

National Audit of Generic Reporting and Effective Communication, 2007 / 2008

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On behalf of the Clinical Radiology Audit Sub-Committee of The Royal College of Radiologists

Introduction

Communication with clinicians is central to the practice of radiology. This is done predominantly by means of the radiology request card and report. The generation of a clear report in a style understandable by the requesting clinician and addressing a clinical question asked is a fundamental requirement of any radiology provider (1). As reports are increasingly sourced from alternative providers it is essential that these standards are identified and maintained. The RCR 'Standards for the Reporting and Interpretation of Imaging Investigations' (2) gives guidance for governance and reporting by both radiologists and non radiologists. This audit aims to assess compliance with standards derived from guidance applying specifically to the content of issued reports with respect to appropriate communication. The standards are shown in Table 1 together with indicators used to determine whether they had been met.

Table 1 Standards and indicators

Standards (national targets)	Indicator
1. Clinical issues should be addressed (> = 95%).	% of reports in which all clinical issues are addressed.
2. Clinical advice, when given, should be appropriate (> = 95%).	% of reports in which clinical advice, when given, was appropriate.
3. The grade of the reporter should be stated on the report (= 100%).	% of reports in which the grade of reporter was stated on the report.
4. The wording of the report should be clear (> = 95%).	% of reports in which the wording of the report was clear.
5. The reporting style should be appropriate for a GP (> = 95%).	% of reports in which the reporting style was appropriate for a GP.
6. Appropriate action should be taken in accordance with local departmental policy, for all urgent/unexpected findings (100%).	% of cases in which appropriate action was taken in accordance with local departmental policy, for all urgent/unexpected findings.

Materials and Methods

Two hundred and twenty-one NHS radiology departments were invited to participate. Consultant radiologists in each department were asked to review 50 GP requested plain film and 50 GP requested ultrasound reports for any consecutive two-week period between October 15th and November 16th 2007 inclusive. The data collection time frame was extended into 2008.

The web-based data collection tool (see Appendix) was designed using Snap Survey Software, Version 9 and data were analysed using Microsoft Office Excel 2003 and Confidence Interval Analysis, Version 2.1.2. Non-responses and don't know responses were excluded from the analysis.

One hundred and three out of 221 (47%) NHS departments participated. One independent sector treatment centre participated. Data on 7208 reports were received. Only 29% (64/222) of audit leads submitted demographic data. These data are displayed in Tables 5 – 10 and Figure 1 in Appendix 1.

The main analysis determined compliance with standards, including whether national targets had been met, and how well individual departments had performed in relation to each other (Figs. 2 – 7 in Appendix 2). Funnel plots identified outlying departments (Figs. 8 – 13 in Appendix 3). These departments were invited to take part in a follow-up survey to share information about possible causes of underperformance and about achieving high performance.

Results

National Performance

Compliance with standards nationally ranged from 45% to 98%. Stating the grade of the reporter on the report was the least achievable standard (Table 2). There was very little difference in compliance with standards between plain film and ultrasound (Table 3). Only three out of six national targets were met (Table 2).

Table 2 Compliance with standards (national targets)

Criterion	Target level of achievement (%)	Obtained level of achievement (%)	95% CI (%)	Standard met
1. Clinical issues should be addressed.	> = 95	6618/6951 (95)	94.7 to 95.7	Yes
2. Clinical advice, when given, should be appropriate.	> = 95	840/960 (88)	85.3 to 89.4	No
3. The grade of the reporter should be stated on the report.	100	3259/7199 (45)	44.1 to 46.4	No
4. The wording of the report should be clear.	> = 95	7059/7201 (98)	97.7 to 98.3	Yes

Criterion	Target level of achievement (%)	Obtained level of achievement (%)	95% CI (%)	Standard met
5. The reporting style should be appropriate for a GP.	> = 95	6973/7181 (97)	96.7 to 97.5	Yes
6. Appropriate action should be taken in accordance with local departmental policy, for all urgent/unexpected findings.	100	331/450 (74)	69.3 to 77.4	No

Table 3 Differences in obtained level of achievement between plain film and ultrasound¹

Criterion	Obtained level of achievement (%)		95% CI for the difference (%)
	Plain film	Ultrasound	
1. Clinical issues should be addressed.	3289/3491 (94)	3325/3456 (96)	-3.0 to -1.0
2. Clinical advice, when given, should be appropriate.	374/438 (85)	466/522 (89)	-8.2 to 0.3
3. The grade of the reporter should be stated on the report.	1481/3630 (41)	1774/3565 (50)	-11.2 to -6.7
4. The wording of the report should be clear.	3553/3634 (98)	3502/3563 (98)	-1.2 to 0.1
5. The reporting style should be appropriate for a GP.	3542/3619 (98)	3427/3558 (96)	0.8 to 2.3
6. Appropriate action should be taken in accordance with local departmental policy, for all urgent/unexpected findings.	110/158 (70)	221/292 (76)	-14.9 to 2.4

¹ In respect of obtained level of achievement, the sum of the denominators for a given criterion in this table do not necessarily equal the denominator for that criterion in the previous table as not all reports were identified as plain film or ultrasound.

Local Performance

There was a considerable spread in compliance within individual departments with regard to stating the grade of the reporter on the report and taking appropriate action in accordance with local departmental policy for all urgent/unexpected findings (Table 4).

Table 4 Average (median) level of achievement per department

Criterion	Obtained level of achievement	
	Median (%)	Interquartile range (%)
1. Clinical issues should be addressed.	98	94 to 100
2. Clinical advice, when given, should be appropriate.	96	81 to 100
3. The grade of the reporter should be stated on the report.	32	0 to 100
4. The wording of the report should be clear.	100	98 to 100
5. The reporting style should be appropriate for a GP.	100	97 to 100
6. Appropriate action should be taken in accordance with local departmental policy, for all urgent/unexpected findings.	79	50 to 100

Outlying Departments

Funnel plots identified departments whose performance was outside the range of variation that might be expected to occur due to chance. Conventionally this is shown as an area bounded by upper and lower control limits (red lines) set at three SDs above and below the mean, respectively. Except with regard to stating the grade of the reporter on the report (Figure 10), departments were predominately within these limits.

Follow-up Survey

Departments whose performance in regard to any of the standards was below the lower control limit or above the upper control limit were invited to share information about possible reasons for this.

Small departments with limited skills mix may have experienced greater difficulty in addressing clinical issues. One department had a policy that all reports to GPs should have a conclusion to highlight the relevancy of findings and any need for further action. Reports without such a conclusion were considered inappropriate for a GP. Similarly, it was suggested that sonographers tended to use abbreviations and measurements that were unfamiliar to GPs. Poor documentation was suggested as a

cause for underperformance with regard to taking appropriate action on unexpected or urgent findings. If it was not recorded on the report it did not happen.

Subspecialisation within the department and a policy for all radiological investigations to be reviewed and reported by consultant radiologists enabled some departments to achieve high performance on the appropriateness of clinical advice. One department had a well established system of faxing unexpected or urgent reports to GPs. This had proved to be most effective.

Recommendations for Good Practice

Communication, particularly with our referrers underpins our clinical work as radiologists and it is essential that information is disseminated appropriately and in a timely manner.

All departments should state the grade of reporter on reports; this should be possible despite the various RIS systems in use.

All departments should have a policy in place for communicating urgent/unexpected findings and should be using it appropriately; local audit of this may lead to improvements.

It may be helpful for departments to look more closely at the advice given on reports, a local audit and recommendations may be helpful in departments who have underperformed.

