**Summary of considerations for designing retrospective chart reviews studies**

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| Create well-defined, clearly articulated research questions |
| Consider sampling questions *a priori* |
| Operationalize variables included in retrospective chart review |
| Train and monitor data abstractors |
| Develop and use standardized data abstraction forms |
| Create a data abstraction procedure manual |
| Develop explicit inclusion and exclusion criteria |
| Address inter-rater and intra-rater reliability |
| Conduct a pilot test |
| Address confidentiality and ethical considerations |

Methodological Steps: Conducting Retrospective Chart Review Research

| **Step** | **Components** | **Elements** |
|---|---|---|
| 1) Conception | Research Formulation | • Design research question(s)<br>• Develop a hypothesis |
| | Clinical Scan | • Use your own clinical judgment and experience<br>• Incorporate the clinical expertise and consultation of others |
| 2) Literature Review | Literature Review | • Search more then one Boolean database<br>• Review the literature (published and unpublished studies) |
| 3) Proposal Development | Write the Proposal | • Write the research proposal |

| Step | Components | Elements |
|---|---|---|
| | | • Use the chart review to plan future studies |
| | Operationalize the Variables | • Define the study variables<br>• Examine the design of existing health records and how the data is recorded |
| 4) Data Abstraction Instrument | Develop Abstraction Instrument | • Create a document that provides chart reviewers or data abstractors with an instrument to record the required data<br>• Tool can be electronic and/or paper |
| | Use Data Abstraction Software | • Use a software package that parallels the data abstraction instrument<br>• e.g., Microsoft Access, MedQuest |
| 5) Develop Protocols | Construct Coding Manual | • Provide a clear set of protocols and guidelines that instruct the reviewers in the collection of data (determine where and how data will be captured)<br>• Detail rules for making decisions in ambiguous situations<br>• Describe how to manage missing data<br>• Revise as required (e.g., after pilot study) |
| 6) Data Abstraction | Determine Hospital/Institutional Site Requirements | • Chart procurement procedures can differ across sites<br>• Determine site-specific retrieval rates<br>• Determine limits to chart access |

| Step | Components | Elements |
|---|---|---|
| | Procedures to Select and Train Abstractors | • Selection of data abstractors (e.g., experience, profession, number, site specificity)<br>• Training and education of data collectors<br>• Data abstractors remain blind to the study hypothesis<br>• Data abstractors must be familiar with the health records and trained in the data abstraction instrument and protocols<br>• Check for inter-rater reliability among abstractors<br>• Management of conflicting data |
| 7) Sample | Sampling Issues | • Calculating sample size<br>• Consider sampling method<br>• Inclusion and exclusion criteria<br>• Managing missing data |
| 8) Ethics | Ethnics Review | • Obtain permission from institutional review board<br>• Seek review board approval for changes to the research protocols |
| 9) Pilot | Conduct Pilot Study | • Pilot studies allow researchers to assess: feasibility of the planned investigation, reliability of the data abstraction instrumentation, effectiveness of protocols, availability of data, and sampling concerns |