

# The effect of four interventions on the informational content of histopathology reports of resected colorectal carcinomas

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## Abstract

**Aim**—To investigate the effect of different interventions on the inclusion of data items in the histopathology reports of resected colorectal carcinomas.

**Study population**—272 routine histopathology reports on colorectal carcinomas from the department of histopathology, Royal Hallamshire Hospital, Sheffield.

**Methods**—The presence or absence of 10 specific data items was recorded for each report. The reports were divided into five audit periods. In the initial period reports were generated using free text with no agreed guidelines. In period 2, text guidelines had been issued; in period 3, flow diagram guidelines had been issued; and

in periods 4 and 5, template proformas were attached to each specimen request form.

**Results**—All interventions produced some increase in inclusion rate for some features, but only with the introduction of template proformas did these rates approach 100% for all data items. Inclusion rates were 100% for all items in all cases reported using a proforma. In the final audit period 96% of specimens were reported using proformas.

**Conclusions**—Template proformas produce a high rate of inclusion of data items in reports of colorectal carcinoma resection specimens.

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Keywords: colorectal cancer; histopathology audit; quality control

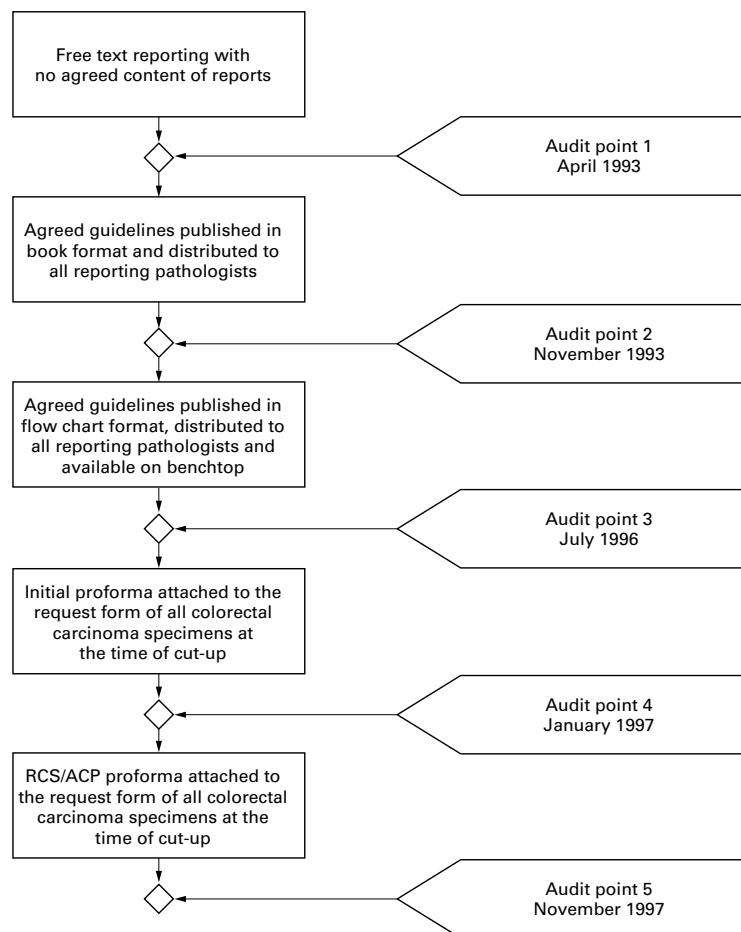


Figure 1 Flow diagram showing the audit points and described interventions during the study.

Recent publications have highlighted deficiencies in the informational content of many routine reports on colorectal cancer resection specimens.<sup>1 2</sup> The information in these reports is vital for patient management, especially the status of the circumferential resection margin and lymph nodes,<sup>3</sup> and if new technologies are to produce better estimates of prognosis then reliable and complete reporting of data items is required.<sup>4 5</sup> Recent reports have suggested that template proformas could improve the rate of inclusion of features in reports<sup>1 2</sup> but we are not aware of any published studies to support this suggestion. In this study we audited the informational content of reports at a single hospital over four years with the introduction of four interventions, including template proformas, designed to improve the rate of feature inclusion.