References

1. http://www.npsa.nhs.uk/site/media/documents/2294_0472_x-ray_SPN.pdf (last accessed 8/10/07).
2. The Royal College of Radiologists. *Standards for the Reporting and Interpretation of Imaging Investigations*. London: The Royal College of Radiologists, 2006.

Thank you to all departments that submitted data. Please note there is a template for this audit on AuditLive available at <http://www.rcr.ac.uk/audittemplate.aspx?PageID=1020&AuditTemplateID=38>. If the link is not active on your pc, please copy and paste it into the address bar of your web browser and press "Enter".

Appendix 1: Demographics

Table 5 Type of hospital

Type of hospital	Number (%)
DGH	39 (61)
District hospital	1 (2)
Independent	1 (2)
Teaching	23 (36)

Table 6 Does your radiology department have radiology trainees?

Response	Number (%)
Yes	52 (81)
No	12 (19)

Table 7 Number of radiological examinations/year

Median	Interquartile range
160 000	120 000 to 220 125

Table 8 How many whole time equivalent secretaries do you have?

Median	Interquartile range
5.0	3.0 to 6.5

Table 9 What percentage of your reporting is . . .

	Median²	Interquartile range
Voice recognition	0	0 to 20
Dictated and typed by a secretary later	91	62 to 100
Direct transcription	0	0 to 6
Other	0	0 to 0

Table 10 What percentage of your reports are sent elsewhere for typing (e.g. overseas)?

Median	Interquartile range
0	0 to 0

² NB the values in this column are medians; thus there is no expectation that the sum of these values should be equal to 100.

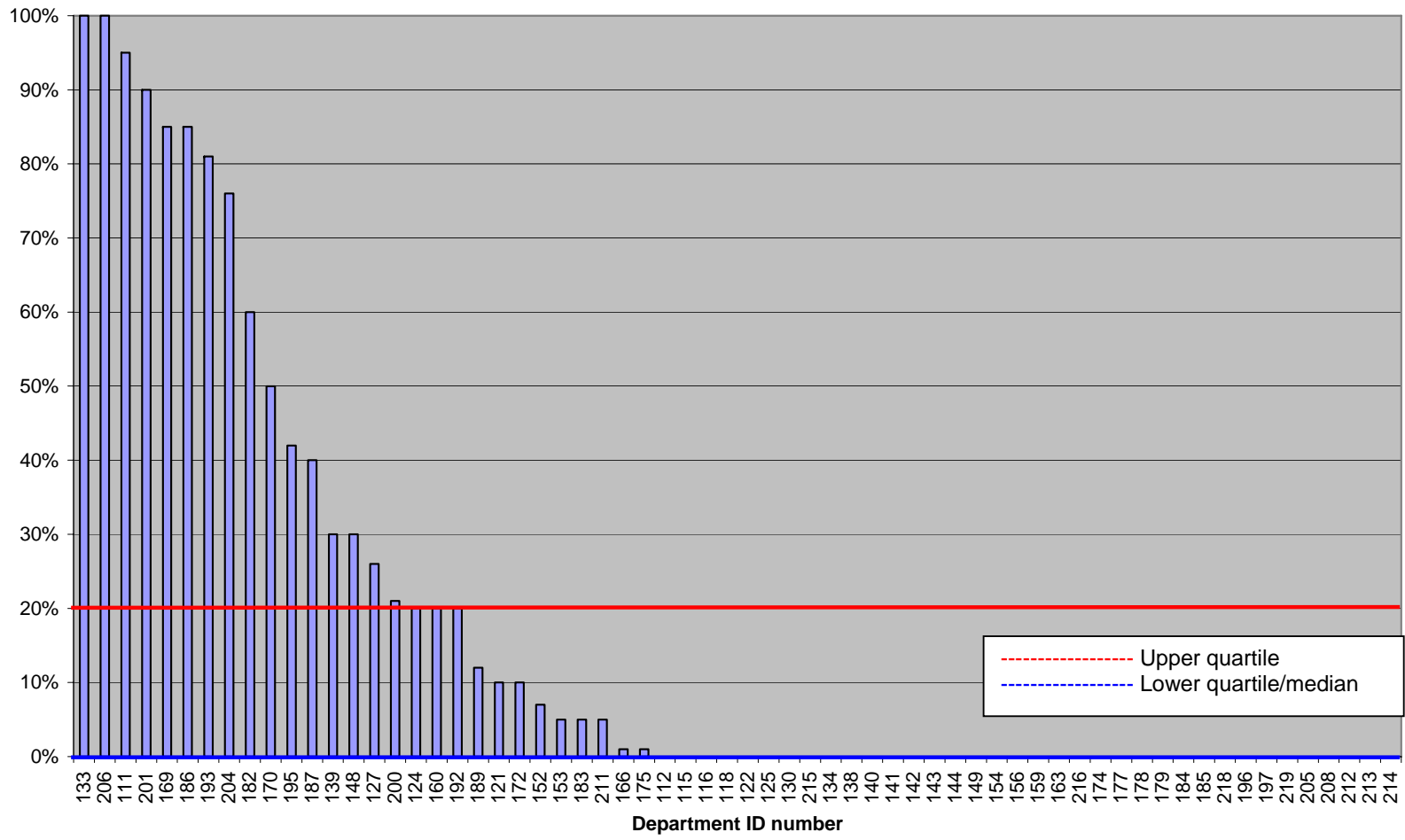


Figure 1 Percentage of reporting with voice recognition.

