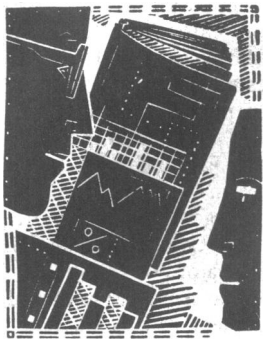
AUDIT IN PRACTICE



THIS WEEK . . .

- *In the first article Raffle et al describe the effect of implementing national guidelines for extending population coverage and increased follow up of minor abnormalities on laboratory workload and rates of referral for colposcopy in one cervical screening programme.*
- *The second article by Mr Hancock, an audit of surgical wound infection over 14 years, illustrates the excellent results that may be achieved with limited resources.*

Six years' audit of laboratory workload and rates of referral for colposcopy in a cervical screening programme in three districts

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Abstract

***Objective*—To determine laboratory workload and rates of referral for colposcopy in a three district cervical screening programme during 1983-9 to assess the feasibility of accommodating call up of all women at risk, recall at three year intervals (now five year intervals), and investigation of women with all degrees of abnormality.**

***Design*—Analysis of computerised screening histories dating back to 1977 of women screened in the Avon cervical screening programme.**

***Setting*—Three district health authorities covering the population of Bristol and Weston-super-Mare, comprising 800 000 people, of whom 250 000 were female residents aged 20 to 64.**

***Subjects*—196 977 Women aged 20 to 64 screened in cervical screening programme since 1983.**

***Results*—Laboratory workload devoted to follow up of women with abnormalities increased sharply between 1987-8 and 1988-9, with increases of 54% (from 2075 to 3196) in the number of smears for follow up of severe dyskaryosis and invasive cancer, 40% (from 1925 to 2695) for mild and moderate dyskaryosis, and 49% (from 1793 to 2677) for borderline change. The increases were partly explained by the introduction in April 1988 of protocols for follow up and investigation based on guidance in an intercollegiate working party report. The proportion of women with mild and moderate dyskaryosis who were recommended for referral for colposcopy increased steadily from 9·9% in 1983-4 to 79·9% in 1988-9, and for borderline change the proportions were 3·5% and 13·6% respectively. Of all women tested in 1988-9, referral for colposcopy was recommended in 3%.**

***Conclusions*—The increase in laboratory follow up work identified, if it continued, could result in half of existing laboratory capacity in Avon being devoted to follow up work by 1993, with little prospect of maintaining call, recall, and quality control. Investigation of all women with minor cytological abnormalities is neither justifiable nor sustainable and will undermine the benefits of screening by increasing the rate of false positive results and the financial costs.**

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Introduction

The decline in mortality from cervical cancer in British Columbia after the introduction of organised screening[1] and the findings of a study of eight countries that analysed the protective effect of smear tests[2] provide persuasive evidence that cervical screening can be effective in preventing cervical cancer. There are, however, disadvantages to screening; these include anxiety and even iatrogenic illness for women judged to have abnormal findings on screening but who would not have developed the disease (false positive results) and aggrievement for those judged to have normal findings on screening who subsequently do (false negative results). The anxiety caused to healthy women by cervical screening has been reported,[3] and the bitterness associated with false negative results may be such that individual women may take legal action even when no fault has occurred.[4] Another problem with cervical screening is its questionable cost effectiveness.[5] Recent advice from the Department of Health[6] and an intercollegiate working party[7] recommends extending population coverage by screening to all women aged 20-64, screening at three year intervals, and investigating even minor abnormalities disclosed on smear testing. This advice has substantial resource implications: extending population coverage should improve the effectiveness of screening but investigating minor abnormalities will mean troubling many women who will never develop cervical cancer, and, together with the change from five yearly to three yearly screening, will reduce cost effectiveness.

