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A Systematic Review of the Cost-Effectiveness of Chemotherapy Regimens

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STATEMENT OF THE PROBLEM

Background

- Approximately 12 million people are diagnosed with cancer each year.[1]
- In 2010 the cost of cancer treatment was $125 billion, and it is projected to increase to over $158 billion by 2020.[2]

Estimated New Cancer Cases in the United States in 2015 [3]

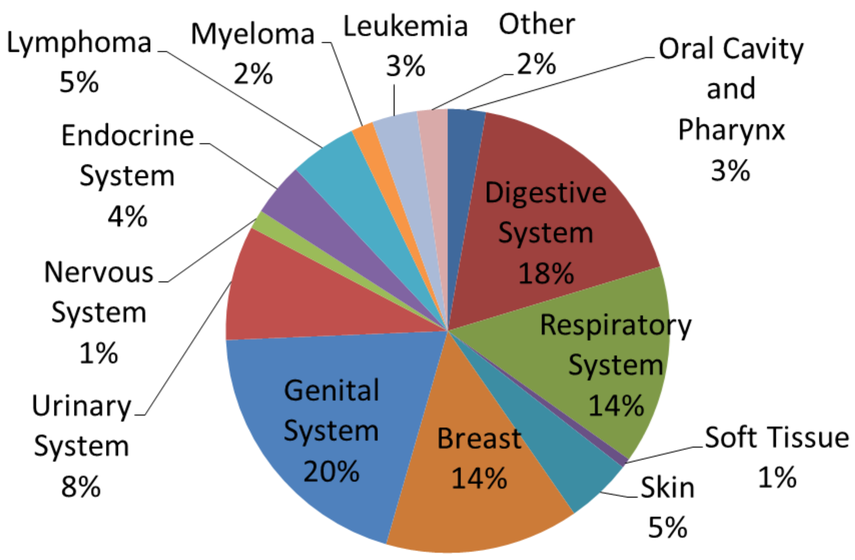

Figure 1

- Chemotherapy is a recent intervention in medicine and the number of chemotherapy drugs continues to increase.
- With this increase, there is a need to assess the cost-effectiveness data to help make clinical decisions.
- Studies containing cost-analysis data of specific chemotherapies include:
  - Cost-Benefit Analyses
  - Cost-Effective Analyses
  - Cost-Utility Analyses
  - Cost-Minimization Analyses

Significance of the Problem

- There are many studies evaluating costs in regards to chemotherapy treatments. However, there is lacking a comprehensive review of the data for clinicians to use to make cost-effective, quality medical decisions.

OBJECTIVE

This systematic review will assess the cost-effectiveness of anticancer medications with a special focus on the quality of life of patients undergoing chemotherapy with the intent to form recommendations that unite evidence-based literature with clinical practice.

LIMITATIONS

- Unexplained heterogeneity or inconsistency of results (including problems with subgroup analyses).
- The design and implementation of available studies suggesting high likelihood of bias.
- Ambiguity of disclosed evidence, including bias, limitations, and threats to validity.
- Imprecision of results, such as wide confidence intervals.
- High probability of publication bias.

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4. Aparasu R, Bentley J. Principles of research design and drug literature evalutation. Burlington, MA: Jones & Bartlett Learning; 2014:370. ISBN-13: 9781284038798.
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PROPOSED METHODS

Study Criteria

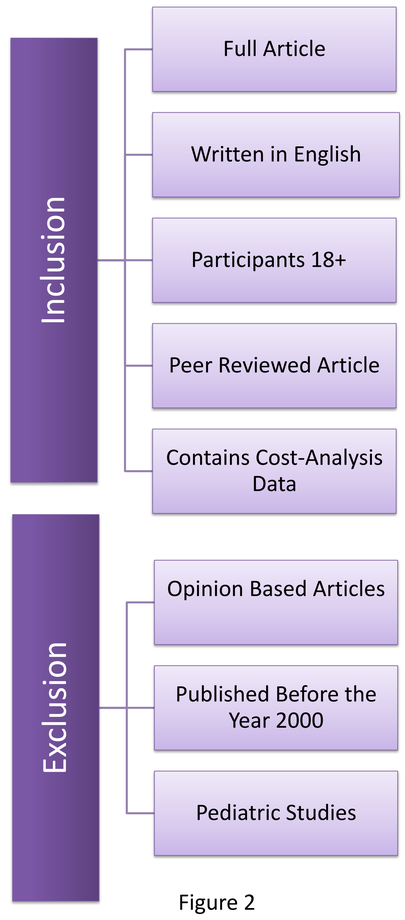

Figure 2

Methodology Outline[4]

Figure 3

SYNTHESIS OF EVIDENCE

Systematic Preferences Based on Pharmacoeconomic Analyses and GRADE Score[5]

GRADE Score	Cost Benefit Analysis	Cost-Effective Analysis	Cost-Utility Analysis	Cost-Minimization Analysis
A	Highest	High	Moderate	Low
B	High	High	Moderate	Low
C	Moderate	Moderate	Moderate	Low
D	Low	Low	Low	Lowest

Table 1

- Articles will be assessed in a categorical fashion according to type of neoplasm.
- Final recommendations will be made at the professional judgments of the researchers based on pharmacoeconomic data extracted from studies weighted by preference status.

PROJECT TIMELINE

Spring 2016
- Organize a grading rubric to review articles
- Establish and conduct initial literature search

2016-2017
- Establish a literature search and acquire final articles

2017-2018
- Develop a clinical reference for providers

FUTURE DIRECTIONS

- Evaluate new studies or literature and incorporate the data into the clinical reference.
- Periodically reevaluate costs associated with chemotherapy treatments.