

## Sample assessment materials for first teaching September 2016

Paper 1: Thematic study and historic environment (1HI0/11)

**Option 11: Medicine in Britain,  
c1250–present  
and The British sector of the Western  
Front, 1914–18: injuries, treatment  
and the trenches**



## The British sector of the Western Front, 1914–18: injuries, treatment and the trenches

Question	
<b>1</b>	Describe <b>two</b> features of the support trench system on the Western Front. <b>Target:</b> knowledge of key features and characteristics of the period. <b>AO1:</b> 4 marks.
Marking instructions	
<p>Award 1 mark for each valid feature identified up to a maximum of two features. The second mark should be awarded for supporting information.</p> <p>e.g.</p> <ul style="list-style-type: none"><li>• <i>The support trenches were a few hundred yards behind the front line (1). They provided additional supplies and men in case of attack (1).</i></li><li>• <i>Support trenches were safer than the front line (1). Support trenches were rarely targeted by enemy snipers (1).</i></li><li>• <i>Support trenches were often in better condition than the front line (1). They were less likely to have been hit by artillery (1).</i></li></ul> <p>Accept other appropriate features and supporting information.</p>	

<b>Question</b>		
<b>2 (a)</b>		How useful are Sources A and B for an enquiry into the problems involved in performing operations on the Western Front? Explain your answer, using Sources A and B and your knowledge of the historical context.  <b>Target:</b> Analysis and evaluation of source utility. <b>AO3:</b> 8 marks.
<b>Level</b>	<b>Mark</b>	<b>Descriptor</b>
	0	No rewardable material.
<b>1</b>	<b>1–2</b>	<ul style="list-style-type: none"> <li>A simple judgement on utility is given, and supported by undeveloped comment on the content of the sources and/or their provenance<sup>1</sup>. Simple comprehension of the source material is shown by the extraction or paraphrase of some content. Limited contextual knowledge is deployed with links to the sources.</li> </ul>
<b>2</b>	<b>3–5</b>	<ul style="list-style-type: none"> <li>Judgements on source utility for the specified enquiry are given, using valid criteria. Judgements are supported by developed comment related to the content of the sources and/or their provenance<sup>1</sup>. Comprehension and some analysis of the sources is shown by the selection and use of material to support comments on their utility. Contextual knowledge is used directly to support comments on the usefulness of the content of the sources and/or their provenance.</li> </ul>
<b>3</b>	<b>6–8</b>	<ul style="list-style-type: none"> <li>Judgements on source utility for the specified enquiry are given, applying valid criteria with developed reasoning which takes into account how the provenance<sup>1</sup> affects the usefulness of the source content. The sources are analysed to support reasoning about their utility. Contextual knowledge is used in the process of interpreting the sources and applying criteria for judgements on their utility.</li> </ul>
<p><b>Notes</b></p> <p>1. Provenance = nature, origin, purpose.</p>		
<p><b>Marking instructions</b></p> <p>Markers must apply the descriptors above in line with the general marking guidance (page 3).</p> <p>No credit may be given for contextual knowledge unless it is linked to evaluation of the sources.</p> <p>No credit may be given for generic comments on provenance which are not used to evaluate source content.</p>		
<p><b>Indicative content guidance</b></p> <p>Answers must be credited according to candidates' deployment of material in relation to the qualities outlined in the mark scheme. While specific references are made in the indicative content below, this does not imply that these must be included; other relevant material must also be credited. The grouping of points below does not imply that this is how candidates are expected to structure their answers.</p>		
<p><b>Source A</b></p> <p>The usefulness could be identified in terms of the following points which could be drawn from the source:</p> <ul style="list-style-type: none"> <li>The content is useful in the way it suggests there were problems because of the high number of casualties and limited number of medical personnel.</li> <li>The content is useful because it suggests that injuries and pain may have been exacerbated by the journey from the battlefield to the hospital and the time taken.</li> <li>It is useful in the way it suggests that personnel in the hospital adopted measures to try to overcome the problems, for example using unqualified personnel to administer anaesthetics.</li> </ul> <p>The following points could be made about the authorship, nature or purpose of the source and applied to ascribe usefulness to material drawn from it:</p> <ul style="list-style-type: none"> <li>The chaplain is writing about his own experiences. While he has no reason to lie, his evidence need to be examined in context for exaggeration which would affect the usefulness of the information about the extent to which he was involved in surgery regularly.</li> <li>The chaplain was a religious man rather than medical staff; we don't know how much experience he had of such conditions and he might have been particularly sensitive to suffering and death, which could affect the reliability of his account about the extent of suffering and therefore the usefulness of the information.</li> </ul>		