Appendix 2: Bar charts comparing performance between departments

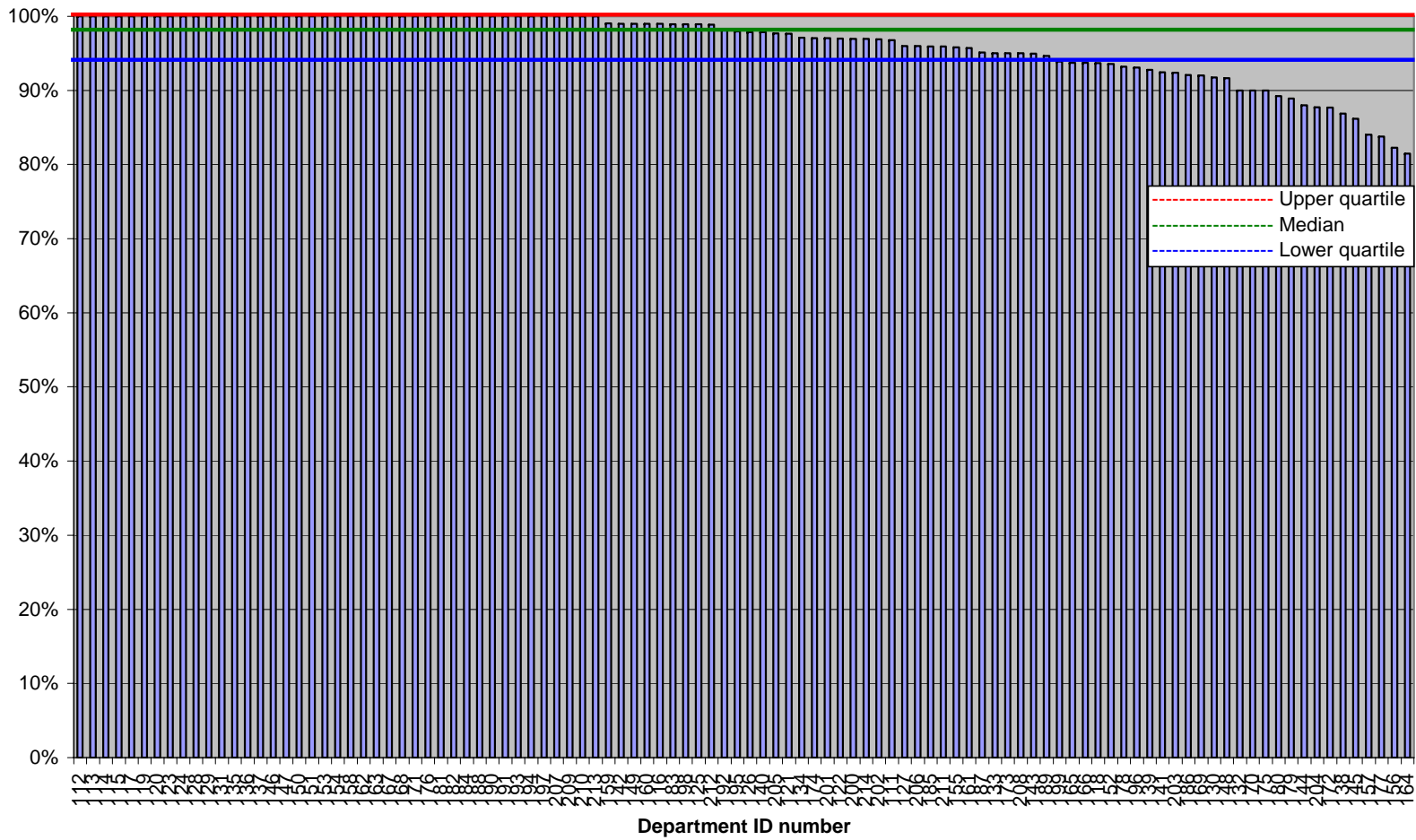
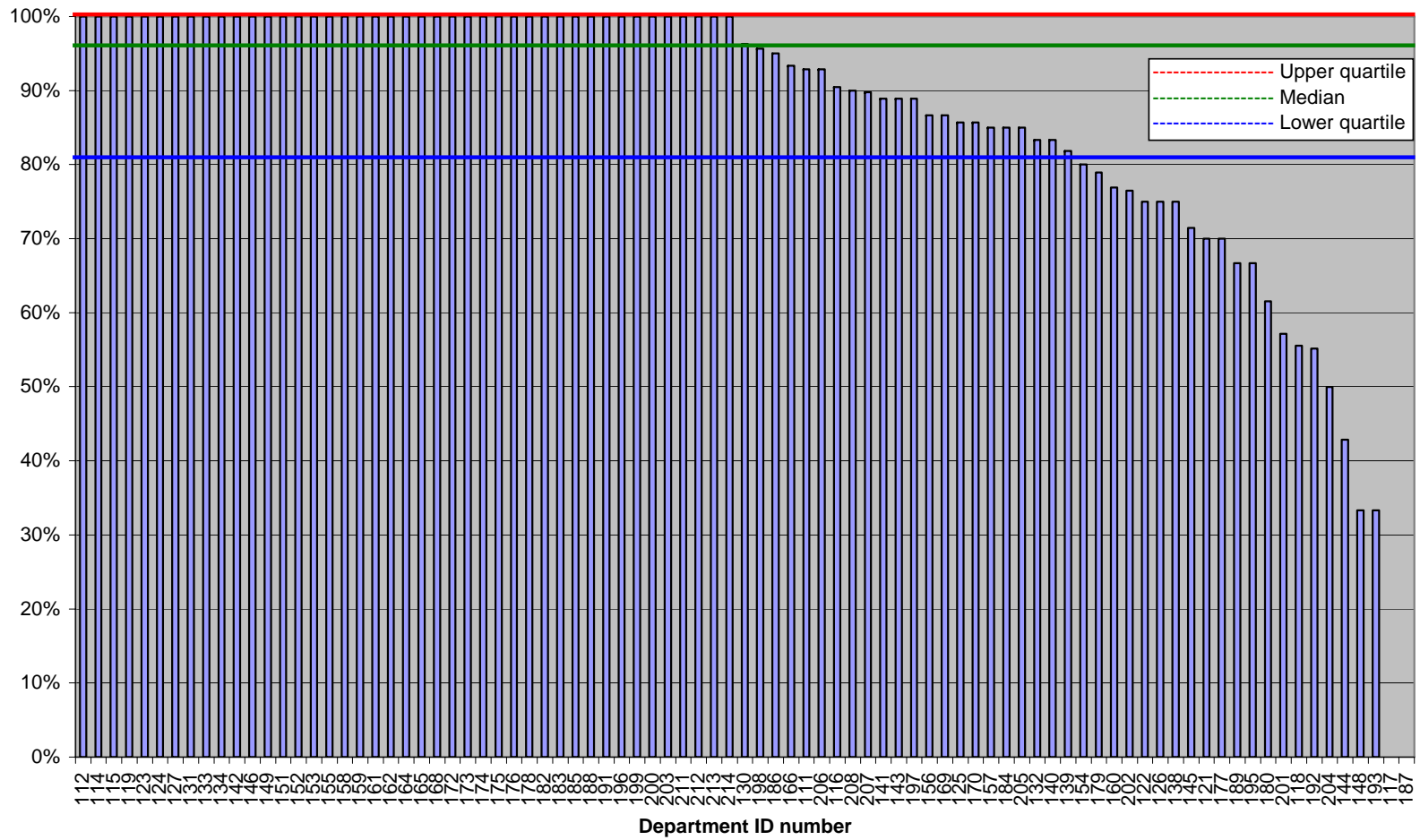


Figure 2 Percentage of reports in which all clinical issues were addressed.



