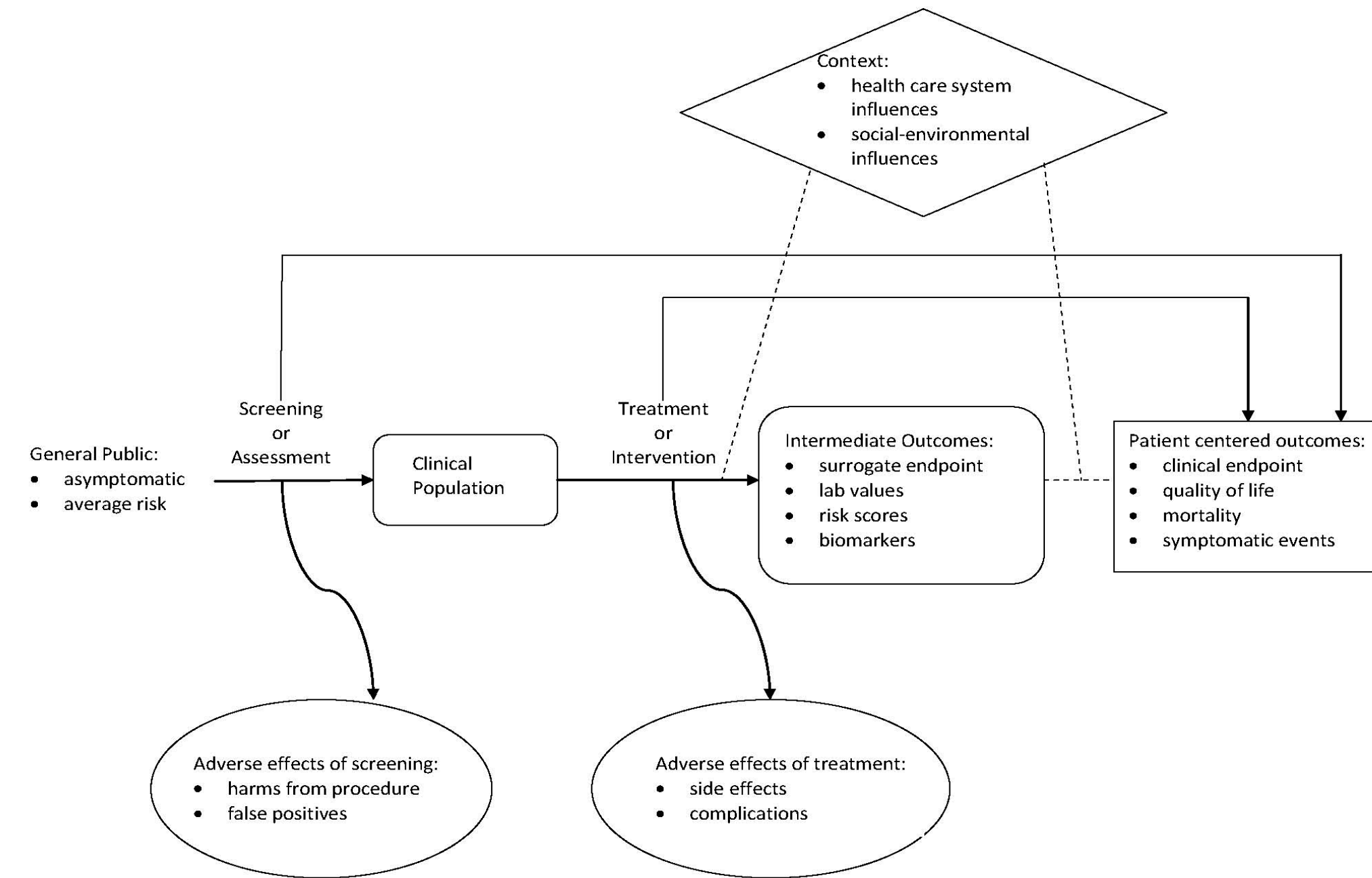# Using Analytic Frameworks to make sense of complex research queries

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The Problem:

Researchers starting a systematic review, comparative effectiveness review or other complex research project often come to a librarian with a number of interlocking and related questions. The true nature of the research question is often difficult to convey and may change over time as the project develops. Even with a thorough reference interview it can be difficult to determine exactly what literature the researcher needs. The PICOTS method for framing a search query was developed to be used for specific clinical queries and often is insufficient to express the complex search queries needed for systematic reviews, and other complex research projects.