## Methods

The informational content of routine histopathology reports on colorectal cancer resection specimens in the department of histopathology, Royal Hallamshire Hospital, Sheffield, was audited at five points between April 1993 and November 1997. Consecutive reports from the period immediately preceding each audit point were examined and the presence or absence of specific data items was recorded by a histopathologist. Explicit statement of the data item was required, for example Dukes' stage was only recorded as present if explicitly stated although it could be deduced from the depth of invasion and lymph node status. The audit points and interventions are shown in fig 1, and

Table 1 The specific data items sought in each report and the percentage of reports which contained explicit statement of each item

	April 1993	November 1993	July 1996	January 1997	November 1997
Audit point	1	2	3	4	5
No of reports	50	50	43	61	68
Type	100%	100%	100%	100%	100%
Grade	98%	98%	100%	100%	100%
Depth of invasion	n/a	n/a	100%	100%	100%
Vascular invasion	n/a	n/a	88%	97%	100%
Circumferential resection margin	31%	68%	86%	97%	100%
Other resection margins	n/a	n/a	54%	97%	100%
Lymph node status	98%	98%	100%	100%	100%
Background mucosa	n/a	n/a	65%	97%	99%
Dukes' stage	72%	86%	100%	97%	100%
TNM stage	n/a	n/a	0%	2%	97%
Use of proforma	0%	0%	0%	84%	96%

n/a, not available.

the specific data items and number of reports examined in each period are shown in the results (table 1). The initial proforma, audited at point 4, was designed within the audited department. The second proforma, audited at point 5, was based on the Royal College of Surgeons/Association of Coloproctology (RCS/ACP) national guidelines minimum dataset.<sup>6</sup> The reporting pathologists using proformas highlighted the statements that they wished to include in the report using a marker pen, and secretarial staff typed the reports from these. Pathologists were free to choose whether they used the proformas or other means of generating a report (most commonly dictation).

### Results

The results are summarised in table 1. At audit points 4 and 5 the cases which were not reported using a proforma (16% and 4% respectively) were reported using dictation. In all cases where a proforma was used the inclusion rate was 100% for all data items.

### Discussion

It can be seen that three items—tumour type, histological grade, and lymph node status—were reported at a rate of almost 100% at the first audit, but other items, notably the circumferential resection margin, had a low rate of inclusion. The importance of reporting the status of the circumferential resection margin was first described in a widely distributed journal in 1986,<sup>7</sup> so the reporting pathologists should have been aware of this. The design and distribution of an internal set of guidelines for dissection and reporting (between audit points 1 and 2) produced a large increase in inclusion of some features (31% to 68% for the circumferential resection margin) and distribution of the colorectal carcinoma guidelines in flow diagram format for use on the benchtop produced further increases. However, it was not until a template proforma was attached to the request form of every colorectal carcinoma resection specimen that the item inclusion rates approached 100% in all categories. Use of the proforma produced 100% inclusion of all data items but its presence also increased the inclusion rates in dictated reports to close to 100%, probably by acting as an ever present aide

mémoire. The use of the proforma increased to nearly 100% with the introduction of the RCS/ACP minimum dataset proforma. This proforma has 11 more data items than our initial internally designed proforma<sup>5</sup> and it probably represents the watershed at which reluctant users assess that it is quicker to use the proforma than to dictate the report (an informal study showed that it was quicker to use the proforma than to dictate a report even with the initial proforma).

These results suggest that an effective method of ensuring an adequate informational content of reports on colorectal carcinoma resection specimens is the use of template proformas, of which the Joint National Guidelines minimum dataset (virtually identical with the RCS/ACP minimum dataset used in this study) is becoming the definitive example in Britain and Europe. As the amount of information increases in all types of histopathology reports<sup>8</sup> the proforma system may find widespread application. Its use in reporting mastectomy specimens has already been described.<sup>9</sup> Judicious use of newer information technology, such as electronic proformas with touch screen selection and implementations on the world wide web, could facilitate proforma use with greater overall efficiency for medical and clerical staff.

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