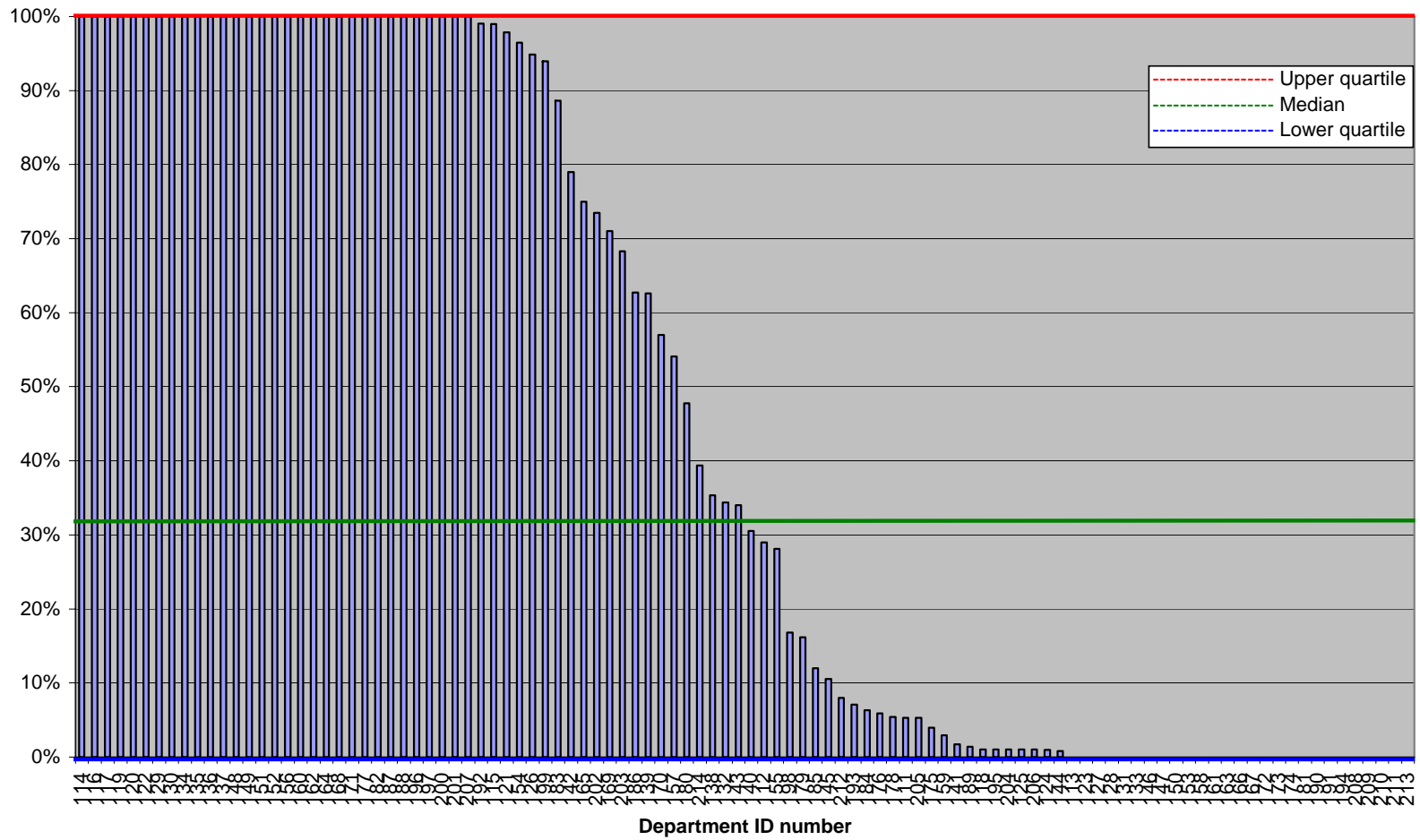


Figure 4 Percentage of reports in which the grade of reporter was stated on the report.

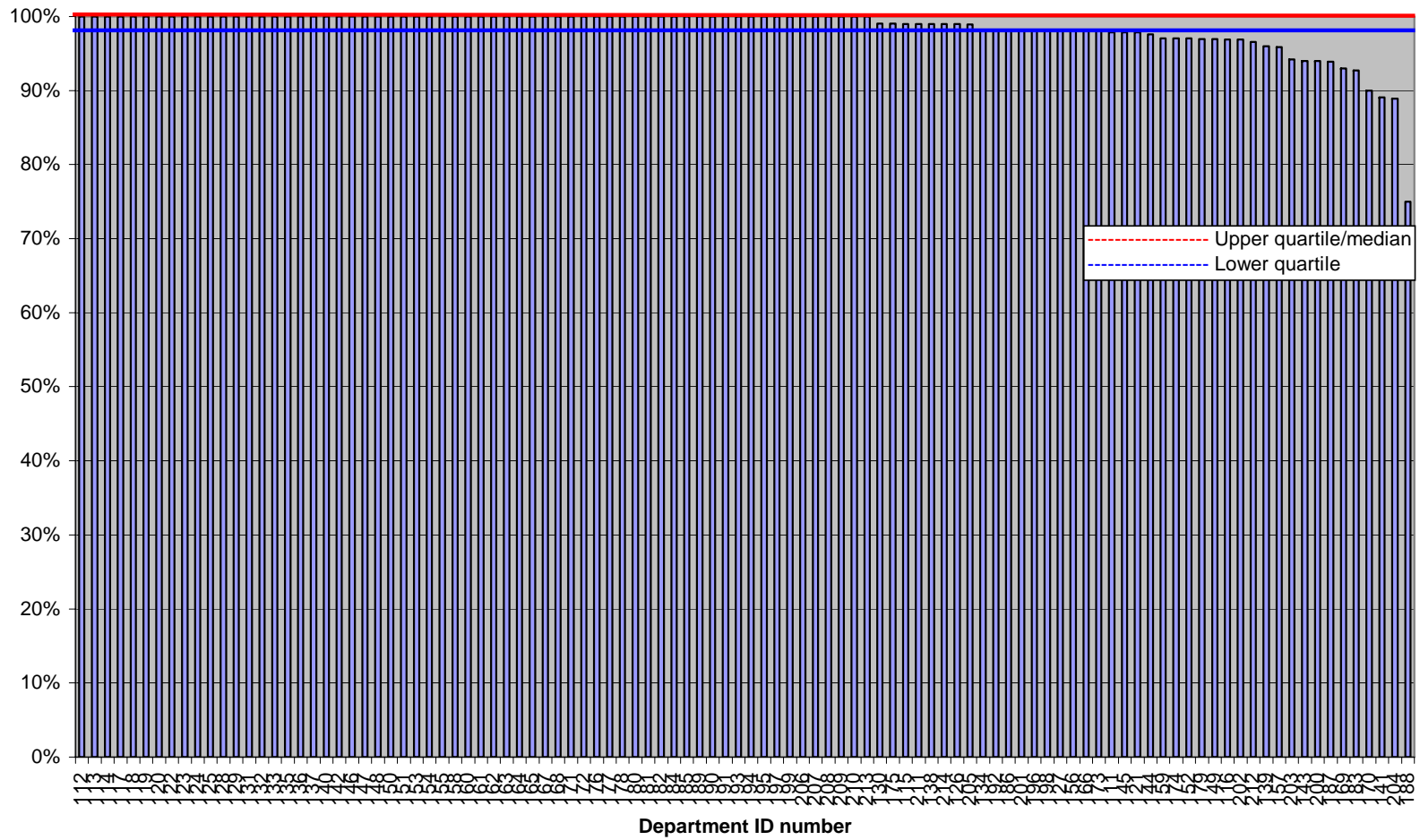


Figure 5 Percentage of reports in which the wording of the report was clear.