The Tool:

The analytic framework is a tool for explicitly describing and communicating both the relevant clinical concepts, as well as the logic underlying the mechanisms by which an intervention may improve health outcomes. It is more robust than PICOTS because it takes into account such things as adverse effects and clearly distinguishes between intermediate and patient centered outcomes. An analytic framework can identify the different bodies of literature to be searched to answer specific key questions.

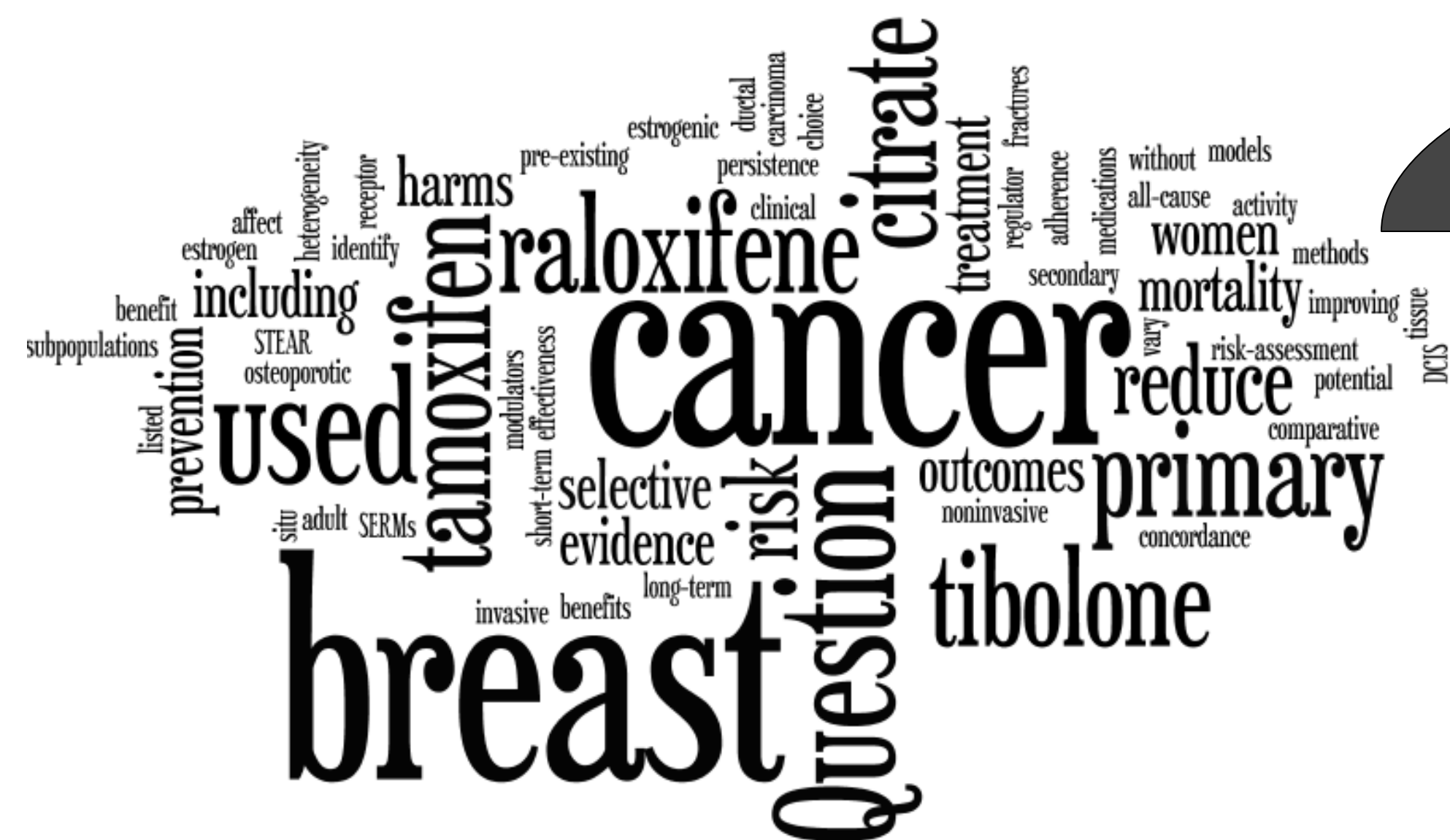☐ Work with investigators to fill out analytic framework.

