have come through incompletely on faxing.

## **Discussion**

This study, which aimed to evaluate referral quality, highlights generally fast and appropriate communication with the colposcopy service evaluated. There appeared to be under-inclusion of potentially useful clinical and administrative information, which are suggested as areas for improvement. Missing clinical information related particularly to completeness of screening histories and associated symptoms in women referred, due to cytological abnormalities.

Computer generated referrals create opportunities in speed of referral generation and transmission (for primary care) but also can result in a disorganised presentation unless edited. Structured referral templates would greatly improve the consistency of data included in referrals. Quick and easy access to guideline flowcharts electronically may also be beneficial although almost all referrals for cytological abnormalities complied with these guidelines. Referrals for urgent clinical features such as post coital bleeding had far less pathology found on colposcopy than other groups. This may well be an area where further research could clarify optimal management as there is little written in the literature.

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## GLOSSARY

ADHB	Auckland District Health Board
ASCUS ?H or ASC ? H or ASC ?H/L	Atypical Squamous Cells of Undetermined significance ( but appearances raise the possibility of a high grade lesion or cannot be differentiated)
CIN	Cervical Intraepithelial Neoplasia (Grades 1-3)
DHB	District Health Board
FPA	Family Planning Association
HG	High Grade
HPV	Human Papilloma Virus
LG	LOW Grade
NCSP	National Cervical Screening Programme
NHI	National Health Index
NUCF	Non Urgent Clinical Features
PMS	Practice Management System
UCF	Urgent Clinical Features

## **INTRODUCTION**

The National Cervical Screening Programme (NCSP) is New Zealand's nationally organised cervical screening programme. The programme aims to reduce the incidence of and mortality from cervical cancer by detecting pre-cancerous changes of the cervix when early treatment provides a better health outcome. The area of colposcopy referrals was selected for review because of concerns about the appropriateness of the content of referrals that potentially was having flow on service utilisation impacts for waiting times for all clients.

### **Aim**

- To identify whether practitioners are referring appropriately to Auckland District Health Board (DHB) Colposcopy Clinic.

### **Objectives**

- To provide a baseline descriptive audit of referrals to Auckland DHB Colposcopy Service and feedback to the Colposcopy Service, referrers, and NCSP with respect to improvements that could be made
- To assist future revisions of the "Guidelines for Management of Women with Abnormal Cervical Smears" publication
- To determine the feasibility and value of performing this type of audit with other DHBs

### ***Questions we wanted answered***

- Type of smear resulting in referral for colposcopy and the compliance with the "Guidelines for management of women with abnormal cervical smears" publication
- Age of women referred
- Relative proportions of sources of referral
- Screening versus clinical concern
- Data elements commonly missing from referrals
- Type of referral format in use currently i.e. handwritten, typewritten, standard form, computer generated (which could be related to uniformly missing elements)
- The need for a standardised referral template

## METHODS

Prospective review of consecutive referrals was done over twelve weeks (January- April 2004). Data was entered into, and analysed using Microsoft Excel. Relevant mandatory data elements for referral were derived from:

- Information considered standard in publications from local DHBs,
- Elements defined as critical for the elective referral letter in the literature (1)
- Clinical data confirmed by the ADHB Colposcopy Services Clinical Director, as a minimum set necessary to enable an appropriate grading to be allocated.

There are no strictly defined criteria of appropriateness for referrals. In this study we are really using the term at a population level – i.e. related to a health system that is constrained by resources and concerned to manage resource utilisation. In different referral contexts – i.e. general outpatients referrals, other studies have used this term to ask the question whether more could have been done prior to referral (2). For this study inappropriate referrals were defined in the pilot process as those that:

- would be better served by attendance at another clinic e.g. gynaecology
- may have been able to be dealt with by review in primary care
- did not meet the criteria for referral as defined in the “Management Guidelines for Abnormal Smears” (3)

Inadequate referrals were defined as those containing insufficient information such that the ability to grade the referral was compromised – usually such that a delay resulted while clinic staff used time and resources seeking further information from the referrer.

