

Examiners' Report  
June 2012

GCSE History 5HB03 3A

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## Introduction

This was the sixth series of this Schools History Project Source Enquiry on the transformation of surgery, c1845-c1918. The focus of the enquiry was the development of antiseptic surgery and resistance to adopting the new methods. Most candidates were able to demonstrate responses that were worthy of some credit and many produced answers that were well argued, developed and supported by the sources provided and additional recalled knowledge. There was evidence that more candidates were able to access all questions and generally achieve more than basic level marks. As with earlier series Level 4 of question 5 proved more elusive. The focus on resistance to change caused some candidates difficulty with some producing answers that focused on opposition to Lister. There was continuing evidence that centres are responding to comments in earlier reports. Certainly there were fewer papers that presented blank responses to a question. Most commonly these were concentrated on Question 5. Many however still struggle to cross reference sources in responses to question 3. Many simply described what each source said or showed one after the other. Fewer were able to deploy understanding of differences in content alongside comment on or support provided by the nature and provenance of each source. Question 4 produced many answers that were good on content but did not refer to a sources nature, origin or purpose. Moreover many comments on utility focused on simplistic learnt responses of dubious historical value. Timing was generally less of a problem for candidates than in earlier series. However some candidates produced answers that were overlong in response to questions 1 and 2. This left them with difficulties completing developed answers to questions 3, 4 and 5. One key to improving attainment is to measure responses to the mark tariff on offer. There were fewer responses written in the wrong sections of the answer book. Though this continues to be a problem that could easily be avoided by teachers instructing candidates to make sure a continuation to the question is on the next page not the last page of the question preceding it. This is almost always confined to question 4 responses that are continued on the last page of question 3. There were far too many simplistic responses concerning the value and utility of sources to questions such as 1 and 5 that do not require it. There were fewer though still too many responses which see all primary sources as being more reliable and useful and secondary ones as made up and therefore worthless.

## Question 1

Most candidates achieved L3 marks on this question. Very few candidates only provided a description of the source (L1), some made inferences without using the source (L2), while most were able to infer something about the fact that more patients died in hospitals than at home (L3). Level 1 statements were weak, simplistic statements or examples copied from the source without any elaboration. However, many candidates were able to make inferences and offer support for their explanation. There was evidence of strong inferences made in many cases although, in a number of others, candidates made weak inferences and offered no support. The majority of candidates scored level 3, by giving well developed answers with adequate support but these tended to have mainly one strong inference. These examples included references to the danger/safety/ higher risks/problem of infection. Fewer candidates could make the link that higher death rates in hospitals were caused by high risks of infection. Many candidates were able to identify that homes were safer places to perform operations and offered support, however others could not explain why. In a number of cases comments were often as follows: 'there was a high death rate because...one in five patients tended to die.' or 'operations at home were more successful.' These comments were less developed. Some answers simply paraphrased the source or comments were simplistic, e.g. 'surgery was dangerous because many die in hospital', 'conditions were bad', 'death rates were higher...'

To support teaching and learning:

1. Students should start by making an inference and then be encouraged to support it directly from the source. This should be followed by an explanation of the implications of this inference.

Example:

'This source implies that surgery before Lister was terrible. The fact that lots of people died in hospitals- 'one in five patients died after amputations in hospitals' suggests that the very place that should have helped patients get better did not- this was probably down to the fact that doctors did not know about how infection spread.

2. The difference between imply and infer continues to be common. A number of responses commented- 'the source infers...'

Look carefully at the background information and Sources A to G in the Sources Booklet and then answer Questions 1 to 5 which follow.

### 1 Study Source A.

What can you learn from Source A about surgery before Lister?

(6)  
From source A we can learn that the death rate in hospitals was higher high because the statistics show 1 in 5 people died, which is around 20% this suggests that hospitals were dirty and non hygenic places. We can also see that in private surgeries or at home the patient was alot more likley to survive, as only 5 people died out of 46 people. This shows that even though they still didnt fully understand about infections, more people were surviving at home. This shows that 'Bad air' or 'poisonous

'Miasmas' could not be responsible and in fact it was the hospitals dirtiness. Hospitals were places with a lot of ill and infectious people in and doctors would spread disease easily, at home there would only be one person ill so the infection wasn't spread. Source A also shows that advances were being made in anaesthetics which suggests that now patients are not screaming awake in pain and are now sleeping knocked out. Doctors might be trying risky operations and might take more time, leaving the body exposed can lead to infections. When anaesthetics started becoming more used, the death rate of shock went down it soared back up with people dying of fatal infections. The period was called 'The Dark Period.'