Knowledge of the historical context should be deployed to support inferences and/or to assess the usefulness of information. Relevant points may include:

- Source A is about a casualty clearing station, where the wounded were taken and most surgery was done; there would be a lot of pressure on the medical staff so the source seems to reflect the situation accurately.
- This record is based on the experiences of the chaplain at a casualty clearing station where the most severely wounded would be taken and during the battle of the Somme, when casualties were particularly high. This could mean his account, while accurate, is untypical and this affects the usefulness of the source.

### **Source B**

The usefulness could be identified in terms of the following points which could be drawn from the source:

- Source B is useful because it suggests many injuries were severe since men were already dying when they were brought into the ward.
- The content of Source B is useful as it suggests that the casualty rate was high since the hospital did not have enough beds for patients.
- Source B suggests resources were inadequate since they did not have blood for transfusions, which is useful to explain the problems they faced.

The following points could be made about the authorship, nature or purpose of the source and applied to ascribe usefulness to material drawn from it:

- Robertson was a surgeon and therefore can be regarded as an 'expert witness' which gives added weight to the information in Source B about the problems faced by surgeons.
- Robertson was writing from his own knowledge and in his diary so this is a private record, not intending to influence anyone and is therefore likely to be reliable information about the limits to what they were able to do.

Knowledge of the historical context should be deployed to support inferences and/or to assess the usefulness of information. Relevant points may include:

- Methods of storing blood were being developed at this time. This made it possible to perform more transfusions.
- Blood banks were set up for the Battle of Cambrai, 1917, showing how the army could anticipate the need for transfusions and improve patients' chances of survival.

<b>Question</b>	
<b>2 (b)</b>	<p>How could you follow up Source B to find out more about the problems involved in performing operations on the Western Front? In your answer, you must give the question you would ask and the type of source you could use.</p> <p><b>Target:</b> Source analysis and use (the ability to frame historical questions).  <b>AO3:</b> 4 marks.</p>
<b>Marking instructions</b>	
<p>Award 1 mark for selecting a detail in Source B that could form the basis of a follow-up enquiry and 1 mark for a question which is linked to it.</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>• <i>Detail in Source B that I would follow up: 'I could only transfuse an occasional patient.'</i> <b>(1)</b></li> <li>• <i>Question I would ask: Why were transfusions such a problem?</i> <b>(1)</b></li> </ul> <p>(No mark for a question that is <b>not</b> linked to following up Source B, e.g. '<i>because it would be an interesting question to ask</i>'.)</p> <p>Award 1 mark for identification of an appropriate source and 1 mark for an answer that shows how it might help answer the chosen follow-up question.</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>• <i>What type of source I would look for: Army medical records about how blood was stored and made available to the hospitals.</i> <b>(1)</b></li> <li>• <i>How this might help answer my question: This would help me to see if the problem was about the actual transfusion process or about the quantity of blood available.</i> <b>(1)</b></li> </ul> <p>Accept other appropriate alternatives.</p>	

## **Medicine in Britain, c1250–present**

<b>Question</b>		
<b>3</b>		Explain <b>one</b> way in which people's reactions to the plague in Britain were similar in the fourteenth and seventeenth centuries.  <b>Target:</b> Analysis of second order concepts: similarity [AO2]; Knowledge and understanding of features and characteristics of the period [AO1]. <b>AO2:</b> 2 marks. <b>AO1:</b> 2 marks.
<b>Level</b>	<b>Mark</b>	<b>Descriptor</b>
	0	No rewardable material.
<b>1</b>	<b>1–2</b>	<ul style="list-style-type: none"><li>Simple or generalised comment is offered about a similarity. [AO2]</li><li>Generalised information about the topic is included, showing limited knowledge and understanding of the periods. [AO1]</li></ul>
<b>2</b>	<b>3–4</b>	<ul style="list-style-type: none"><li>Features of the period are analysed to explain a similarity. [AO2]</li><li>Specific information about the topic is added to support the comparison, showing good knowledge and understanding of the periods. [AO1]</li></ul>

**Marking instructions**

Markers must apply the descriptors above in line with the general marking guidance (page 3).