The data collection tool was developed, piloted and revised utilising approximately twenty five referrals in the month prior to the commencement of the review (December 2003). Logic behind the collection of various elements is contained in the proposal submitted to the Service Manager at National Women’s Hospital for authority to proceed. No uniquely identifying information was collected about any referrals.

A preliminary literature scan did not locate any articles specifically about the quality of the content of referrals to colposcopy services. A literature review was part of the initial stages of this project looking at the broader categories of audits conducted of primary care referrals against guidelines, variations in referral rates and the most effective ways of feedback about



referral quality. Histological results (where available) were used in preference to cytology results in the correlation with clinical outcomes presented in this analysis for those women graded as requiring appointments within one month.

### **Description of the grading process**

Referrals for grading are received both within the department and at the central referrals office. They are logged into the hospital information system, NHI numbers checked or found and cervical screening register information history requested and attached to the referral. Referrals are then sent to the clinic where they are stamped. They are then scrutinised by the consultant, and a decision is made as to the priority for the woman's first appointment; this usually happens weekly alongside the actual colposcopy clinic although urgent incoming referrals are also scanned regularly. Grading, based on the cytology and clinical information supplied, results in allocation into one of the categories depicted below, essentially differentiating between potentially serious pathology and potentially not.

**Figure 1: Colposcopy Grading Stamp**

<b>Colposcopy Clinic Referral Grading</b>
<input type="checkbox"/> <b>Invasive Carcinoma – within 1 week</b>
<input type="checkbox"/> <b>High Grade CIN2-3/AIS – within 4 weeks</b>
<input type="checkbox"/> <b>ASCUS ?High Grade – within 4 weeks</b>
<input type="checkbox"/> <b>Urgent Clinical Features – within 4 weeks</b>
<input type="checkbox"/> <b>Low Grade HPV/CIN1/ ASCUS(L) – within 6 months</b>
<input type="checkbox"/> <b>Non Urgent Clinical Features – within 6 months</b>
<input type="checkbox"/> <b>Refer back to GP</b>

After grading, referrals are then returned to the referral centre, grades entered into the clinical information system and then returned for the scheduler to organise an appointment. Unless notice is short, women are generally sent a letter informing them of their clinic date/time. If their appointment cannot be immediately allocated (those to be seen within six months) both the woman and her general practitioner are sent letters informing them of the likely waiting time. There are dedicated appointments for those needing to be seen most urgently.

## RESULTS

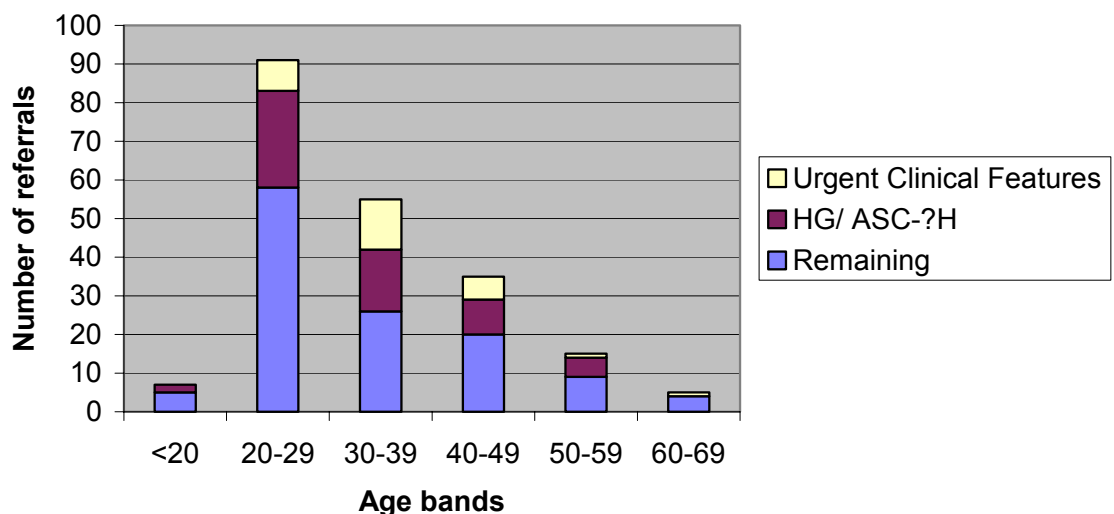
### Referrals received and the grading process