**ResultsPlus**  
Examiner Comments

A good Level 3 response with two inferences and useful support from the source.



**ResultsPlus**  
Examiner Tip

Use the source not your own knowledge of the topic and avoid just simply paraphrasing it.

## Question 2

This question attempted to focus students on the purpose of the illustration. Most students were able to comment on the fact that the illustration proved that there had been progress in surgery. However it was a minority who recognised that the target audience were surgeons in the 1880s and not historians in the 21st century. Many students thought that the reason for the illustration was to show progress generally. The best responses were able to focus on both the details of the source- the positioning of the spray, the calmness of the atmosphere, the teamwork displayed- to prove how carbolic spray was being promoted, as well as the fact that it was Lister's assistant who produced the book so it was clearly trying to persuade surgeons at the time to use the spray.

The majority of candidates started the answer by explaining why the picture was included in the book. Good answers mentioned 'instructional / educational purposes' as well as 'promoting Lister's ideas and the antiseptic spray'. Amongst the best answers were the ones referring to Lister's discovery as a 'pivotal moment / great breakthrough in surgery'. Others focussed on the progress in surgery made by Lister. Weaker candidates would simply state that the picture was included to 'give a positive impression / show what operations were like at the time' or simply 'because the book was published by one of Lister's assistants'.

Of the answers which contained references to the source, these were primarily content-driven. Here, many reached L2, as they provided adequate support, but many answers were primarily descriptive, lacking the analytical element that would have taken them into L3. Weaker candidates described the picture and not all of them focussed their answer around the spray. The majority, however, realised that the spray is there and the surgeons disinfect instruments and their hands. The surgeons' team-work was frequently commented on – weak answers stating that this shows that 'they know what they are doing', higher level answers used this as evidence that 'surgery is more organised / professional than before, as every person has their place / task during the operation'.

To support teaching and learning:

1. All students should be reminded to read the information about the source FIRST.
2. Students should focus on who produced the source and when it was produced in order to think about the purpose of the illustration. When they have noted the year it was produced- in this case 1882- students should really ask themselves- why that year? In this case 1882 was only a few years after the discovery of carbolic spray and so this source is trying to promote the spray. When they have noted who produced the source- in this case Lister's assistant- students should really ask themselves-why is this person producing the source?
3. Students need to refer to the details of the image itself to prove purpose. A very good response might also refer to the fact it was Lister's assistant producing the source and to the caption.

A very good example of a Level 3 response was the following

*The illustration clearly shows that the spray is being directed at the patient's wound and that the caption "The surgeon should always have his hands in the spray and the assistant should hand the instrument to the surgeon through the spray" explains the meticulous procedures that are needed for antiseptic surgery to work. This would have been included in a book entitled "Antiseptic Surgery" as it would clearly show other surgeons who had not worked with Lister how to set up their operating theatres so that they might be able to reduce the cases of infection in their patients just as Lister had.*

*The book was published in 1882 and antiseptic surgery was not common practice in Europe and America until around 1890. Therefore, the purpose of the illustration may be to persuade the reader of the benefits of antiseptic surgery. The surgeon and his assistants appear very calm and focuses which implies to a reader that the Lister Spray is not*

distracting and is beneficial to the operating process, as some of Lister's opponents argued that the spray was distracting, caused skin irritations and make the operation both more timely and costly.

The patient is pictured in the centre of the picture and is surrounded in white sheets which directly contrasts the dark colours the surgeons are wearing, thus making the patient the focus of the illustration. This may be to suggest that the patient's wellbeing should be the surgeon's focus and that the use of antiseptic surgery is part of a surgeon's duty of care to the patient.

Why was this illustration included in this book on surgery? Explain your answer, using Source B.

