Communication for and with Individuals with Lower Numeracy

Protocol Alterations

* Less information is generally better, reducing the number of unnecessary or less necessary options and choices would be a good first step
* Relative Risk information/highlights
* Reduce cognitive effort needed
  + What is the ideal balance to strike between ‘realism’ and simulation, and a ‘functional’ model that improves human choice?
  + Is there a good/acceptable amount of ‘realism’ we can remove or abstract
* Visual display, without animation, with clear definition of possible values, leveraging color cues and simple, evaluative labels.
  + Again, the most ‘powerful’ cue is concrete placement of test results in a visual space of possible values.

Communication Priorities

* The less numerate rely on concrete stories, images, and emotions to make decisions
  + Numbers are often neglected in favor of using superficial heuristics, thus, qualitative research on what heuristics people use to assess their own BP would be extremely valuable as a ‘jumping off’ point for how to structure the intervention.
* Increase ‘perception of trust’ from source of communication
  + Even for those lower in numeracy, greater trust in how the message was derived/generated and trust in where information that changes behavior originated from can be important to provide.
  + E.g. “Getting a climate related message from other sources, such as military leaders, may be more persuasive”
    - So… for example, these are the BP #’s of healthy young men from army bootcamp, here are the BP #’s of pro athletes, etc.
* Provide numbers in context
  + Information of base rate of occurrence of various categories of harm related to hyper/hypo-tension, and how it is affected by the individual’s health.
    - Absolute risk can also be provided in relation to common benchmarks, like car accidents, lightning strikes, etc. in order to provide calibration for relative danger and concern.
    - This could also leverage… humor? Translating ‘known’ risks into memorable and specific examples could improve attentiveness.
    - Risk should be communicated with frequency instead of percentage formats.
    - E.g. “Where once two people would’ve died from blood pressure, instead three people died”
  + Lower numeracy individuals are much poorer in general at identifying out-of-range test results.
  + Helping people avoid being surprised by an unexpected event, and avoiding the attendant regret and anger that could follow.
    - Also, this can help correct people who have ‘wrong facts’ regarding their known information on what #’s are good or bad for BP.
  + Determine what aspects or attributes are difficult to evaluate
    - E.g. is the Variance itself difficult to evaluate, insofar as patients don’t intuitively know what high or low variance translates to with regards to health risk.
    - How about the meaning of systolic and diastolic in absolute relationship to each other?
* “Do the math for them”
  + Could provide the thing people are concerned about, an abstract ‘cumulative risk’ meter that fills or lowers depending on the trajectory and absolute value/volume of a persons BP measurements.
  + A simple icon array (color coded or not) could be very appropriate.
  + Alternatively, a ‘single dollar’ actuarial amount that represents relative health risk in ‘estimated monetary cost’ could be VERY useful for providing contextual evaluable information that is easy to comprehend.
* “Use plain language”
  + Ideally communicate at an 8th grade level
  + Writing things out as simply as possible, reducing or eliminating clinical/statistical jargon, using well structured, logically sequenced, and short-focused information
  + Use white space and subheadings to manage ‘bandwidth’ of information ingested.
* Order information such that the most IMPORTANT item is FIRST or LAST
  + What is considered the most important information?
  + ‘Call to Action’, especially if imminent harm is present, but also ‘all safe’ would be useful to know, or ‘showing improvement’ or ‘showing regression’

Provider Goals:

* Providers need to provide evaluative meaning, offer fewer options (perhaps the most valuable or important ones only)
* Appropriate pictographs or icon arrays would be helpful to communicate with patients
* Ensure and Identify what the goals of the communication is
  + Perhaps some ‘simple scripts’ based on likely combinations of BP concern? (BP controlled becoming uncontrolled, BP uncontrolled becoming controlled, BP staying uncontrolled/controlled)
  + These scripts could vary in focus when considering patients with higher or lower self reported numeracy, which is ‘tailoring’ communication to their needs (e.g. more story centric for lower numeracy, more numbers focused for higher numeracy)
* Assessment of perception of provider communication (with numeracy of patient and provider individual differences as covariates) would add a great deal of value.
  + Furthermore, does perception of good communication actually tend to fall in line and predict better health outcomes?

Outside Assistance

* “We can make the hurdle shorter-“
  + Providing this information in a different ‘context’ perhaps an e-mail or other informative notification, in an affectively ‘cold’ vs affectively ‘hot’ context.
* “-or the Runner stronger”
  + Making the runner stronger can include perhaps a simple training, exercise, or showing an ‘exemplar’ of various scenarios including communication of the results with the tool?
  + Providing ‘training’ on magnitude and relative understanding directly addresses the natural number bias underlying some of the ‘negative’ consequences of lower numeracy.

SUMMARIES TO USE:

* Provide general information on increase in mortality as BP changes over time.
* “Do the graph for them” – Linguistic summaries didn’t work particularly well.
  + Visual elements attached to the linguistic summaries.’
  + Stoplight-grid/gradient similar to Brian Zikmund Fischers graphic work.
* “Provide the #’s in Context” – requires the math needed to do it, for someone either ‘in-range’ or someone ‘out-of-range’.
  + What are the #’s, can we calculate this easily using an algorithm?
  + Can do it in form of mortality risk, OR risk of heart attack/stroke
* How ‘stripped down’ can we get this?
  + What can we remove, to test and see how well it can work?
* Omnigraffle – find a comparable graphic engine/setup
  + Wait to hear back from Brian?