209 referrals were received. These referrals represent approximately 30 % of the referrals likely to be received in a year. One was excluded (a woman living out of area and consequently was forwarded on to the service in the relevant catchment) leaving a study population of 208.

### Age range of women referred to Colposcopy Clinic

Generally, the ages of the women at referral were between 20-69 years. Age was calculated as that at referral date. There were seven referrals received for women aged below 20 including two with high-grade abnormalities. The distribution of referrals over various age bands is presented below, along with the proportions received that made up high grade results – ASC ?H/L, CIN2, CIN3, and those graded high priority because of their clinical features – displayed as proportions relative to lower priority referrals.

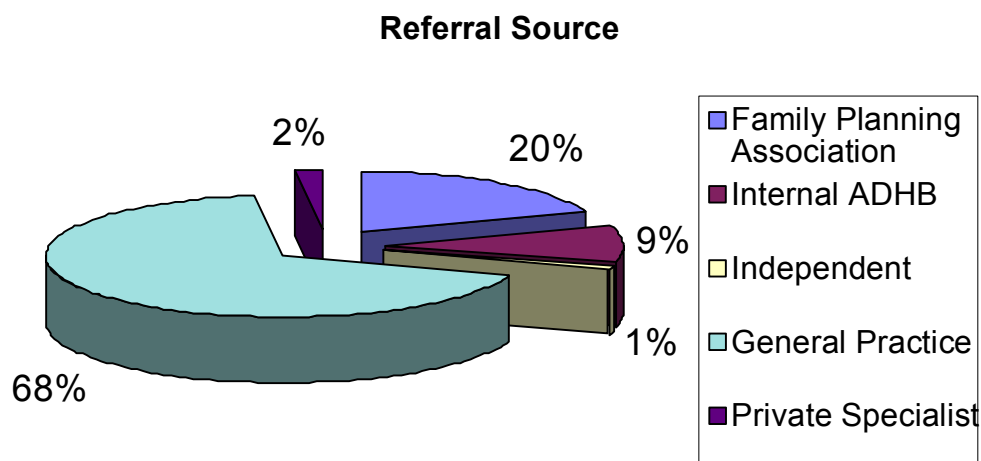
**Figure 2: Age ranges of referrals**



## Referral Source

Just over two thirds of the referrals received were from general practice (68%), with the next largest group from Family Planning Association (20%). Eight referrals were identified clearly as nursing generated (predominantly from FPA).