(8)

The illustration could have been included in this book on surgery, to help publicise the use of Lister's carbolic spray. With the caption, the picture shows that every person in the operating theatre should be using carbolic spray to prevent infection. The main focus of the illustration is the spray, and the way it is working on its own (or appears to be,) the spray looks easy to use and helps promote it. It may have been included to show how to use the spray correctly. It could also have been included to show everyone how surgery could be improved. As a form of communication, the illustration could be used to show people universally what they should do, without forming language barriers. The illustration shows clearly what carbolic spray does and it was probably used as a way of spreading the word about antiseptic methods. The book was

written by one of Lister's assistants  
so it was probably incorporated to help  
promote his success and document his  
developments.



**ResultsPlus**  
Examiner Comments

A typical low Level 3 response that uses the source to explain why it could have been included in the book



**ResultsPlus**  
Examiner Tip

Always make sure you are aware of the focus of the question, whether impression, message or why produced or included.

### Question 3

This question attempted to focus students on their ability to cross-reference. Ultimately students were to consider what Pasteur said in D and consider whether and to what extent B and C supported D. Some candidates simply selected details from the sources without any linking to the question for Level 1, but the majority of students were able to match details of Source B and C to elements of D to prove either support or challenge. Clearly students find the issue of cross-referencing a difficult one since many students were not able to access Level 3.

In the majority of responses judgements were more secure when dealing with sources B and C, however, source D was often referred to implicitly. Whilst candidates showed evidence to support their answers from the source some were less able to demonstrate cross-referencing or even reach a hypothesis. When this was evident, responses were well developed and coherent, and both the nature and the authorship of the sources were acknowledged. A number of candidates only focused on the content of sources with little, if any depth on the nature of sources. Some were confident in explaining the nature of the source, by recognising the bias of the author in source B, although less so, when identifying D as a lecture encouraging the new methods. Those candidates, who obtained level 3, were more successful in their analysis of the sources. Those obtaining level 2 either matched sources, or gave examples from the sources to support/challenge source D.

What is clear is that candidates are more confident when explaining the content of a source compared to its nature. Candidates fell short by neglecting to refer to source D when making their comparison, and need to be more explicit when giving support. What also needs to be addressed is the skill of cross-referencing so that more candidates can achieve level 3.

To support teaching and learning:

1. All students should be reminded to ask themselves this question-: which source should I start with? The answer needs to comment first on the source that is the 'backstop' source- in this case it is source D. The question wants students to compare and contrast source B and C to D. Logically students need to begin with setting out what Pasteur's advice in D is.

For example-:

*'In source D Pasteur is clearly focusing on how to prevent infection from germs and he has some tips on how to do exactly that- he talks about using clean instruments and cleaning hands...'*

Unfortunately many students begin with B because the question refers to source B first, but this is not the best way of answering the question and it often leads into a response that treats the sources separately.

2. Once the 'backstop' source has been dealt with students need to move on to compare and contrast the other sources to it. Initially and logically students need to compare the content of the sources, but for Level 3 they must be able to reason and extrapolate and not just match.

3. The very best responses were able to move beyond comparing and contrasting the content of the sources to comment on whether the nature of sources B and C actually proved whether Pasteur's advice had been followed or not. Clearly a number of students like to analyse the reliability of sources and they have been taught to do this. Nevertheless the evaluation of the nature of the source MUST be linked to the question- in this case was Pasteur's advice followed. Students need to ask themselves- who produced this source and when was it produced AND do these prove that Pasteur's advice was followed or not.

One excellent Level 3 commented on the nature of Source B to answer the question

'Source B was written by one of Lister's assistants and it is trying to convince surgeons to use carbolic spray. The illustration is in a book so it does not prove that Pasteur's advice was really being followed by everyone- it only proves that Lister is trying to get people to follow Pasteur's advice!

How far do Sources B and C suggest that Pasteur's advice in Source D was followed?  
Explain your answer, using these sources.

(10)

Due to the development of Anesthetics more complex operations took place, however the more patients survived the operations, many died soon after as a result of infection, this was not understood by many until Pasteur and his germ theory came to light, Pasteur knew that germs were everywhere and when settled in the right conditions could multiply and infect, Source B seems to be in favour of Louis Pasteur showing us surgeons taking the greatest care during an operation, disinfecting the hands of all involved as well as the instruments used telling us the acknowledged Pasteur's advice and acted accordingly.

