

## The PBI Shuffle

**The Prevention Benefit Index (PBI)** looks at the *real world cost* of delivering each intervention, *the rate of HIV in each population*, and the *likelihood that the EBI will change behaviors* that help prevent HIV. This formula gives the PBI which is expressed as a dollar amount. The PBI is then compared to the average lifetime cost of treating someone with HIV. If the cost of the prevention intervention is less than the cost of treatment intervention, then that EBI made the prioritization list.

$$\text{PBI} = \frac{\text{Cost per client served} \times 100,000}{\text{HIV incidence} \times (1 - \text{effect size})}$$

### If we think about this as a dance – we can break it down into a few steps:

**Step 1:** CDC calculated the **cost per client served** for all EBIs (for example, the cost per client served for Sister to Sister is \$62, VOICES/VOCES is \$198 and PROMISE is \$288).

**Step 2:** CDC obtained **HIV incidence rates** for each population of interest (for example MSM =655 per 100,000, high risk youth= 24 per 100,000, and IDUs and their sex partners= 515 per 100,000).

**Step 3:** CDC identified the **effect size** statistic from the original research on each EBI which gives the strength of the intervention for people to change their HIV risk behavior (for example the effect size for Sister to Sister =0.43, VOICES/VOCES=0.78, and PROMISE=0.54).

**Step 4:** Put it all together and compare to average lifetime cost of treating HIV (\$402,000). Here are 3 examples:



PROMSIE with MSM	PBI =	$\frac{\$288 \times 100,000}{655 \times (1-0.54)}$	= \$11,951	Less than \$402,000 = <b>prioritize</b>
VOICES/VOCES with MSM	PBI =	$\frac{\$198 \times 100,000}{655 \times (1-0.78)}$	= \$137,543	Less than \$402,000 = <b>prioritize</b>
VOICES/VOCES with Hispanic men and women	PBI =	$\frac{\$198 \times 100,000}{\geq 28 \times (1-0.78)}$	= \$3,276,033	Greater than \$402,000 = <b>do not prioritize</b>

**If you are interested in thinking through this process with other groups or interventions, Tabono CBA is here to help!**