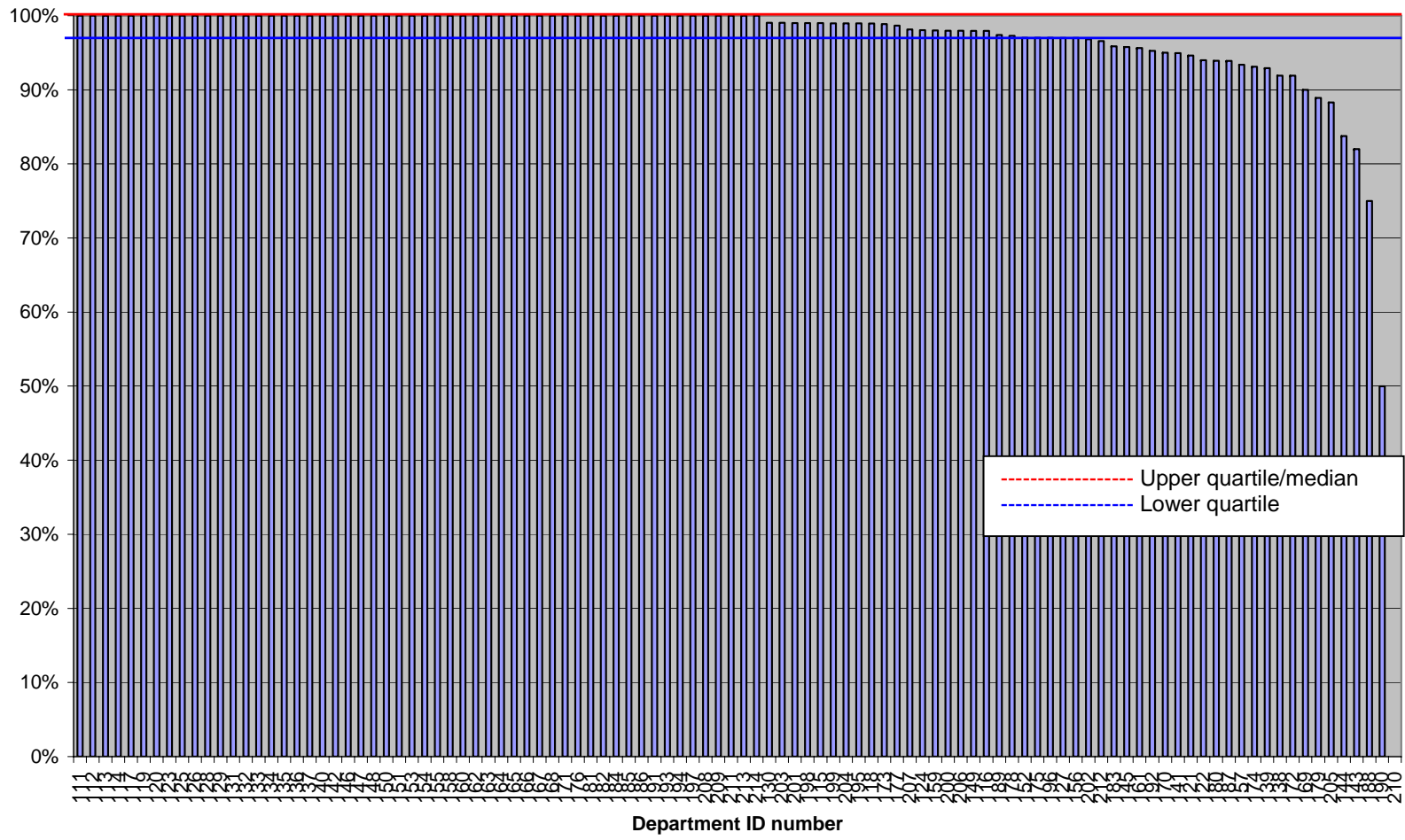


Figure 6 Percentage of reports in which the reporting style was appropriate for a GP.

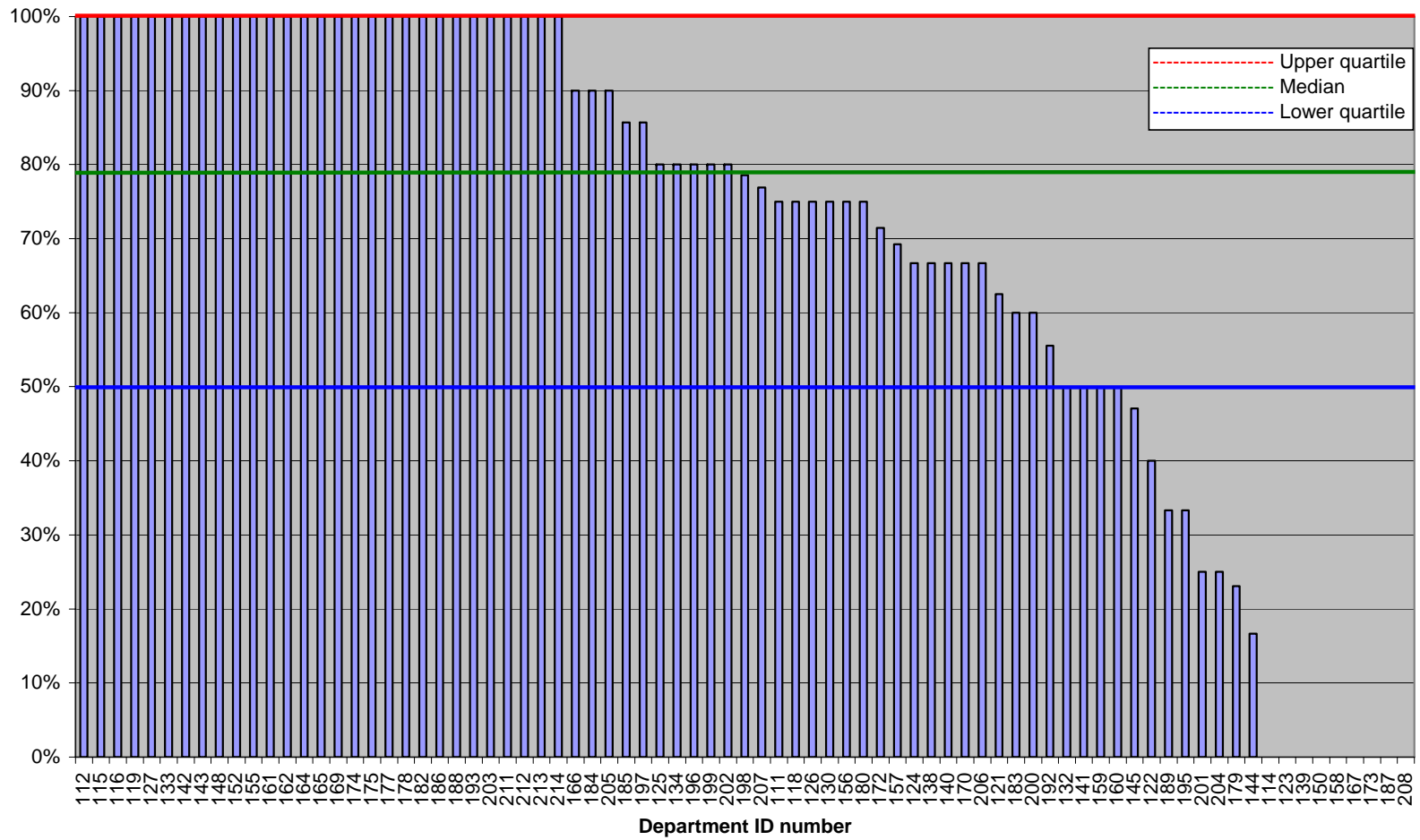


Figure 7 Percentage of cases in which appropriate action was taken in accordance with local departmental policy, for all urgent/unexpected findings.