Pasteur's advice can not on the other hand have been taken by the "Surgeon" in Source C, we are told of a story of this man that refused to wear a clean coat during lectures, surgery and dissections, many doctors refused the advice of Lister and Pasteur seeing it as too much hard work, resulting in jeopardising

the lives of the patients. His coat is compared to the "ward sponge" again adding to

the probability that Pasteur's advice was not taken "The sponge was used in all dressings" this statement is exactly what Pasteur in source D says "encourages germs to multiply rapidly" proving they not taking the advice set by Pasteur,

Source B altho is a picture of the use of carbolic spray still the advice of Pasteur has not sunk in, all the surgeons are dressed in everyday formal clothes, who knows what germs the surgeons themselves may have brought in.

All in all Source B shows surgeons and doctors are taking into account that germs cause death, but they are only making slight changes, its a long road towards antiseptic and A-septic surgery if the surgeons in Source C follow the example of the surgeons in Source B, Pasteur's advice will sink in eventually



**ResultsPlus**

**Examiner Comments**

A solid level 3 response that would have been better if the nature of the sources had been addressed as well as the content.



**ResultsPlus**

**Examiner Tip**

Make sure you use and refer to all three sources mentioned in the question.

## Question 4

A high number of candidates lost precious time (and marks!) by either repeating the task to introduce their answer (e.g. 'In this essay I am going to look at which source is more useful for an historian enquiring ... In doing so I will be comparing sources E and F') or simply copying what the caption tells them about the nature of the source(s). In some cases such irrelevant paragraphs amounted to over half a page.

Regarding the structure of the answer, most candidates started with a judgement and worked backwards to support it – in several cases they contradicted the initial judgement numerous times throughout the answer. Although most candidates offered an overall conclusion at the end (albeit only a brief sentence in some cases), a fair number failed to do so whilst others introduced entirely new points in the conclusion rather than summarising what they had said before.

As in previous years, answers to Q4 were mainly content-focused, and the majority of candidates focused on the sources strengths and limitations. They usually recognised that source E highlights the disagreements with Lister's work, talks about Lister and Pasteur, and / or mainly opposes Lister, whereas source F highlights Lister's achievements and shows him in a positive light. Thus, most candidates reached high marks in L2, low marks (including L1) were usually due to simply copying from or paraphrasing the sources rather than extracting valid details to support the judgement. Most candidates dealt well with the content of the sources, but as previously, nature was a different matter. The most frequent aspect of nature addressed was reliability, followed by bias, type of source, purpose and language. Contrary to comments on the sources' contents, statements about their nature were usually very assertive and one-sided – very few candidates recognised that for example source F can be reliable because it has been published in the 20th century and is therefore well-researched, but can be unreliable because we don't know what sources it is based on, who wrote it and whether it reflects one opinion or more and that it could have been altered (e.g. some facts omitted) to appeal to a wider (TV) audience, etc.

Simply replacing phrases such as 'is reliable' with 'could / may / might be reliable' could present an answer in a very different light. It seems that many candidates have fallen victim to clichés, such as newspapers need to sell copies, therefore any information in there is exaggerated, sensationalised with an intention to persuade rather than inform, whereas books are written to be informative and TV series are made to entertain. Many candidates thought that the newspaper article was more reliable because it was published 'closer to Lister's death' – very few mentioned the 'benefit of hindsight' in source F.

Answers would certainly benefit from teachers' spending more time on explaining aspects of nature and the fact that it is not always possible to state beyond doubt whether a source is biased / reliable, etc. and that both sides need to be discussed.

Candidates have a clear idea about what they need to do for this question and how to structure responses. Nevertheless points to consider include the following.

To support teaching and learning:

1. Candidates should start with the content of the first source being analysed to comment on what this shows/proves to the historian about the enquiry. At this point just copying out sections from the source is only helpful if there is then a comment from the candidate about what this shows- in this case- about the importance of Lister.
2. Candidates should continue by commenting on the content of the source but this time suggesting what has been left out and what impact that has on the enquiry.
3. After the content is dealt with for that particular source it is probably logical to stay with the same source and comment on reliability. Glib generalisations about primary sources being better than secondary sources or newspapers always exaggerating continue to

reoccur. The focus needs to be specific to the historical investigation.