**Figure 3: Proportions of referrals from various sources**



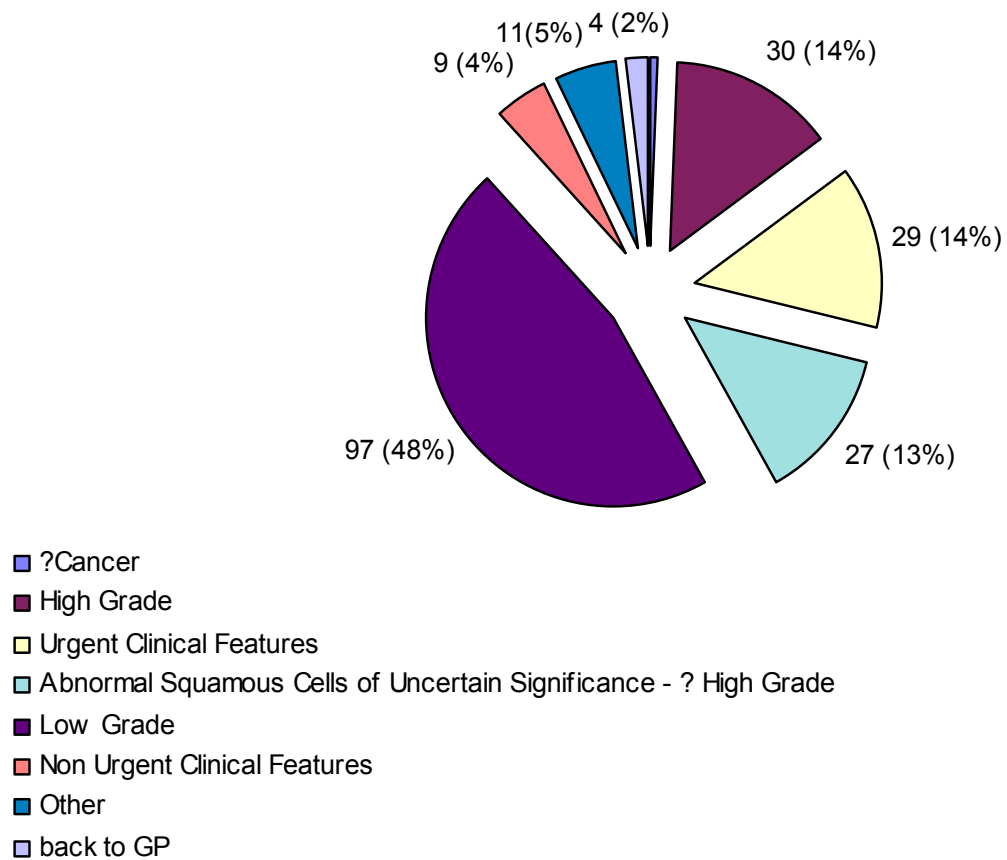
## Grading of referrals received

Just over half of the referrals received were 'low grade' (47%), or with 'non urgent clinical features' (4%). Referrals for more serious conditions made up 42% and could be more or less evenly divided into three groups:

- High grade cytological abnormalities
- ASCUS ?high grade
- Referrals with urgent clinical features such as post coital bleeding.

Referrals categorised as 'other' included women who had appointments in progress already, or were being transferred mid treatment from another DHB. The 'other' category was also utilised when modifications to waiting times were changed because of events such as pregnancy.

**Figure 4: Split of referral reason**

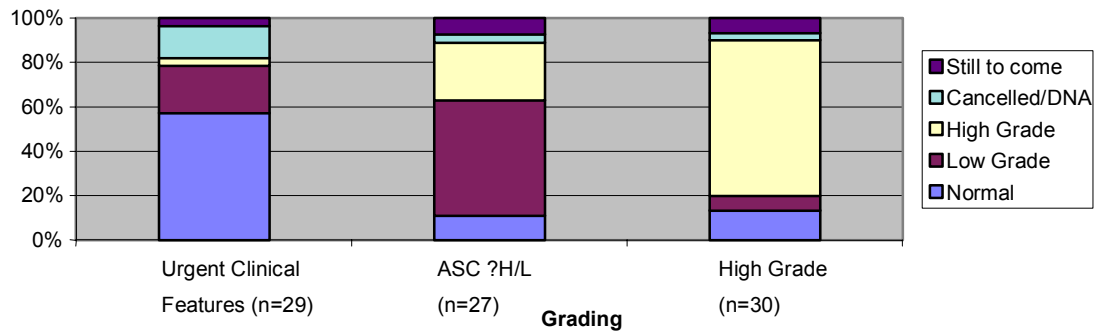


### **Outcomes for referrals with high priority gradings**

Within the timeframe of this study it was possible to correlate the gradings given on referral with the outcomes at clinic for the groups allocated appointments within a month i.e. those with HG cytological abnormalities, ASCUS ?H/L and referrals with UCF.