Performance in AO1 and AO2 is interdependent. An answer displaying **no** qualities of AO2 cannot be awarded more than the top of Level 1, no matter how strong performance is in AO1; markers should note that the expectation for AO1 is that candidates demonstrate both knowledge *and* understanding.

**Indicative content guidance**

Answers must be credited according to candidates' deployment of material in relation to the qualities outlined in the mark scheme. While specific references are made in the indicative content below, this does not imply that these must be included; other relevant material must also be credited.

Relevant points may include:

- People's reactions were based on religion, for example fasting and praying during both epidemics, flagellants in 1348, the red cross and 'Lord have mercy' on the door in 1665.
- In both epidemics, people tried to purify the air by holding herbs to smell or burning fires/tar barrels.

<b>Question</b>			
<b>4</b>		Explain why there was rapid change in the treatment of illness in Britain during the twentieth century.  You may use the following in your answer: <ul style="list-style-type: none"> <li>• magic bullets</li> <li>• high-tech treatment</li> </ul> You <b>must</b> also use information of your own.	
<b>Level</b>	<b>Mark</b>	<b>Descriptor</b>	
	0	No rewardable material.	
<b>1</b>	<b>1–3</b>	<ul style="list-style-type: none"> <li>• A simple or generalised answer is given, lacking development and organisation. [AO2]</li> <li>• Limited knowledge and understanding of the topic is shown. [AO1]</li> </ul>	
<b>2</b>	<b>4–6</b>	<ul style="list-style-type: none"> <li>• An explanation is given, showing limited analysis and with implicit or unsustained links to the conceptual focus of the question. It shows some development and organisation of material, but a line of reasoning is not sustained. [AO2]</li> <li>• Accurate and relevant information is included, showing some knowledge and understanding of the period. [AO1]</li> </ul> <p><i>Maximum 5 marks for Level 2 answers that do not go beyond aspects prompted by the stimulus points</i></p>	
<b>3</b>	<b>7–9</b>	<ul style="list-style-type: none"> <li>• An explanation is given, showing some analysis, which is mainly directed at the conceptual focus of the question. It shows a line of reasoning that is generally sustained, although some passages may lack coherence and organisation. [AO2]</li> <li>• Accurate and relevant information is included, showing good knowledge and understanding of the required features or characteristics of the period studied. [AO1]</li> </ul> <p><i>Maximum 8 marks for Level 3 answers that do not go beyond aspects prompted by the stimulus points.</i></p>	
<b>4</b>	<b>10–12</b>	<ul style="list-style-type: none"> <li>• An analytical explanation is given which is directed consistently at the conceptual focus of the question, showing a line of reasoning that is coherent, sustained and logically structured. [AO2]</li> <li>• Accurate and relevant information is precisely selected to address the question directly, showing wide-ranging knowledge and understanding of the required features or characteristics of the period studied. [AO1]</li> </ul> <p><i>No access to Level 4 for answers which do not go beyond aspects prompted by the stimulus points.</i></p>	

### **Marking instructions**

Markers must apply the descriptors above in line with the general marking guidance (page 3).

Performance in AO1 and AO2 is interdependent. An answer displaying **no** qualities of AO2 cannot be awarded more than the top of Level 1, no matter how strong performance is in AO1; markers should note that the expectation for AO1 is that candidates demonstrate both knowledge *and* understanding.

The middle mark in each level may be achieved by stronger performance in either AO1 or AO2.

### **Indicative content guidance**

Answers must be credited according to candidates' deployment of material in relation to the qualities outlined in the mark scheme. While specific references are made in the indicative content below, this does not imply that these must be included; other relevant material must also be credited.

Relevant points may include:

- The role of science and the discovery of Salvarsan 606 as a magic bullet in the early twentieth century led to other new medicines which could target microbes and therefore a range of different diseases, for example penicillin.
- Research teams were important because scientists with different specialisms could share ideas.
- Government funding and the role of technology in the mass production of drugs, made treatment more widely available.
- The establishment of the NHS meant that there was improved access to treatment through both the GP and hospitals.
- New technologies made better diagnosis possible, leading to intervention at an earlier stage, when there is more chance of successful treatment, for example, the diagnosis and treatment of cancer.
- Attitudes towards government action changed, with the view developing that the government had a responsibility to take action on health issues and to ensure that the NHS was well funded.