4. The same steps should be repeated for the other source.

5. The word 'bias' is mostly unhelpful! It is a catch all word that is rarely linked to the specific investigation.

Which of Sources E or F is more useful to the historian enquiring into the importance of Lister to the development of surgery? Explain your answer, using Sources E and F.

(10)

Firstly, source E doesn't really highlight or show the ~~right~~ significance of Lister's work. However does give an insight as to some of the problems that he had, such as ~~me~~ convincing people about the accuracy of his work. This source doesn't really help a historian, as it is mainly about problems that Lister had at the time, rather than the overall importance of his work throughout the development of surgery.

In my opinion source F is far more useful, as it gives an idea of how his work was used and backs up it's statements with a statistic (millions of lives were saved by the new idea of antiseptis).

Another factor in the superiority of source F is the fact that it is written around 70 years after Lister's ideas came out, meaning that they could see the impact it had over time and were sure of its accuracy. Whereas source E is written shortly after it was produced so were unsure if it worked as it hadn't been tested thoroughly enough, so are bound to have a more negative point of view, as they didn't know the effect it would have.



**ResultsPlus**  
Examiner Comments

Both content and nature are used effectively in this Level 3 response.



**ResultsPlus**  
Examiner Tip

Avoid simplistic responses that do not deal with the specific sources used in the question.

## Question 5

Most candidates were able to attempt question 5. There were very few blank scripts. The majority were able to reach Level 2 or Level 3. A handful of responses were given L1 and these typically consisted of a few simple statements taken directly from the source and consisted of no more than a couple of lines of text.

L2 answers were more common and typical responses consisted of candidates taking a systematic approach to the sources and describing a number of key points from each. There was some link to the question at this level but it was minimal. Despite this the vast majority of L2 answers were able to achieve a mid-level mark. Typically Level 2 answers did not include any own knowledge.

L3 were responses were generally very good. Candidates focused on the issue of resistance and offered some strong examples from the sources to back up their argument. Answers at this level were one sided and generally focused on one issue of resistance such as the surgeon wearing the same coat. A large number of candidates limited themselves to 10 marks for this question as they failed to combine the sources with additional recalled knowledge. Candidates should be made aware in the future that making use of the other sources can count towards additional recalled knowledge and thus would have enabled them to gain 11 or 12 marks for this question.

A handful of candidates reached L4 for this question. Level 4 answers were generally very good and balanced resistance to change with other factors. Arguments were sustained and came to a logical conclusion after summarising the available evidence. However many candidates were limited to 14 marks as they failed to take into consideration the strength of the evidence. The quality of the written communication was also high at this level and candidates expressed themselves very clearly and in a well thought out manner.

To support teaching and learning:

1. Candidates MUST recognise that they need to use sources and own knowledge for question 5.
2. Candidates really need to work out what the question is asking. This question always asks 'how far you agree with the statement' so this question is asking students to put together a case and examine arguments for and against the hypotheses. In this case the question was whether it was resistance to change that led to opposition or not. Those who could comment on other factors often considered lack of scientific proof, issues with Lister himself and his inconsistencies.
3. Logically candidates should begin by examining the proposition of the question before considering other factors/countering the terms of the question. Most candidates found it much easier to comment on the fact that there was real opposition to Lister because surgeons did not want to change their ways and most candidates were able to effectively use source C to prove this.
4. Those that made it into Level 4 were rarely able to comment on the strength of the evidence in the context of the question. Those who did comment on reliability did so as an add-on. For 15/16 marks students need to pick one source and comment on the value of it to the enquiry. Ultimately the candidate who can sustain a line of argument and use the sources and own knowledge effectively and add something about the value of a source to the enquiry is a very able student indeed!

An excellent example of reliability being used to advance the line of argument is-:

*'Source G suggests that the issue of lack of proof was a real problem and it meant that Lister was opposed because of it. The fact that Cheyne- one of Lister's assistances was commenting in the 1920s- years after the discovery of the germ theory would suggest*

*that he has a clear overview of events at the time and has thought about the reasons for opposition to Lister.'*

A good well-argued Level 4 response that makes effective use of the sources and own knowledge is the following response.