Appendix 3: Funnel plots identifying outlying departments

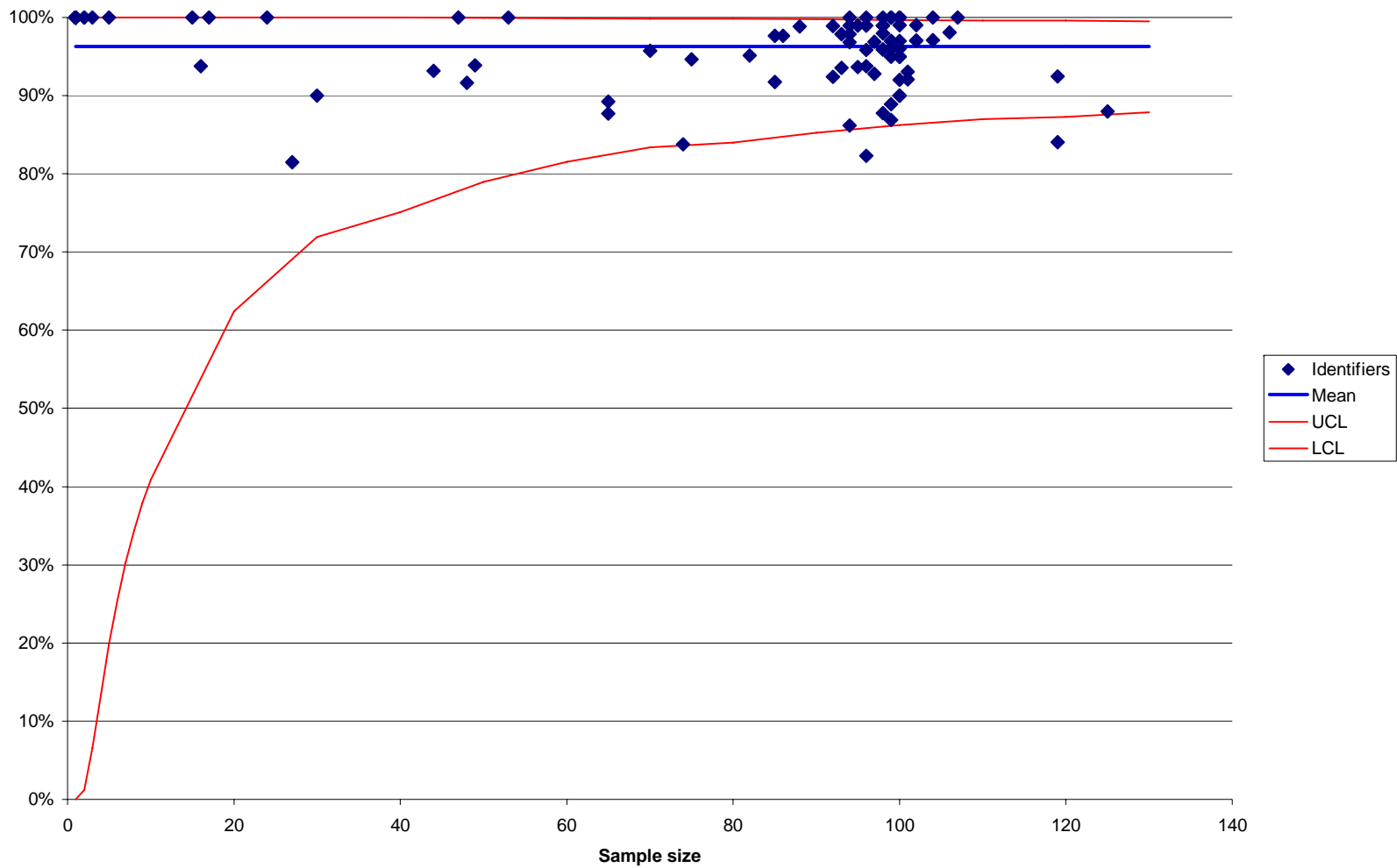


Figure 8 Funnel plot for percentage of reports in which all clinical issues were addressed.

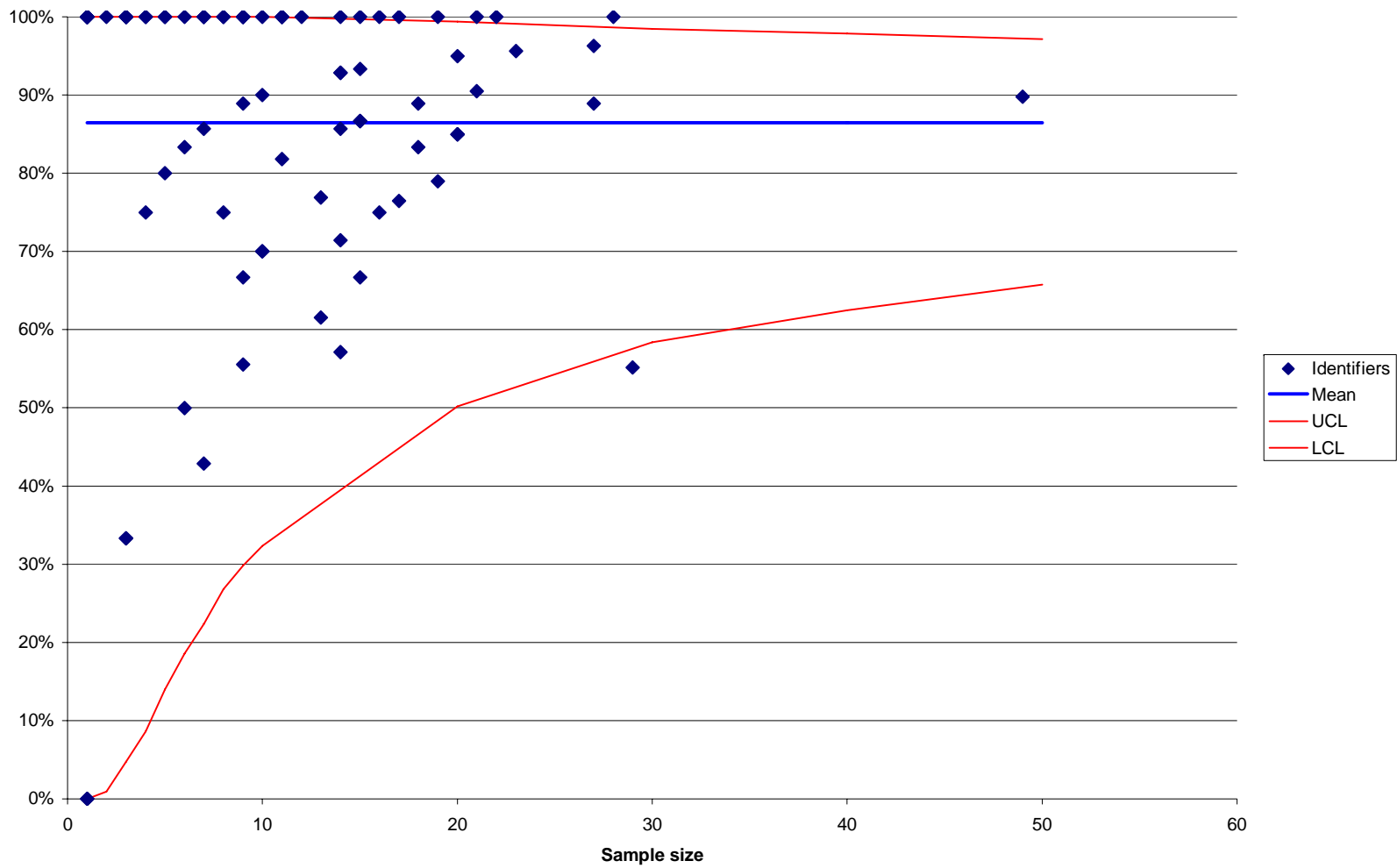


Figure 9 Funnel plot for percentage of reports in which clinical advice, when given, was appropriate.