<b>Question</b>		
<b>Level</b>	<b>Mark</b>	<b>Descriptor</b>
	0	No rewardable material.
<b>1</b>	<b>1–4</b>	<ul style="list-style-type: none"> <li>A simple or generalised answer is given, lacking development and organisation. [AO2]</li> <li>Limited knowledge and understanding of the topic is shown. [AO1]</li> <li>The overall judgement is missing or asserted. [AO2]</li> </ul>
<b>2</b>	<b>5–8</b>	<ul style="list-style-type: none"> <li>An explanation is given showing limited analysis and with implicit or unsustained links to the conceptual focus of the question. It shows some development and organisation of material, but a line of reasoning is not sustained. [AO2]</li> <li>Accurate and relevant information is included, showing some knowledge and understanding of the period. [AO1]</li> <li>The overall judgement is given but its justification is asserted or insecure. [AO2]</li> </ul> <p><i>Maximum 7 marks for Level 2 answers that do not go beyond aspects prompted by the stimulus points.</i></p>
<b>3</b>	<b>9–12</b>	<ul style="list-style-type: none"> <li>An explanation is given, showing some analysis, which is mainly directed at the conceptual focus of the question. It shows a line of reasoning that is generally sustained, although some passages may lack coherence and organisation. [AO2]</li> <li>Accurate and relevant information is included, showing good knowledge and understanding of the required features or characteristics of the period studied. [AO1]</li> <li>The overall judgement is given with some justification, but some criteria selected for the required judgement are left implicit or not validly applied. [AO2]</li> </ul> <p><i>Maximum 11 marks for Level 3 answers that do not go beyond aspects prompted by the stimulus points.</i></p>
<b>4</b>	<b>13–16</b>	<ul style="list-style-type: none"> <li>An analytical explanation is given which is directed consistently at the conceptual focus of the question, showing a line of reasoning that is coherent, sustained and logically structured. [AO2]</li> <li>Accurate and relevant information is precisely selected to address the question directly, showing wide-ranging knowledge and understanding of the required features or characteristics of the period studied. [AO1]</li> <li>Criteria for the required judgement are justified and applied in the process of reaching the overall judgement. [AO2]</li> </ul> <p><i>No access to Level 4 for answers that do not go beyond aspects prompted by the stimulus points.</i></p>

Marks for SPaG		
Performance	Mark	Descriptor
	<b>0</b>	<ul style="list-style-type: none"> <li>The learner writes nothing.</li> <li>The learner's response does not relate to the question.</li> <li>The learner's achievement in SPaG does not reach the threshold performance level, e.g. errors in spelling, punctuation and grammar severely hinder meaning.</li> </ul>
Threshold	<b>1</b>	<ul style="list-style-type: none"> <li>Learners spell and punctuate with reasonable accuracy.</li> <li>Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall.</li> <li>Learners use a limited range of specialist terms as appropriate.</li> </ul>
Intermediate	<b>2–3</b>	<ul style="list-style-type: none"> <li>Learners spell and punctuate with considerable accuracy.</li> <li>Learners use rules of grammar with general control of meaning overall.</li> <li>Learners use a good range of specialist terms as appropriate.</li> </ul>
High	<b>4</b>	<ul style="list-style-type: none"> <li>Learners spell and punctuate with consistent accuracy.</li> <li>Learners use rules of grammar with effective control of meaning overall.</li> <li>Learners use a wide range of specialist terms as appropriate.</li> </ul>

**Marking instructions**

Markers must apply the descriptors above in line with the general marking guidance (page 3).

Performance in AO1 and AO2 is interdependent. An answer displaying **no** qualities of AO2 cannot be awarded more than the top of Level 1, no matter how strong performance is in AO1; markers should note that the expectation for AO1 is that candidates demonstrate both knowledge *and* understanding.