There are insufficient published data on laboratory workload or referral rates for colposcopy to allow examination of the feasibility of following the various policy options for screening, follow up, and investigation. In Avon, faced with the Department of Health's guidance[6] at a time of worsening shortage of laboratory staff, three decisions were made. The first was to concentrate on reaching women who had never been screened. Women registered with our general practitioners but without a record of a smear test were therefore invited for screening. To free laboratory capacity to cope with this workload all routine screening of women without symptoms was limited to a five year interval. From April 1988, after consultation with service providers and with local community health councils, smears taken opportunistically less than four years and nine months from the date of a previous smear test were returned unprocessed with a covering letter. The second decision was to revise our protocols for following up and investigating minor abnormalities according to the guidelines of the intercollegiate working party report. Until April 1988 only women with severe dyskaryosis were recommended routinely for referral for colposcopy. Those with mild and moderate dyskaryosis and borderline change were generally referred only if these abnormalities persisted after two repeat smear tests at yearly intervals. From April 1988 referral for colposcopy was routinely recom-

mended for moderate dyskaryosis as well as for severe dyskaryosis and for mild dyskaryosis and borderline change if they persisted at a repeat smear test after six months. The third decision was to audit the work of the screening programme to define current practice, assess the effect of the altered follow up protocols, and explore the feasibility of performing screening at three year intervals, which, in view of the lack of available information about screening workload, was considered to be of value to others concerned with policy and management of cervical screening.

The audit was designed to determine: (*a*) the laboratory workload for the screening programme, the proportion devoted to follow up, and for what indication and how this was changing; (*b*) the number of women with severe dyskaryosis and invasive cancer, with mild and moderate dyskaryosis, and with borderline change referred for colposcopy each year; and (*c*) the number of "extra" smears—that is, those in excess of one per woman per five years—performed and the effect of the policy of limiting opportunistic screening on this workload.

Methods

The Avon cervical screening programme is run from the Southmead Hospital pathology laboratory and serves the district health authorities of Southmead, Bristol and Weston, and Frenchay. The total catchment population of 800 000 includes the residents of Bristol and Weston-super-Mare. The number of female residents aged 20 to 64 is around 250 000, and the proportion of the population in social classes I, II, and III is slightly higher than in England as a whole. Smears are examined at the pathology laboratories at Southmead Hospital (90%) and at Bristol Maternity Hospital (10%). The results of all smears processed since 1977 are held on a DEC Microvax computer using MUMPS software, and all were included in the audit. Smear test results were classified according to the guidelines of the British Society for Clinical Cytology[8] using the national request/report form HMR101/5/1982. For the audit the smear test results were divided into three categories: severe dyskaryosis and invasive cancer (including carcinoma in situ, glandular neoplasia, and anaplastic carcinoma), mild and moderate dyskaryosis, and borderline change (table I).

Since computing became on line in 1988 detailed matching of all records has been performed regularly to ensure that no duplicate record exists for any patient. Records were held on 269 288 women with 571 410 smear test results. Smear tests performed in private hospitals and in genitourinary medicine clinics (some 2% of all results held) were not included in the audit. The estimated population coverage during 1983-8 for women aged 20-64 was between 71·8% and 78·2%, depending on whether family practitioner committee registrations or Avon County Council population figures were used as the denominator.

A year was determined to run from 1 April to 31 March, in accordance with Körner data. Age was taken as age at the end of the time period of analysis. A smear test was counted as one examination, irrespective of how many slides were examined.

Laboratory workload—Smears examined during 1983-9 were divided into three categories according to the previous screening history of the individual woman having the test: (*a*) first smears (no previous test on record), (*b*) routine recall smears (five year recall interval recommended after the previous result), (*c*) follow up smears (recall interval shorter than five years recommended after the previous result). Follow up smears were subdivided by reason for follow up. This was determined by the most serious abnormality previously recorded for that woman. In some women a recall interval of less than five years was recommended despite no previously recorded abnormality. Follow up smear tests on these women were categorised as follow up for other reasons and included repeat tests after inadequate smears and follow up for inflammatory change, genital warts, abnormal appearance of the cervix, abnormal clinical history, or a history of abnormal findings in tests performed elsewhere, for which no record was available.

Referrals for colposcopy—For each woman in whom an abnormality was detected the screening record was examined to see whether referral for colposcopy had been recommended within the time of the analysis. A cumulative five year analysis and six individual analyses by year were performed.

"Extra" smears—The laboratory work in excess of one smear per woman per five years was estimated by comparing the number of smears performed in five years with the number of women screened. To assess the effect of restricting opportunistic screening from April 1988 the workload during 1983-8 was compared with that during 1984-9.