Figure 5 shows that referrals containing high grade cytology results (far right) were much more likely to correlate with a high grade condition requiring treatment and ongoing management at clinic (yellow shading). Of the group referred with UCF almost 60% had normal findings on colposcopy.

**Figure 5: Outcomes for referrals with high priority grading**



Only 1 referral with UCF had a high grade outcome, in comparison to referrals with high grade cytology, of which 21/30 or 70% had a high grade outcome at colposcopy. Referrals with UCF also had the highest rate of DNAs/ cancellations as a group.

### **Use of NHI numbers, inclusion of ethnicity data and requests for interpreter services**

One hundred and fifty one referrals (72.6%) contained the woman's NHI number and all but one of the referrals contained dates of birth. Thirty-four referrals (16.3%) contained the inclusion of ethnicity data and there were ten clients for whom an interpreter was suggested as necessary.

### **Name, address and NZMC numbers**

There were five referrals in which the practitioner did not include their name, but all referrals had a contact address. Of the referrals identified as coming from medical practitioners (n=198) approximately 23% included their medical council number.

### **Time between referral being written, receipt by hospital and grading**

On average, the difference between the date of writing the referral and its receipt by the referral centre was 3.3 days with 39 referrals received on the same day they were written (18.8%) and 62 referrals were received the next day (30%). Records that were not dated when written (n=6) were excluded, along with one referral, which was resubmitted after initially been graded three months earlier. The interval between receipt and grading was 6.1 days.

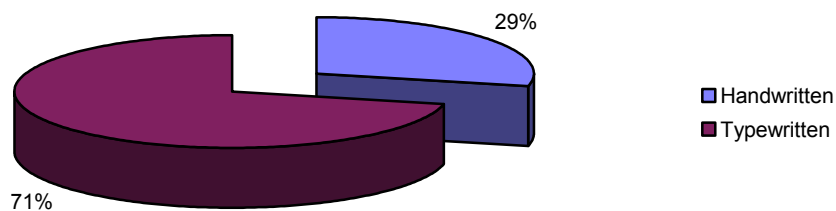
## Interval between smears being taken and date of referral

This was slightly imprecise in that sometimes the date that the smear was physically taken was included; otherwise it was recorded as the date of receipt by the laboratory. Generally however for those referrals for which this interval was relevant and able to be calculated (i.e. referrals for abnormal cytology, n=167) the median time between the smear being taken and referral written was 11 days, the average was 18 days and the range from 0-169 days.

## Types of referrals

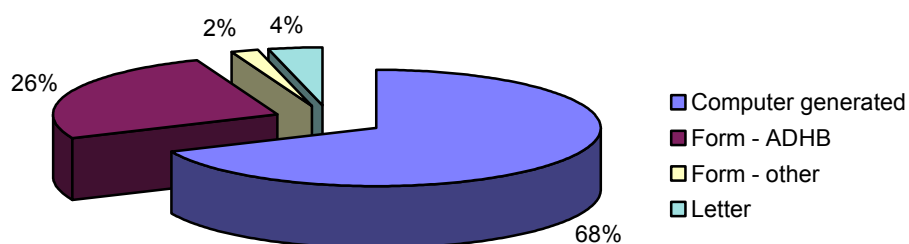
Almost three quarters of all referrals were received were typewritten. When referrals from general practice were considered separately (n= 167) the proportion type/hand written remained the same.

**Figure 6: Referral handwritten vs. typewritten**



When the format of the referral was considered the vast majority are computer generated with about a quarter of referrals utilising DHB forms.

**Figure 7: Referral format**



## **Referrals for abnormal cytology: inclusion of past screening history and symptom information**

Eighty percent of referrals were because of abnormal cytology (n=167). Just less than three quarters of these made no mention of whether the woman had any associated symptomatology, or was asymptomatic (74%, n=123).