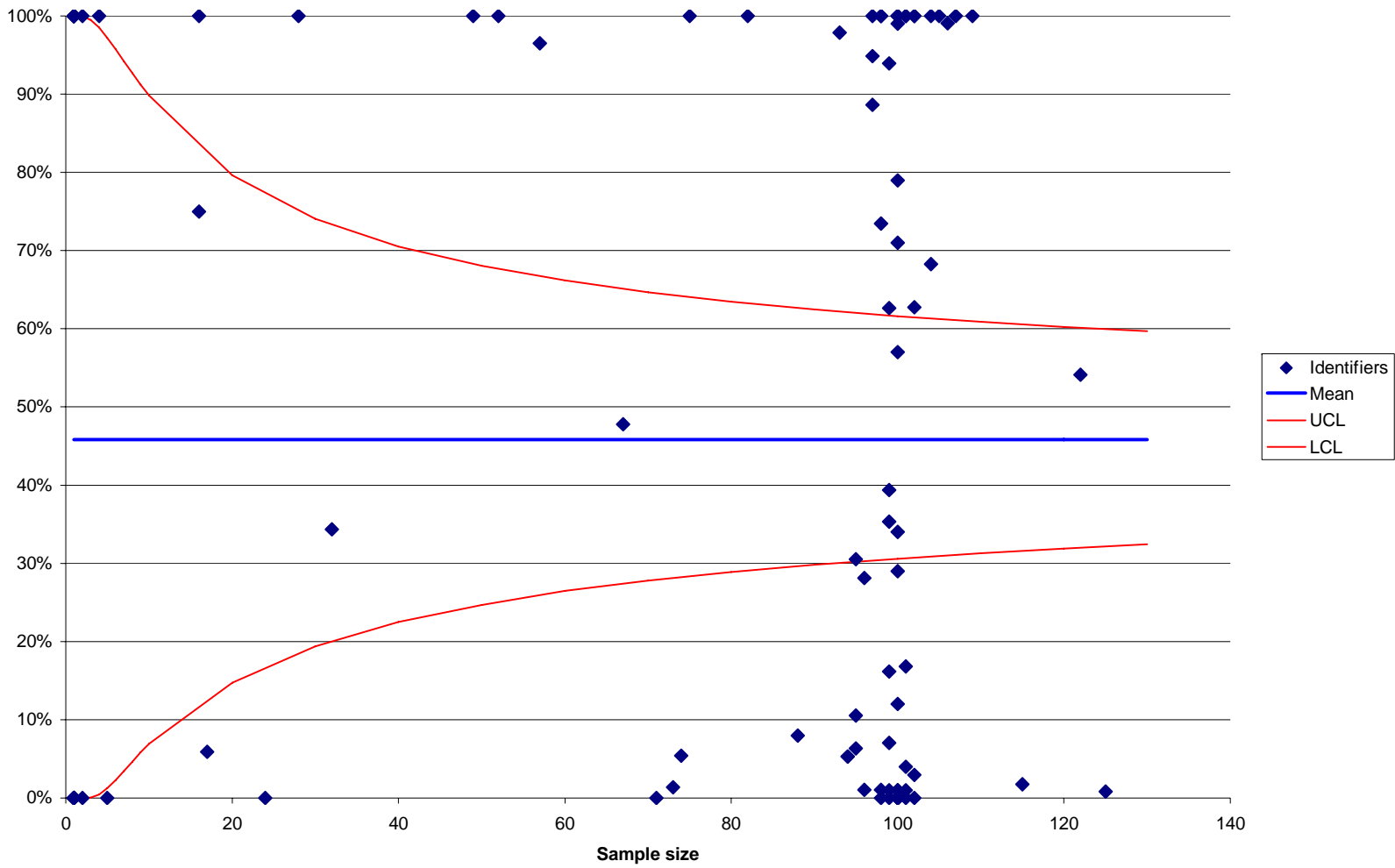


Figure 10 Funnel plot for percentage of reports in which the grade of reporter was stated on the report.

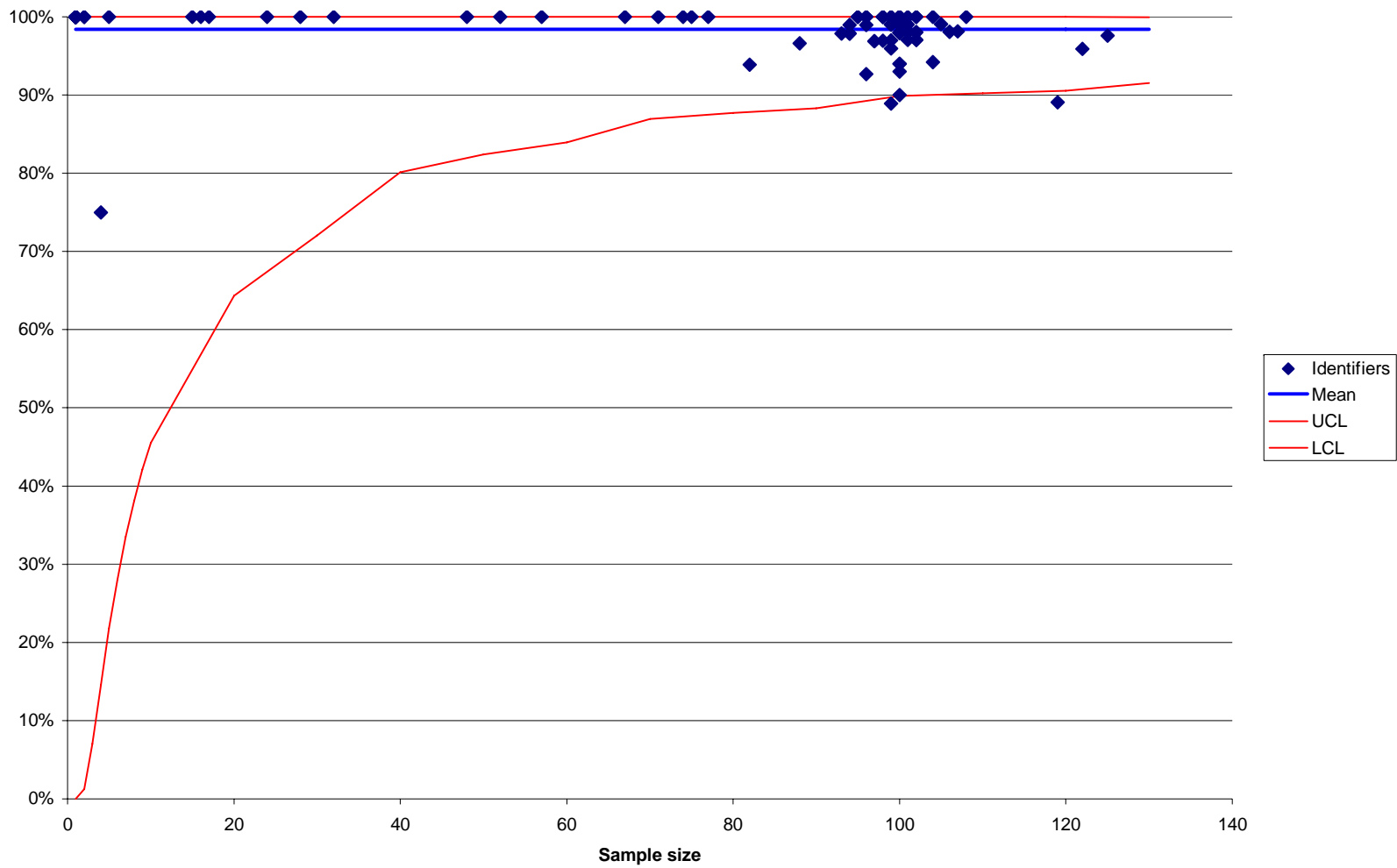


Figure 11 Funnel plot for percentage of reports in which the wording of the report was clear.