TABLE I—*Classification of abnormalities on smear testing* and comparison with Körner data*

Result	Avon data	Körner data
1 Inadequate	Inadequate	Inadequate
2 Negative	Negative	Negative
3 Mild dysplasia	Mild and moderate dyskaryosis	Abnormal
4 Severe dysplasia or carcinoma in situ	Severe dyskaryosis and invasive cancer	Positive
5 Carcinoma in situ? Invasive		
6 Glandular neoplasia		
7 Anaplastic carcinoma†		
8 Borderline dyskaryosis‡	Borderline change	Negative
9 Doubtful or borderline dyskaryosis†		

*According to British Society of Clinical Cytology.[8]
†Local codes used only by Bristol Maternity Hospital pathology laboratory.
‡Local code used by both laboratories.

Results

Table II shows laboratory workload since 1983-4 subdivided into follow up smears, routine recall smears, and first smears. Laboratory work rose until 1987-8. It fell in 1988-9 because of an acute shortage of medical laboratory scientific officers; sending of recall invita-

TABLE II—*Number of smears (total 310 796) examined, according to reason for test, Avon, 1983-9*

Reason for test	Year					
	1983-4	1984-5	1985-6	1986-7	1987-8	1988-9
Follow up:						
For borderline change	687	961	1 403	1 683	1 793	2 677
For mild and moderate dyskaryosis	635	823	1 185	1 567	1 925	2 695
For severe dyskaryosis and invasive cancer	1 265	1 309	1 609	1 901	2 075	3 196
For other reasons (including repeat smears because of inadequate initial smears and follow up due to clinical indication)	2 866	3 415	4 913	4 910	4 190	4 806
First smears (first smear test on record)	18 673	18 181	19 563	17 363	16 418	11 458
Recall smears (routine repeat smears whether scheduled or opportunistic)	22 049	24 720	28 045	29 276	31 286	19 275
Total	46 175	49 409	56 718	56 700	57 687	44 107

One smear represents one examination irrespective of the number of slides examined.
Reason for follow up is that of the most serious smear test result recorded previously.

tions was suspended for several months to enable the backlog to return to its usual size of two weeks' work. First smears decreased slightly in 1985-6. Follow up work increased for all grades of dyskaryosis and for borderline change, particularly between 1987-8 and 1988-9, with increases of 54% for severe dyskaryosis and invasive cancer, 40% for mild and moderate dyskaryosis, and 49% for borderline change. These increases were only partly explained by the increasing number of new abnormalities. New abnormalities detected in 1988-9 were fewer than in 1987-8, yet the rate of follow up work rose between the two years. The increase in follow up work therefore owed much to the revised protocols introduced in April 1988 that altered the management of mild and moderate dyskaryosis and borderline change. Under the new protocol repeat smears were performed six monthly instead of annually, thus doubling the number of tests. The protocol also resulted in investigation for almost all women, even those who previously would not have been investigated because their smear test results would have reverted to normal within two years. The increase in follow up work for severe dyskaryosis and invasive cancer was not directly explained by the changes in protocol and requires further analysis; it was presumably due to more frequent smear tests on women with these abnormalities. There may also be a growing reluctance to return these women to routine recall after 10 years of annual tests, as has previously been usual practice in Avon. Follow up for other reasons (repeat smears because of inadequate initial smears and follow up of inflammatory change, genital warts, signs and symptoms, or uncertain history) increased up to 1985-6 and then levelled off. About 1·3% of smears examined were found to be inadequate, and information on adequacy of smears was sent to those taking the smears to minimise this proportion. It seems that criteria for recommending these follow up smears were not changing but, given the size of the workload, the value of some of this work may need to be examined.

Table III shows the proportion of women with severe dyskaryosis and invasive cancer, mild and moderate dyskaryosis, and borderline change who were referred for colposcopy each year and for the five years from 1983 to 1988. The proportion of women with borderline change and with mild and moderate dyskaryosis who were referred increased substantially but gradually. For severe dyskaryosis and invasive cancer referrals did not increase beyond 69·6% in 1985-6. Analysis of records for women with severe dyskaryosis and invasive cancer during 1987-8 confirmed that all were receiving specialist follow up: the reason that the referral rate in women with new severe dyskaryosis and invasive cancer lesions was below 100% was because of previous referral after a lesser grade of abnormality. Increasing referral rates for colposcopy led to an overall increase in the proportion of screened women who received specialist investigation. In 1988-9 the number of women referred for colposcopy represented 3% of all women tested. Five year analysis of detection rates in all women tested during 1984-9 suggested that with investigation of all grades of abnormality the proportion of women investigated by colposcopy would increase to 5·3%.

