Teaching Table for Comparing Several Common Kinds of Summary Articles:

Background: Efficient application of the medical literature requires that we make optimal use of articles in which the authors have *combined* information from multiple individual original studies. Systematic Review and Meta-analyses are increasingly available to pull together a comprehensive set of available original articles on a particular focused clinical question. Clinical Practice Guidelines also pull together multiple original sources, however the starting point is a clinical problem made up of many individual focused clinical questions. Clinical Practice Guidelines are frequently based upon the work of systematic reviews and meta-analyses.

Systematic Review, Meta-analysis and Clinical Practice Guidelines: The following table can be used in a teaching setting to help your learners understand the differences between these summary methodologies. One way to use the table is to begin with the headings on top and create the table interactively with the learners answering questions about the different types of studies.

	Unsystematic Review	**Systematic Review**	**Meta-analysis**	**Clinical Practice Guideline**
(also known as)	Narrative Review	Qualitative Review	Quantitative Review	
Evidence Summary?	Maybe (at the discretion of the author)	Yes	Yes	Yes
Is this review based on a focused clinical question?	No A narrative review is usually based on a clinical problem (e.g. Review of GI Bleeding)	Yes	Yes	No A family of questions related to a complex clinical problem (e.g. diabetes care)
Does this kind of review have a methods section?	No. Narrative reviews are written in the style suggested by the journal and the author without an explicit methodology.	Yes. Systematic Reviews have methods sections that include comment on the following core elements of article selection: How they found the evidence (<u>comprehensive</u> search strategy) How they determined the quality of the evidence (<u>validity</u> check)	Yes. Meta-analyses have methods sections that include everything in a Systematic Review (comprehensive search strategy and validity check) AS WELL AS a *Summary Statistic* (combining the data from individual studies based on precision including sample size and variability)	Yes. A Clinical Practice Guideline allows an integration of how to approach a clinical problem. Methods include a description of comprehensiveness, quality, validity and also the process for making recommendations when there is no evidence
Who's view point is represented	The authors (Expert Model / Authority)	Evidence Model: this is simply a systematic collection and 'grading' of scientific data	Evidence Model: based on a systematic review with a combining of data from individual studies into a summary statistic	Evidence Model and Expert Model combined: This includes both evidence and expert opinion when evidence is not available.

A Shorter Version of the Teaching Table for Systematic Review and Meta-analysis:

	Narrative Review	**Systematic Review**	**Meta-analysis**
Kind of question	Topic (e.g. GI bleed)	Focused Question	→ (same as SR)
Methods	None	Comprehensive Search Screen articles for validity	→ (same as SR)
Results	None	Summary of Evidence (can be qualitative)	Summary Stat
Who's perspective	Authority Model	Evidence Model	→ (same as SR)

Meta-analysis, Decision Analysis and Economic Analysis: Another set of summary methodologies includes decision and economic analysis. You can use a similar strategy for teaching about these kinds of papers. First, you point out that there are three different types of measures that researchers might make (outcomes, values and costs). Then you can elicit examples from

Outcomes	**Values**	**Costs**
Examples:	Examples of different viewpoints (i.e. who's values?)	Examples:
# admits	Patients	Drug costs
time to symptoms	Hospital / administrators	personnel
time to C/C	parents	admission $$
side effects	physicians	lost work /wages
mortality	insurance	lost school/ work
	society	equipment

How these come together in summary articles:

Meta-analysis / Overview: summary of the outcomes literature
Decision Analysis: takes all the outcomes and considers the weight of values (outcomes x values)
Economic Analysis: takes outcomes, values and costs
(at times, does not include values as below)

Types of cost studies:

Cost-benefit analysis: all outcomes are in monetary units and no value assigned
Cost-effectiveness: monetary cost compared with a clinical unit of efficacy
Cost-utility analysis: monetary costs compared with outcomes measured in terms of social value
(e.g. Cost per QALY)