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The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a "Journal Club" activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out "correct" answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT00025**.

Each attendee should claim **THREE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

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The development of a system for the reporting, classification and grading of quality failures in the clinical biochemistry laboratory

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(Abstracted by Dr Jim McCulloch for Thistle QA)

The authors developed a reporting system to log all quality failures identified by staff and service users. They used the term "quality failures" rather than the terms used previously, such as "errors" or "blunders" as they felt the latter words implied "people mistakes" rather than identification of weaknesses in systems. The term "quality failure" was defined as any failure to meet the required quality output needed for optimal patient care.

A suspected quality failure resulted in the filling in of a Quality Query report. Over a 19-month period, 397 Quality Query reports were completed against a background of 468,285 laboratory requests received by the laboratory, i.e. 0.085% of total requests. Most of the Quality Queries (75.8%) were initiated by laboratory staff, while the other quarter came from service users.

Quality failures were classified into the traditional categories of pre-analytical (88.9%), analytical (9.6%) and post-analytical (1.5%).

Table 1: Categories of quality failure by cause:

Pre-analytical

- a) Incorrect sample type
- b) Incorrectly labelled sample/ form
- c) Incomplete or missing request location
- d) Sample spillage in transit to laboratory
- e) Sample spillage in laboratory
- f) Sample transposition/ mix-up in laboratory
- g) Incorrect entry of patient/ test details on laboratory computer
- h) Sample did not reach the laboratory

2. Analytical

- a) Incorrect analytical result generated (quality control satisfactory)
- b) Error in transmission from analyser to laboratory computer
- c) Result issued despite unsatisfactory internal quality control

3. Post-analytical

- a) Inappropriate delay in authorising/ releasing result
- b) Failure to phone urgent or clinically remarkable result
- c) Non-arrival of hard copy result
- d) Inappropriate laboratory comment either inserted or not inserted
- e) Incorrect manual entry of result

The following table shows the most common causes of quality failures in this laboratory.

Table 2: Breakdown of quality failures by major causes:

	Number
Pre-analytical	353
b) Incorrectly labelled sample/ form	94
c) Incomplete or missing request location	91
g) Incorrect entry of patient/ test details on lab computer	100
2. Analytical	38
a) Incorrect analytical result generated	15
b) Error in transmission of result from analyser to lab computer	3
c) Result issued despite failing internal QC	2
3. Post-analytical	6
c) Non-arrival of the hard copy report	3
d) Inappropriate interpretive comments	1
e) Incorrect manual entry of results	2

CPD Questions:

1. Why do you think most of the Quality Query reports were initiated by laboratory staff?
2. Why do you think most “quality failures” occurred in the pre-analytical phase?
3. How do the major causes of quality failures shown in Table 2 compare with your experience in your own laboratory?