Table IV shows the number of smears performed in excess of one per woman per five years, according to follow up and non-follow up smears. Non-follow up smears decreased from an average of 15 per 100 women screened to nine per 100 women screened from 1983-8 to 1984-9, confirming that returning smears unprocessed reduced early opportunistic screening, as intended. It had been suggested that early recall smears would instead be submitted as tests for spurious clinical indications or special risk factors, but had this occurred the number of these extra smears would not have decreased. Follow up smears were more frequently performed in women aged over 35 than in those under 35 whereas non-follow up smears showed the reverse age distribution.

TABLE IV—*Extra smears performed per 100 women tested (assuming the standard of one smear/woman/five years) during 1983-8 and 1984-9. (Number of subjects = 197 030)*

	Time period	
	1983-8	1984-9
Non-follow up smears (opportunistic smears taken before 5 year recall and diagnostic smears)	15	9
Follow up smears (for a previous abnormality or indication)	22	25
Total	37	34

Discussion

The audit described the laboratory work and rate of referrals for colposcopy for a cervical screening programme serving a quarter of a million women aged 20-64. We were unable to find published data on screening workload to allow comparison with similar programmes elsewhere. Computing arrangements for cervical screening in Avon are unique and were developed with audit and research in mind whereas data produced by the national standard (Exeter) system are mainly concerned with day to day management of call and recall and do not enable an overview to be taken of the entire screening workload.

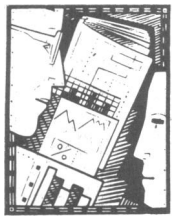
The overall laboratory screening capacity in Avon fell recently due to shortage of trained staff, highlighting the need to use the available laboratory resource to the maximum effect. Restriction of opportunistic screening to five year intervals has proved feasible, and call up of the 80 000 or so unscreened women in Avon has progressed successfully: all unscreened women aged 35 to 64 will have been invited by June 1990, and the response has been good. Of those called up in January 1989 (1306 aged 35), over half of those eligible for smears were tested.

Laboratory follow up workload and referrals for colposcopy increased in Avon since 1983, partly owing to increasing numbers of abnormalities detected, as the programme is reaching more women and detection rates for mild and moderate dyskaryosis are increasing in women aged under 35 (data not shown). The

TABLE III—*Number of women with severe dyskaryosis and invasive cancer, mild and moderate dyskaryosis, and borderline change detected for the first time and percentage (number) referred for colposcopy annually, and during five year period 1983-8*

	1983-8		1983-4		1984-5		1985-6		1986-7		1987-8		1988-9	
Category of abnormality	No	% (No)	No	% (No)	No	% (No)	No	% (No)	No	% (No)	No	% (No)	No	% (No)
Severe dyskaryosis and invasive cancer	2 527	63·6 (1 606)	331	56·2 (186)	362	68·2 (247)	562	69·6 (391)	627	64·4 (404)	645	66·5 (429)	635	56·2 (357)
Mild and moderate dyskaryosis*	2 428	54·3 (1 319)	335	9·9 (33)	399	29·3 (117)	511	46·6 (238)	681	58·4 (398)	902	68·4 (617)	871	79·9 (696)
Borderline change*	4 118	9·5 (393)	664	3·5 (23)	746	5·6 (42)	924	8·4 (78)	1 103	10·9 (120)	1 593	10·4 (165)	1 456	13·6 (198)
No of women tested	194 198		44 351		47 308		54 181		53 810		54 381		40 707	

*Total for annual figures exceeds that for five year analysis because women whose condition subsequently progressed were excluded from five year total.



workload, however, is increasing disproportionately to the number of abnormalities detected, and this owes much to a higher frequency of follow up smears and to changing thresholds for instigating cytological follow up and referral for colposcopy. Some of the change has been gradual, but the introduction of the revised follow up protocols for mild and moderate dyskaryosis and borderline change resulted in a sharp increase in laboratory follow up work. After only one year with these protocols laboratory follow up for mild and moderate dyskaryosis and borderline change combined increased by 47% (1654 smears). The new follow up guidelines were applied for only one year—that is, to about a fifth of our screening population. This suggests that by 1993 cytological follow up work in Avon for mild and moderate dyskaryosis and borderline change might require examination of some 12 000 smears, which would use about a quarter of our usual laboratory capacity of 50 000 smears per annum. If follow up work for severe dyskaryosis and invasive cancer also continued to increase all follow up work would consume about half of the existing laboratory capacity by 1993 with little prospect of maintaining call, recall, and quality control. The category of "other" follow up work, although not increasing, forms a substantial workload and is being examined more closely, as is the reason for the increase in follow up for severe dyskaryosis. Laboratory follow up work and rates of referral for colposcopy are probably increasing similarly elsewhere. A survey in the West Midlands region disclosed that already some colposcopists were questioning the demand made on their time and resources by the investigation of minor abnormalities.[9]