As with any of the breakthroughs or great innovations in surgery, there was a great amount of opposition to Lister's ideas; surgeons were often conservative and did not like the idea of having to change and adapt their methods. One surgeon is described as having called out to his assistant to: "Close the door before one of Mr Lister's germs fly in!" Surgeons were great show men and some are described, as a result, as having been quite arrogant; playing up to the crowds that gathered in their operating theatres to watch the grisly scene unfold. Surgeons were, as it says in Source G, interested in the speed of the operations as "...in working faster". Antiseptic surgery challenged this need for speed as it required surgeons to slow down, wash their hands in unpleasant carbolic acid and use Lister Spray during the operations and many surgeons were opposed to this change in mentality from speed. Therefore it could be argued that this resistance to change was a great factor in the opposition to Lister's ideas.

However, it also says in Source G that surgeons were interested in "keeping up with developments in anatomy" suggesting that they were not totally resistant to change and were prepared to accept that the human anatomy was not fully understood. This implies that a resistance to change may not have been the main reason for opposition to Lister's ideas.

Source E also describes how "Lister's early methods did not always work..." and that his "statistics shows conflicting results." Lister's methods required a meticulous mind and attitude to work, which few other surgeons possessed. Many surgeons who tried to repeat Lister's procedures did not get the same results as they did not share in Lister's arguable individual brilliance and were not as thorough in their work. This inability to reproduce the same results created discrepancies in the statistics and created much opposition against antiseptic surgery. After all, what use was a technique that only one man could use?

Despite this, Source G details a willingness on the part of the surgeons to learn new techniques as the surgeons are keen to be "keeping up with developments in anatomy" and the books published by Lister's assistants advocating and explaining the use of Antiseptic Surgery such as Source B would have been read and applied by some surgeons. This suggests that the lack of methodical work and inability to reproduce Lister's results was not the main reason for the opposition to Lister's ideas either.

Another reason for opposition was that Germ Theory was a relatively new idea, as it was published in 1861, whilst Lister discovered the effective nature of carbolic acid in 1864 after having seen it used to treat sewage. As it says in Source E, "few people believed in germ theory". Lister's ideas were based upon Pasteur's discovery of germs and microorganisms and if a surgeon could not be convinced of the existence of "tiny objects about 0.001mm in size" then they would not believe that these micro-organisms were causing infection, then they would not be persuaded of the merits of Lister's techniques. Furthermore, even if surgeons did recognise the existence of germs many believed that they spontaneously generated and were not as a result of unsanitary conditions and the use of a filthy "ward sponge" on wounds or that the germs could be carried from a dissection to an operation on an "old coat... stained with blood and covered in pus." To the surgeons the existence of these "tiny germs seemed to have no relevance to practical work."

In conclusion, there were three main reasons for the opposition to Lister's ideas: a resistance to change and a conservative attitude on the part of the surgeons, an inability to reproduce Lister's results through a lack of methodical surgery and a lack of belief in the existence of micro-organisms and Pasteur's Germ Theory. Each fuelled the "resistance and arguments" but of all the reasons for opposition the lack of belief in Germ Theory

was probably the main reason for the opposition. Germ Theory was the basis of Lister's work and without a thorough understanding of Pasteur's experiments both in the French brewing industry and using the swan-necked flask to prove the existence of airborne micro-organisms surgeons could not possibly have understood the merits of, let alone use, Lister's techniques such as the use of carbolic acid and sterile cat-gut as a ligature. Therefore I disagree with the statements as, although I recognise that conservatism was part of the reason Lister's ideas were opposed I believe that a lack of understanding and acceptance of the Germ Theory played a far greater role.

## Paper Summary

Candidates would do well to:

- Read each question carefully and make sure your answer focuses on its requirements.
- Make sure the responses to question 1 make clear inferences and support them with information in the source.
- Question 2 is the question about message or impression or why a source was made or spoken.
- Answers to Question 3 should make a judgement on levels of support provided by content and nature and cross reference between the three sources.
- Candidates should respond to question 4 with comment on both content and nature in making a judgement.
- Question 5 should make use of relevant sources and your own knowledge of the topic.

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