

Table S1: Key Messages for Presenting Quantitative Information about Decision Outcomes

<p align="center">Communication Issues In Presenting Quantitative Information</p>	<p align="center">Key Messages</p>
<p>Presenting the Chance an Event Will Occur</p>	<ul style="list-style-type: none"> • Ideal formats depend on the task that the recipient faces. • Use simple frequency (e.g., x in 100) or simple percentage (e.g., x%) formats that explicitly specify the reference class over time. <ul style="list-style-type: none"> ○ Using both formats together does not appear to provide benefits. • When comparing two independent events, the simple percentage format appears to be better understood than the simple frequency format, possibly because fewer numbers are simpler to process. <ul style="list-style-type: none"> ○ Specifying the reference class over time is essential. ○ Format biases may exist with very small numbers and for the less numerate. These may be partly corrected by use of appropriate visual display formats (see Section 6). ○ Use consistent denominators with simple frequency formats (i.e., no “1-in-X” formats”).
<p>Presenting Changes in Numeric Outcomes</p>	<ul style="list-style-type: none"> • Use absolute risk presentations (either simple frequencies or percentages) rather than relative risk presentations (e.g. “30% lower risk”), as the latter tend to magnify risk perceptions and decrease understanding. <ul style="list-style-type: none"> ○ Maintain constant denominators across statistics. • Incremental risk formats (absolute risk increase or decrease) may be valuable if accompanied by visual displays.
<p>Outcome Estimates for Tests and Screening Decisions</p>	<ul style="list-style-type: none"> • Use of “natural frequencies” (frequency representations that use a common, fixed reference class of cases) can improve peoples’ understanding and estimates of joint occurrence risks (e.g., the probability of having breast cancer given an abnormal mammography result). <ul style="list-style-type: none"> ○ Representations of the calculated “post-test probability” may be communicated as percentages if that simplifies the user’s task.

<p>Numerical Estimates in Context and with Evaluative Labels</p>	<ul style="list-style-type: none"> • Contextual data (e.g., providing the risk of conditions other than the target condition) can help users get perspective on their risk of disease. <ul style="list-style-type: none"> ○ Providing such data should be considered when feasible. • Directly interpreting the meaning of risk data (e.g., by providing evaluative labels such as “poor”) has a substantial impact on people’s reactions. <ul style="list-style-type: none"> ○ Because the appropriateness of such reactions varies, evaluative labels should be applied carefully.
<p>Communicating Uncertainty</p>	<ul style="list-style-type: none"> • Care should be taken to distinguish between the randomness of future events and “ambiguity” (a lack of knowledge needed to predict the likelihood of future outcomes). • Many people exhibit “ambiguity aversion,” avoiding decision making and showing affective responses to situations described as having epistemic uncertainty. • Little consensus exists regarding how best to communicate these concepts.
<p>Visual Formats</p>	<ul style="list-style-type: none"> • Visual displays such as pictographs/icon arrays and bar charts can improve understanding, especially among the less numerate <ul style="list-style-type: none"> ○ People vary in their graph literacy, i.e., their ability to extract data and meaning from visual displays. • Visual displays convey essential or “gist” information more than precise information. <ul style="list-style-type: none"> ○ Bars and pictographs are perceived most accurately and easily, especially when they depict the part-whole relationship by showing the entire population.
<p>Tailoring Estimates to Individual Characteristics</p>	<ul style="list-style-type: none"> • Research is mixed regarding the effect of tailoring risk information.
<p>Formats for Understanding Outcomes Over Time</p>	<ul style="list-style-type: none"> • Efforts to estimate risk over time are often hampered by a lack of data. • Multiple approaches can show risk over time, including chance of a specific outcome at a single point in the future, mortality or survival graphs, and lifetime risk estimates. <ul style="list-style-type: none"> ○ Research is needed to assess the relative strengths and weaknesses of different approaches
<p>Narrative Methods for Conveying the Chance of</p>	<ul style="list-style-type: none"> • The proportion of favorable vs. unfavorable narratives can influence perceptions of

an Event	<p>risk and treatment choices.</p> <ul style="list-style-type: none"> ○ When used to present risk or benefit information, they should be accompanied by a visual display such as pictographs. ● Narratives should be used with caution until research better clarifies their effects (both positive and negative).
Important Skills for Understanding Numerical Estimates	<ul style="list-style-type: none"> ● Higher numeracy facilitates computations, interpretations of numbers, information seeking, depth of processing and, trust in numerical formats. <ul style="list-style-type: none"> ○ Lower numeracy is associated with overestimation of risk probabilities, higher susceptibility to other factors such as format, and denominator effect. ● Both objective and subjective measures of numeracy are now available.
Interactive, Web-based Formats	<ul style="list-style-type: none"> ● While interactive, web-based formats can use motion cues or game-like interfaces to potentially reinforce risk messages, they may degrade knowledge unless these elements reinforce the most critical gist message.