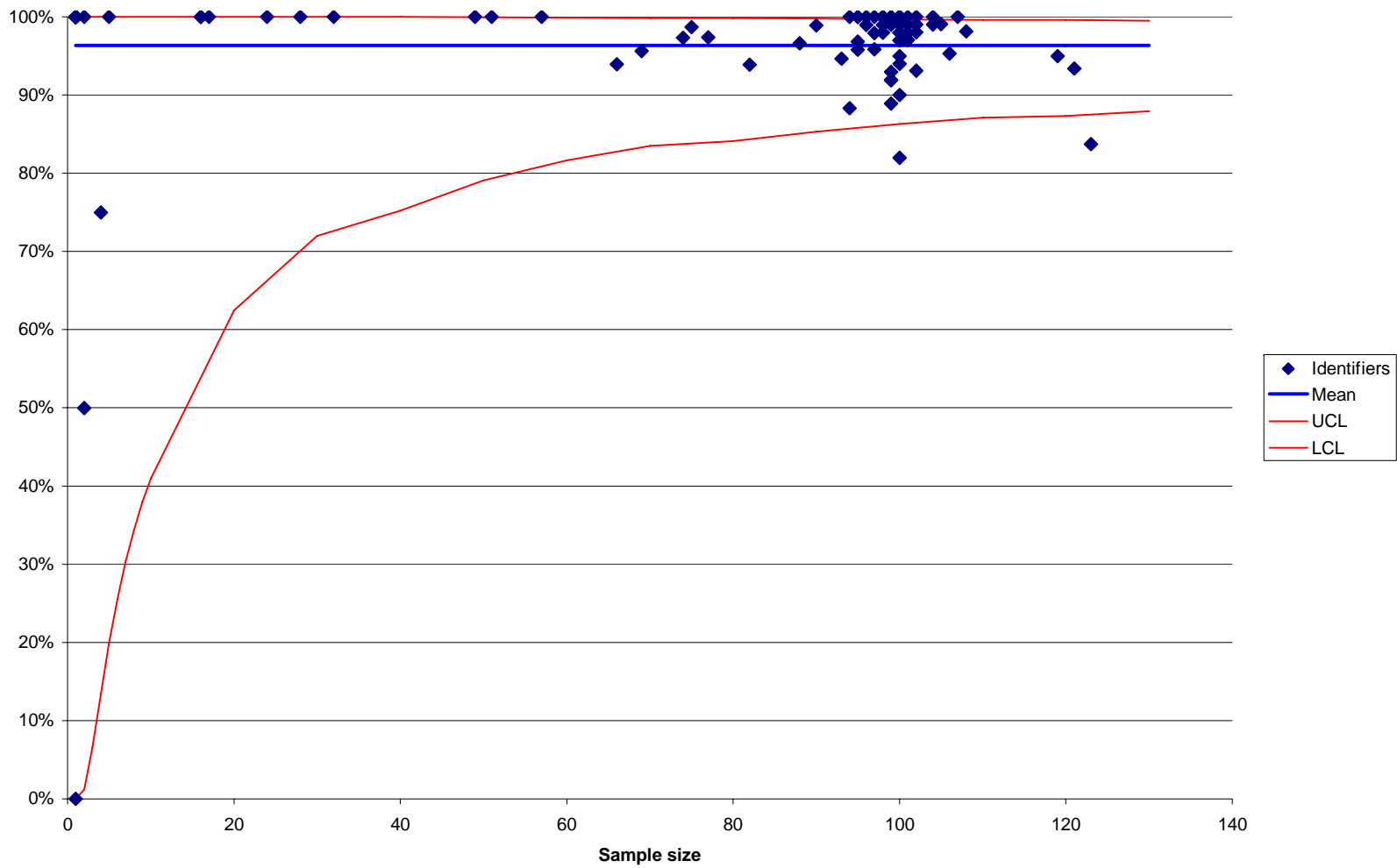


Figure 12 Funnel plot for percentage of reports in which the reporting style was appropriate for a GP.

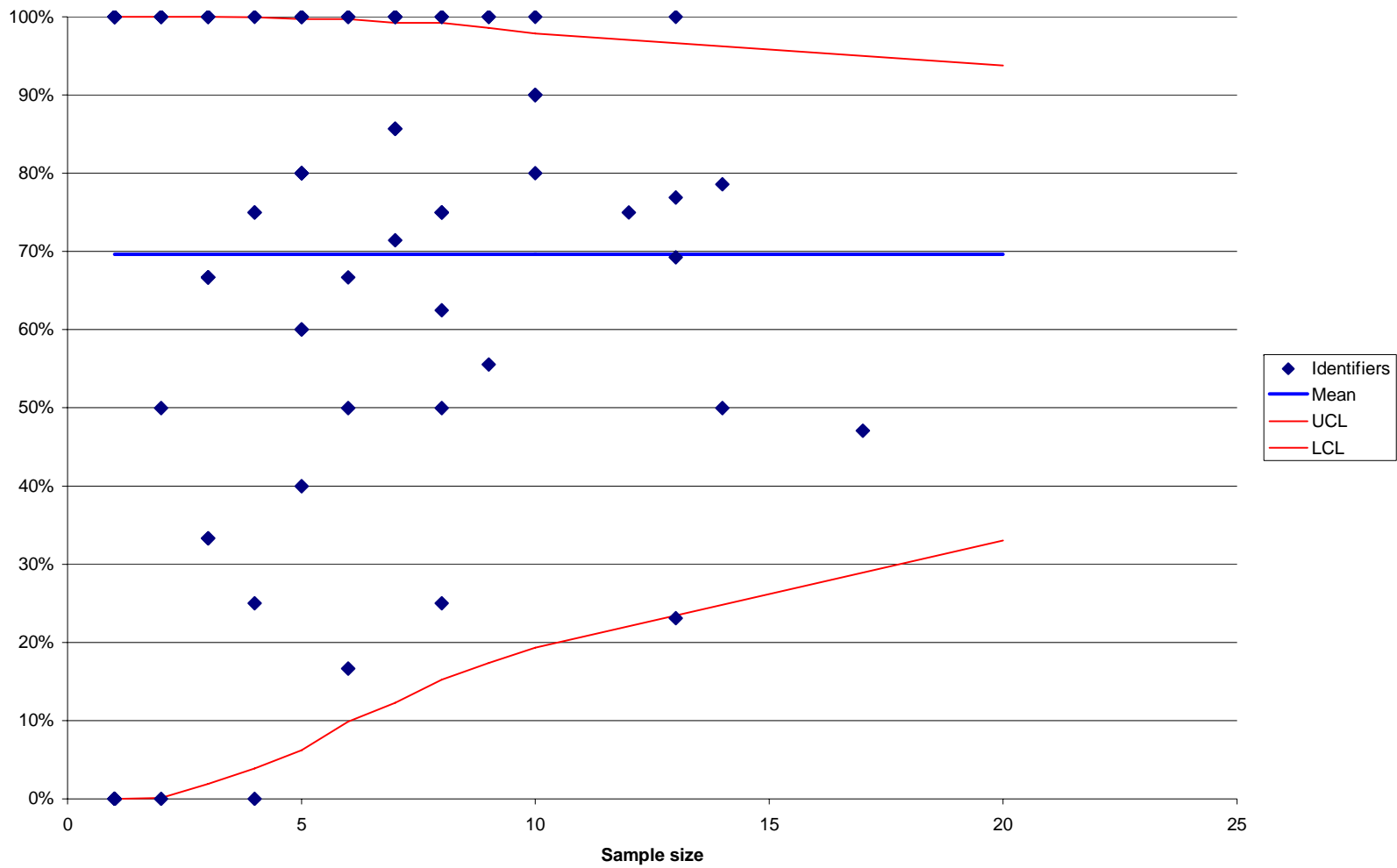


Figure 13 Funnel plot for percentage of cases in which appropriate action was taken in accordance with local departmental policy, for all urgent/unexpected findings.