The pressure to follow up and investigate women with minor abnormalities arises because of the inherent imperfections of screening. Cervical cytology gives only an indication of risk and cannot distinguish absolutely between women with certain presymptomatic disease and those without.[10] Screening cannot be expected to detect all potential cases of disease, yet investigation of all women with minor abnormalities has been advocated in an attempt to achieve just this. Unfortunately, pursuing this approach increases the costs of screening while doing little to improve its effectiveness. There is no "correct" protocol for determining action on the basis of screening test results; it is a matter of judgment between the benefits and costs.

The debate over who to refer for colposcopic assessment and when to do so is complicated by the subjective nature of cytological and histological diagnoses and the elusive natural course of cervical disease. Most women with minor abnormalities will not develop invasive cancer. Robertson *et al* in a population based study of 1781 women with mild dyskaryosis managed by cytological surveillance found progression to invasive cancer in only 10 women.[11] Analysis of the outcome of surveillance of women in whom mild and moderate dyskaryosis was diagnosed in 1979 and 1980 in Avon disclosed similar findings (M Jenkins, personal communication). The aim of cervical screening is to reduce mortality from cervical cancer. The number of women registered as dying from cervical cancer in the three Avon health districts before widescale screening was not likely to be more than 50 each year (reports of the medical officer of health for the City and County of Bristol, 1963-5). Comparison with the number of women to be investigated if those with all grades of abnormality were referred for colposcopy (2081 each year in Avon assuming detection rates for 1984-9) suggests that thousands of healthy women might become worried patients. The ratio between the number of women the programme was established to help and the number undergoing colposcopy if all minor abnormalities were referred is 40:1.

The potential for screening to do more harm than good was highlighted by the controversy surrounding the introduction of breast cancer screening in the United Kingdom. Witcombe described the many difficulties of providing a breast screening service of sufficient quality to achieve a reduction in breast cancer mortality.[12] Maureen Roberts, clinical director of the Edinburgh breast screening project, writing shortly before her death from breast cancer, voiced her fears that the psychological harm resulting from the rate of false positive results and possible overdiagnosis of breast cancer could outweigh the benefits of breast screening.[13] For cervical cancer the prospect for curing women with early disease is far greater than that for breast cancer. It is essential that the benefits of cervical screening are not undermined by allowing an unacceptably high rate of false positive results.

The priorities for cervical screening are: call and recall; investigation, treatment, and follow up of severe abnormalities; and quality control. Investigation of all women with minor abnormalities is likely to jeopardise these priorities and is neither justifiable in terms of anxiety to healthy women or sustainable given the difficulties in recruiting and training laboratory staff.

In theory, screening programmes should strike a balance between sensitivity (not missing any true cases) and specificity (not investigating or treating those without the disease). In practice, the overriding priority for those concerned is not missing a case in a screened person. This discrepancy needs to be recognised, and policy guidance must enable those responsible for screening to contribute to a service that fits the available resources and that, overall, does more good than harm.

We had three main conclusions in relation to the three policy decisions made in Avon.

(1) Extension of population coverage through the call up of unscreened women and the restriction of opportunistic screening to five yearly was successful.

(2) The introduction of revised protocols for follow up and investigation of minor abnormalities, in accordance with guidelines of the intercollegiate working party report,[7] was accompanied by an increase in the laboratory workload devoted to follow up, which might jeopardise the maintenance of even five yearly call and recall and quality control.

(3) Audit of six years' work of the Avon screening programme disclosed a steady increase in the proportion of women with minor abnormalities referred for colposcopy. We estimate that referring all women with minor abnormalities would result in investigation of up to 40 times the number likely to benefit.

We thank Caroline Joy and Max Kammerling for help with the analysis, Don Simpson and Alan Carter for help in establishing computerised screening records, and Alan Sanders of the family practitioner committee for his cooperation.