☐ Using the analytic framework specify the key questions that should be answered with the literature search.

☐ Use the analytic framework to build queries for specific elements of the research question.

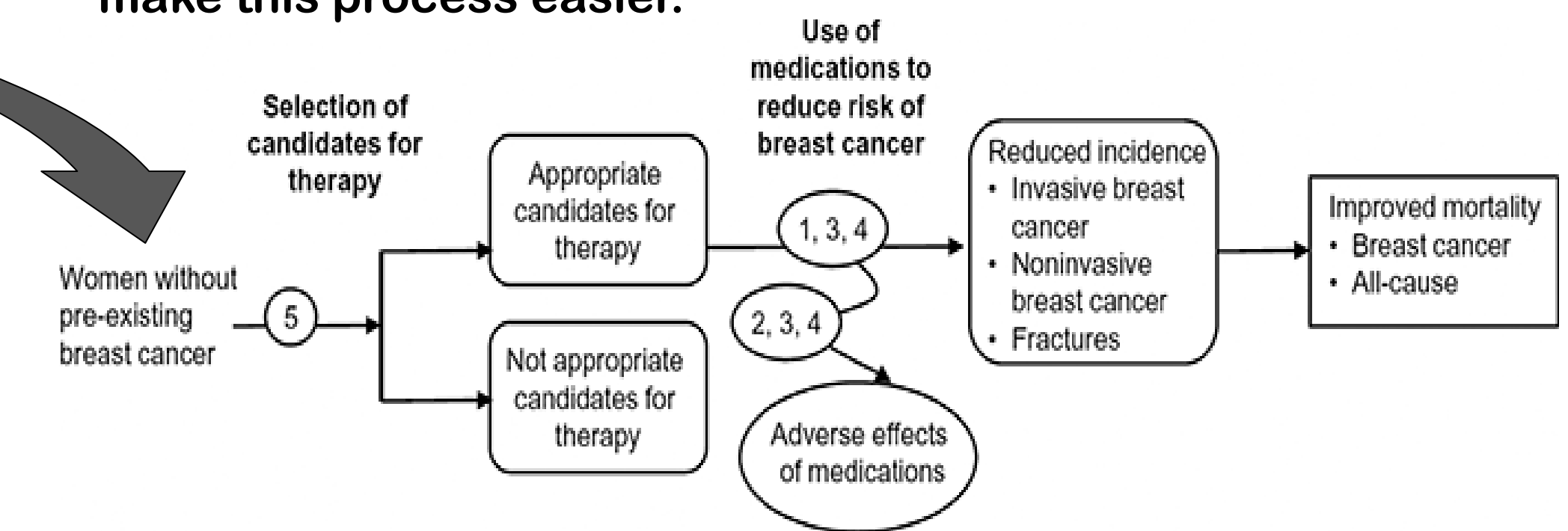☐ Combine those specific queries in ways to search literature related to specific key questions.

☐ Having the analytic framework makes it easier to construct specific searches for key questions as well as to be sure that all questions are thoroughly addressed.

☐ Develop the searches in tandem with explicit inclusion/exclusion criteria. Some elements of the analytic framework may be difficult to translate into search queries, but could be assessed by reading the abstract. Explicit criteria make this process easier.

Key Question 1. In adult women without pre-existing breast cancer, what is the comparative effectiveness of selective estrogen receptor modulators (SERMs) tamoxifen citrate and raloxifene, and the selective tissue estrogenic activity regulator (STEAR) tibolone, when used to reduce risk for primary breast cancer on improving short-term and long-term outcomes including invasive breast cancer, noninvasive breast cancer, including ductal carcinoma in situ (DCIS), breast cancer mortality, all-cause mortality, and osteoporotic fractures?
Key Question 2. What is the evidence for harms of tamoxifen citrate, raloxifene, and tibolone when used to reduce risk for primary breast cancer?
Key Question 3. How do outcomes for tamoxifen citrate, raloxifene, and tibolone when used for primary prevention of breast cancer vary by heterogeneity in subpopulations?
Key Question 4. What is the evidence that harms or secondary potential benefits listed above affect treatment choice, concordance, adherence, and persistence to treatment with tamoxifen citrate, raloxifene, and tibolone when used for primary prevention of breast cancer?
Key Question 5. What methods, such as clinical risk-assessment models, have been used to identify women who could benefit from medications to reduce risk of breast cancer?