The first two bullet points [AO1 and AO2] account for 3 of the 4 marks in the level and are equally weighted; the third bullet point [AO2] accounts for the remaining mark. Once the level has been found, there are two steps to follow to determine the mark within the level:

- Markers should consider bullet points 1 and 2 together. Strong performance (for the level) in both would be awarded all 3 marks, while 2 marks may be achieved by stronger performance in either bullet point; weak performance would be awarded 1 mark.
- The fourth mark in each level is allocated to the bullet point 3 and should be considered independently of the award of the other marks.

**Indicative content guidance**

Answers must be credited according to candidates' deployment of material in relation to the qualities outlined in the mark scheme. While specific references are made in the indicative content below, this does not imply that these must be included; other relevant material must also be credited. The grouping of points below does not imply that this is how candidates are expected to structure their answers.

Relevant points that support the statement may include:

- The work of Vesalius improved knowledge of anatomy but had little relevance to illness and treatment, therefore there was little change.
- The work of Harvey improved knowledge of physiology but had little impact on knowledge of disease and treatment therefore there was little change.
- Medical training was still dominated by the ideas of Galen, therefore little change was likely.
- Religion remained a key factor in people's ideas about disease, prevention and treatment, for example Charles II continued the ceremony of 'touching' to cure scrofula.

Relevant points to counter the statement may include:

- The authority of the Church was declining and therefore people were more willing to challenge Galen's ideas.
- The printing press meant that ideas could spread more rapidly and medical students/ doctors could see accurate drawings of the body even if they didn't conduct dissections. This undermined Galen's authority and made challenges to accepted ideas more possible.
- The Royal Society was set up to encourage scientific investigation and communication of new ideas.
- Thomas Sydenham stressed the importance of studying the symptoms of different diseases, leading to a new method of classification and differentiation of disease.

<b>Question</b>		
<b>6</b>		<p>'Jenner's vaccination against smallpox was a major breakthrough in the prevention of disease in Britain during the period c1700–c1900.' How far do you agree? Explain your answer.</p> <p>You may use the following in your answer.</p> <ul style="list-style-type: none"> <li>• cowpox</li> <li>• cholera</li> </ul> <p>You <b>must</b> also use information of your own.</p> <p><b>Target:</b> Analysis and evaluation of second order concepts: significance/change [AO2]; Knowledge and understanding of features and characteristics [AO1].</p> <p><b>AO2:</b> 10 marks</p> <p><b>AO1:</b> 6 marks.</p> <p><b>Spelling, punctuation, grammar and the use of specialist terminology (SPaG):</b> up to 4 additional marks.</p>
<b>Level</b>	<b>Mark</b>	<b>Descriptor</b>
	0	No rewardable material.
<b>1</b>	<b>1–4</b>	<ul style="list-style-type: none"> <li>• A simple or generalised answer is given, lacking development and organisation. [AO2]</li> <li>• Limited knowledge and understanding of the topic is shown. [AO1]</li> <li>• The overall judgement is missing or asserted. [AO2]</li> </ul>
<b>2</b>	<b>5–8</b>	<ul style="list-style-type: none"> <li>• An explanation is given showing limited analysis and with implicit or unsustained links to the conceptual focus of the question. It shows some development and organisation of material, but a line of reasoning is not sustained. [AO2]</li> <li>• Accurate and relevant information is included, showing some knowledge and understanding of the period. [AO1]</li> <li>• The overall judgement is given but its justification is asserted or insecure. [AO2]</li> </ul> <p><i>Maximum 7 marks for Level 2 answers that do not go beyond aspects prompted by the stimulus points.</i></p>
<b>3</b>	<b>9–12</b>	<ul style="list-style-type: none"> <li>• An explanation is given, showing some analysis, which is mainly directed at the conceptual focus of the question. It shows a line of reasoning that is generally sustained, although some passages may lack coherence and organisation. [AO2]</li> <li>• Accurate and relevant information is included, showing good knowledge and understanding of the required features or characteristics of the period studied. [AO1]</li> <li>• The overall judgement is given with some justification, but some criteria selected for the required judgement are left implicit or not validly applied. [AO2]</li> </ul> <p><i>Maximum 11 marks for Level 3 answers that do not go beyond aspects prompted by the stimulus points.</i></p>
<b>4</b>	<b>13–16</b>	<ul style="list-style-type: none"> <li>• An analytical explanation is given which is directed consistently at the conceptual focus of the question, showing a line of reasoning that is coherent, sustained and logically structured. [AO2]</li> <li>• Accurate and relevant information is precisely selected to address the question directly, showing wide-ranging knowledge and understanding of the required features or characteristics of the period studied. [AO1]</li> <li>• Criteria for the required judgement are justified and applied in the process of reaching the overall judgement. [AO2]</li> </ul> <p><i>No access to Level 4 for answers that do not go beyond aspects prompted by the stimulus points.</i></p>