Of the total 208 referrals there were around ten percent (10.6%, n=22) that did not include an adequate history of the woman's past screening history. In order for the referral to be graded, reference to the National Cervical Screening Register was necessary or the GP had to be contacted to clarify cytology results. The clinic has a process whereby all women referred who are on the cervical screening register, have a printout of their screening history appended to the back of the referral prior to grading. It was frequently obvious that screening histories included from primary care were incomplete compared with the information on the Register, or they were reliant on the history printed by the laboratory with the current cytology report. The tendency of women to move providers exacerbates the incompleteness of records.

## **Inclusion of information on current medications and/or allergies**

Only 38% of referrals (n=79) included information on any current medications the women were taking (or if they were on no medications) only 25% included information on allergies.

## **Appropriateness and referral adequacy**

199 referrals were felt to be appropriate to be sent to the service (~96%). Of the nine referrals deemed inappropriate, three were more appropriate to be sent to a general gynaecology clinic, three had a single low grade result, one was for absent endocervical cells and two could have been managed by either review with another primary care practitioner ( i.e. if part of a group practice ) or clinical review in 6-12 months.

Twenty-one referrals were felt to be inadequate (~10%) usually because the cytology results were not included (nineteen referrals). There were two referrals that appeared to have come through incompletely on faxing.

## **DISCUSSION**

This study, which aimed to evaluate referral quality, highlights the generally fast and appropriate communication with the colposcopy service evaluated. There appeared to be under inclusion of potentially useful clinical and administrative information, which are suggested as areas for improvement. Missing clinical information related particularly to completeness of screening histories and associated symptoms in women referred for to cytological abnormalities. Inevitably there is a diversity of confidence and skill levels of general practitioners and the threshold for referral may be shaped by perceptions of the quality and accessibility of the secondary service on offer and the client's desire for referral (4).

### **Studies of referral letters**

Over a quarter of referrals lacked the woman's NHI number as part of the missing administrative information. In only 23% of referrals did the referring clinician include a medical (or nursing) council number. This is a mandatory element for ordering any form of investigation. For computer generated referrals (two thirds of the sample) this element is routinely populated onto all prescriptions and laboratory order forms used by these practices. The levels of recorded medication and allergies is similar to that seen in other referral reviews (5)

Tattersall *et al.*, 2002, comment that studies of referral letters consistently report that specialists are dissatisfied with their quality and content. Numerous articles in the literature examine the preferred content of general practitioners referral letters to their specialist colleagues and some also try to correlate the impact of the content of the referral letter on patient management and hospital efficiency (6-10). The concerns most often expressed are the frequent absence of an explanation for referral, medical history, clinical findings, test results and details of prior treatment. Missing reports of previous investigations and insufficient detail in the referral letter to specialists are the most serious and common problems (1,11,12).

### **Computer generated referrals**

Computer generated referrals now make up 68% of referrals received, compared with ten years ago when the potential of electronic information exchange was just emerging (13). This creates opportunities in speed of referral generation and transmission. A feature of primary care PMS is the ability to drag and drop the last consultation in entirety into the referral, and



it is also easy to insert a summary of key medical conditions and history, current medications and any medical warnings such as allergies. However inserting the current consultation, as it is recorded in primary care, often results in a disorganised presentation unless the referral is edited. This was a striking feature of many of the referrals viewed in this study.

There are clear advantages of having a structured format for referral letters, including the use of headings to act as triggers for the sender as to what information to include, and to allow the recipient to easily identify the information required. Setting up of document templates within primary care practice management systems (PMS) that either automatically populate with required information or insert prompts to trigger responses from the referrer is straightforward. Designating the content of these templates is as easy as 3-4 mouse clicks, This is a quality issue around fully utilising the capabilities of the primary care PMS.

