

**Table 1: Summary of the advantages and disadvantages of the clinical data abstraction methods**

	Manual	Simply query	NLP
<b>Advantages</b>	<ul style="list-style-type: none"> <li>• Review of entire record enables collection of clinical details</li> <li>• Discrete data elements retrieved from large volumes of data</li> <li>• Discover clinical decision support alerts</li> </ul>	<ul style="list-style-type: none"> <li>• Needed for searching full free text entries</li> <li>• Providers prefer to enter free text</li> <li>• Free text is required for complex requirements such as clinical trial recruitment</li> </ul>	<ul style="list-style-type: none"> <li>• Can convert unstructured free text into structured and codified format</li> <li>• Less time</li> <li>• Less effort</li> <li>• Can recognize related words and phrases</li> <li>• Sift through large volumes of data quickly</li> <li>• Useful for MU, quality measures</li> </ul>
<b>Disadvantages</b>	<ul style="list-style-type: none"> <li>• Unstructured notes more difficult to abstract</li> <li>• Unreliable results</li> <li>• Time consuming</li> <li>• Expensive</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Difficult to retrieve:</b> <ol style="list-style-type: none"> <li>1. <b>Abbreviations</b></li> <li>2. <b>Negations</b></li> <li>3. <b>Acronyms</b></li> <li>4. <b>Hedge phrases</b></li> <li>5. <b>Lack of standard grammar and punctuation</b></li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Cost</b></li> <li>• <b>Still need to do quality control and other validation techniques</b></li> </ul>