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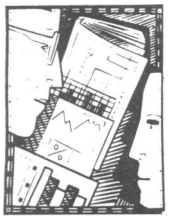

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Audit of major colorectal and biliary surgery to reduce rates of wound infection

Brian D Hancock

Abstract

***Objective*—To reduce the rates of wound infection for major colorectal and biliary surgery.**

***Design*—Prospective audit of antibiotic prophylaxis by keeping copies of typed notes of operations and annotating them at discharge and at first follow up visit and annual review of prophylactic regimen according to yearly rate of wound infection and modification if necessary.**

***Setting*—The work of one consultant surgeon working in a district general hospital.**

***Patients*—All patients having major colorectal resection during 1976-89 (400) and cholecystectomy during 1981-9 (500).**

***Main outcome measures*—Wound infection, defined as any discharge from the wound as detected by observation during inpatient stay and by specific questioning at the first follow up visit six weeks later.**

***Results*—Serial changes in prophylaxis for colorectal surgery resulted in a progressive reduction in the rate of wound infection from 43% in 1976, with no prophylaxis, to 1% during 1986-9 with single intravenous doses of metronidazole and cefuroxime intraoperatively and with lavage of the peritoneal cavity and wound with 0·1% tetracycline. During 1981-7, with no prophylaxis, the rate of infection in biliary surgery was 12% whereas in 1988-9, after the introduction of lavage with tetracycline alone, the rate was reduced to 2%.**

***Implications and action*—Simple prospective audit identified the need for changes in antibiotic prophylaxis; successive rounds of audit resulted in improved rates of wound infection, and lavage with 0·1% tetracycline seemed to be a major factor in achieving this.**

Introduction

The work of one unit with a particular interest in colorectal surgery has been the subject of continuous audit since 1976. This report shows that regular review and change in antibiotic policy in the light of previous years' experience has resulted in a progressive reduction of wound infections in colorectal and biliary surgery to the point of their virtual elimination whereas the frequency of reporting of results of clinical trials of antibiotics in surgical practice suggests that wound infection remains a significant problem generally.

Methods

RECORDING

All patients having major operations in this unit have typed notes of the operation, consisting of a preoperative note summarising the clinical problem followed by details of the operation. One copy is filed in the patient's notes and the other is kept in date order in a box file. At discharge and the subsequent follow up visit handwritten notes are made on the copy in the box file. In the clinic most of the patients are followed up by me. At the end of the year the number of operations done and the complications are readily calculated. If any facts are missing the notes may be requested at this stage before the final year's audit is produced. At the end of the year, in the light of these results, a change in practice may be considered, which then becomes a policy of the unit until further notice.

A wound infection was defined in this study as any discharge from the wound occurring before the first follow up visit at six weeks. If the discharge occurred while the patient was still in hospital, cultures were performed, but in some patients the discharge occurred later. In these cases it was not possible to decide from the patient's description whether the discharge was of pus or simply a serous discharge, and cultures were rarely performed. Any discharge from a wound, however small, had therefore been counted as a wound infection.

In the first six years of the study accurate records were kept only for patients with colorectal carcinoma, but since 1981 the study has been widened to include all major colorectal operations, elective and urgent, and patients having a cholecystectomy have been followed up in the same way.

A few deviations from the policy of the unit undoubtedly occurred. These may have been deliberate because it was thought that more extensive antibiotic cover was indicated—for example, for a cardiac lesion or to treat patients with established peritonitis or those who had unexpected contaminatiom during operation. In the early years of the audit probably not every patient was asked specifically at follow up whether an infection had developed at home, and so the figures may be a slight underestimate. In the past four years, however, in view of the falling rate of infection and increasing interest in audit, great care has been taken to record the progress of all patients.

SURGICAL TECHNIQUE

Bowel preparation for elective colorectal surgery consisted, before 1982, of two doses of castor oil and now consists of two doses of sodium picosulphate. During operation care was taken to avoid contamination from the cut end of the bowel whenever possible. No special wound guards were used, and gloves were not changed unless accidentally punctured.

Some small changes in surgical procedure occurred during the audit. Since the end of 1985 drains have been omitted, except for a suction drain after anterior resection. Paramedian incisions were used early in the study, but since the mid 1980s most colorectal operations have been performed through midline incisions. Mass closure with nylon is routine, and interrupted Dexon or Vicryl was used for skin closure throughout the study. For biliary surgery a right paramedian rectus split was used throughout, suction drains were abandoned over the past three years, and wound closure was usually with a subcuticular Vicryl suture.

Tables I and II show the details of antibiotic

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