It takes the clinic considerable time taken to append NCSP histories but frequently it seems this information is not completely available in general practitioner records. The role of the Register will only enlarge as more data is accumulated over time. Examination of the interface between the Register and primary care may be of value to enable synchronisation of information in both areas

### **Time taken to refer and use of guidelines**

A study of referral (for epithelial ovarian cancer) found that time taken between first attendance at the general practitioner with symptoms and referral was relatively short (two weeks) (14). Referral for colposcopy is often a relatively straightforward clinical decision (and an area for which clear referral guidelines exist) compared with that of the more generalised array of symptoms that ovarian cancer might present with. Knowing when to refer (if you are not sure as a doctor) is dependent on having timely access to guidelines that quickly (and ideally prospectively) answer your clinical question. Hard copies of the management guidelines for abnormal cytology are widely available with a summary flowchart that is easy to use.

It seems logical as most referrals are generated electronically that access to guidelines electronically would fit best with workflow. However, even general practice with an ADSL connection, can take more than 5 minutes to go to the New Zealand Guidelines Group, find the 'Management guidelines for women with an abnormal smear', and wait for the pdf file to open. This is not pragmatic (although better than at the Elective Services website where the

links didn't work at all on the day this was tried). Busy clinicians need management flowcharts to open as opposed to having to scroll through a wordy document. Other PMS may have embedded guidelines, which would be far quicker to access, and something that the National Screening Unit could pursue with the primary care PMS vendors (as there are relatively few of them), the Elective Services, MoH or specific primary care organisations as they work on other initiatives.

For many reasons the availability and use of guidelines has been shown to be beneficial. It has been shown that GPs respond to guidelines for referral with more informative referrals which meet the referral criteria (15) and that guidelines can be effective in promoting change in health care practice(16, 17). In a randomised controlled trial of the effect of radiology guidelines on GP referrals for services, Oakshott et al. concluded that referral behaviour could also be further improved by audit and peer review (18). Hill et al. showed that introduction of guidelines, although very successful in increasing appropriate referrals in the short term, was not sustained at two years without further education and promotion (19). Extraction of guideline recommendations with insertion into electronic decision support systems and electronic guideline adherence feedback is thought to be the most effective implementation strategy (20). Having guidelines available greatly facilitates the grading process.

### **Categories of referrals**

Two populations of women are referred to colposcopy services – those requiring colposcopy resulting from screening and those who are presenting with symptoms. Women with persistently inadequate smears have been found to be at negligible increased risk of harbouring cervical neoplasia (21). There were only a couple of referrals received for this indication in the current sample so this message seems to be clear to primary care. Low grade referrals made up approximately 52 % of the workload, but with only a few exceptions complied with “Guidelines for management of women with abnormal cervical smears” publication. In Australia it has been estimated that 50% of the total costs of treatment to government come from the gynaecological treatment of women with CIN1 or less (22).

Examination of the outcomes of the women prioritised to be seen within a month, generally those with urgent clinical features such as post coital bleeding had less pathology found on colposcopy than the other groups. The only reference to this found in the literature was a retrospective analysis of 100 women with post coital bleeding presenting to colposcopy

clinic. Age parity and duration of PCB were correlated with histopathologic findings. 85.5% of the patients had benign findings with vascular ectopy being the most common, 5.6% HPV and CIN1, 3.6% had CIN2 and 3, and 5.5% had invasive cancer. There was no correlation between duration of bleeding and pathology (23). This may well be an area where this clinic could carry out further research into outcomes for this group.

### **Ways forward**

Reminders about electronic guidelines that exist and integrated easy access to them electronically are necessary. Deficiencies in symptom reporting, medications and allergies can be addressed partially by how the primary care practice management systems are configured and partially by working with Primary Healthcare Organisations who are interested in improving the quality of information on referrals of their members. Work could also be done PMS vendors to provide updates and training on the configuration of referral templates. There should be continuing direct feedback to GPs who are not including cytology results with referrals and inclusion of this advice in the “Guidelines for management of women with abnormal cervical smears” publication

### **Further Research**

There are opportunities for further research into the outcomes for the group receiving lower priority gradings and also a larger sample of those presenting with post coital bleeding. It would be interesting to compare colposcopy services in different DHBs.

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