Marks for SPaG		
Performance	Mark	Descriptor
	<b>0</b>	<ul style="list-style-type: none"> <li>The learner writes nothing.</li> <li>The learner's response does not relate to the question.</li> <li>The learner's achievement in SPaG does not reach the threshold performance level, e.g errors in spelling, punctuation and grammar severely hinder meaning.</li> </ul>
Threshold	<b>1</b>	<ul style="list-style-type: none"> <li>Learners spell and punctuate with reasonable accuracy.</li> <li>Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall.</li> <li>Learners use a limited range of specialist terms as appropriate.</li> </ul>
Intermediate	<b>2–3</b>	<ul style="list-style-type: none"> <li>Learners spell and punctuate with considerable accuracy.</li> <li>Learners use rules of grammar with general control of meaning overall.</li> <li>Learners use a good range of specialist terms as appropriate.</li> </ul>
High	<b>4</b>	<ul style="list-style-type: none"> <li>Learners spell and punctuate with consistent accuracy.</li> <li>Learners use rules of grammar with effective control of meaning overall.</li> <li>Learners use a wide range of specialist terms as appropriate.</li> </ul>
<b>Marking instructions</b>		
Markers must apply the descriptors above in line with the general marking guidance (page 3).		
Performance in AO1 and AO2 is interdependent. An answer displaying <b>no</b> qualities of AO2 cannot be awarded more than the top of Level 1, no matter how strong performance is in AO1; markers should note that the expectation for AO1 is that candidates demonstrate both knowledge <i>and</i> understanding.		
The first two bullet points [AO1 and AO2] account for 3 of the 4 marks in the level and are equally weighted; the third bullet point [AO2] accounts for the remaining mark. Once the level has been found, there are two steps to follow to determine the mark within the level:		
<ul style="list-style-type: none"> <li>Markers should consider bullet points 1 and 2 together. Strong performance (for the level) in both would be awarded all 3 marks, while 2 marks may be achieved by stronger performance in either bullet point; weak performance would be awarded 1 mark.</li> <li>The fourth mark in each level is allocated to the bullet point 3 and should be considered independently of the award of the other marks.</li> </ul>		
<b>Indicative content guidance</b>		
Answers must be credited according to candidates' deployment of material in relation to the qualities outlined in the mark scheme. While specific references are made in the indicative content below, this does not imply that these must be included; other relevant material must also be credited. The grouping of points below does not imply that this is how candidates are expected to structure their answers.		
Relevant points that support the statement may include:		
<ul style="list-style-type: none"> <li>Jenner's vaccination was the first time a specific disease could be effectively prevented.</li> <li>The only development in the prevention of disease before Jenner's vaccination was during the eighteenth century, when inoculation was used, but this had many problems, so it was not a major breakthrough.</li> <li>Jenner's vaccination succeeded in preventing one of the major killer diseases of the period, so that by 1900 it was no longer the threat it had been in 1700.</li> <li>Jenner was willing to offer free vaccinations so that all groups within society could receive protection from smallpox.</li> </ul>		
Relevant points to counter the statement may include:		
<ul style="list-style-type: none"> <li>Many people resisted Jenner's vaccination because they disliked the idea of using a disease linked to animals or because vaccination was sometimes incorrectly applied and seemed to fail; it therefore had limited effect until it was made compulsory and enforced by the government in 1853 and 1871.</li> <li>Preventive measures against disease did not change – during the cholera epidemics of the nineteenth century, local authorities ordered barrels of tar to be burned, based on the idea of miasma.</li> <li>No one understood how or why the vaccination worked, and so this technique could not be applied to other major killer diseases such as cholera which appeared as a new threat in the nineteenth century.</li> <li>The application of Jenner's vaccination depended on the chance link between smallpox and cowpox; even if the link was understood, it could not be replicated for other diseases. Only after the work of Pasteur and Koch in the late nineteenth century could vaccination be understood and others developed.</li> </ul>		