

Instructions for the Naloxone Distribution Calculator

Our Naloxone Distribution Calculator is designed to help evaluate the cost-effectiveness of distributing injectable naloxone kits over a ten-year period compared to not distributing extra kits.

Cost-effectiveness analysis measures how well a treatment or intervention works by comparing the costs and health outcomes of a treated group and a regular group. In this case, we use dollars to measure costs and Quality-Adjusted Life Years (QALYs) to measure health outcomes. One QALY represents one year of life in perfect health, while zero QALYs represent death. For this calculator, a heroin user has a baseline of 0.8 QALYs, which decreases if they experience an overdose.

Naloxone distribution can improve the QALYs of overdose patients by increasing their chances of being transported to a hospital's emergency department, thereby reducing the overdose death rate.

The Naloxone distribution improves the QALY of overdosed patients through the channel where patients with Naloxone available have a higher chance of being transported to a hospital's emergency department-meaning reduced overdose death rate.

The calculator takes **four inputs**:

1. Overdose Rate with Heroin Use (0.02 to 0.12): The local average annual overdose rate among heroin users.
2. Naloxone Distribution Rate (0 to 0.8): The rate of naloxone distribution among people who do not already have a prescription, with a default prescription rate of 0.2.
3. Heroin User Group Size (above 0): The total number of heroin users within the community.
4. Protocol to Send to Hospital (1-Yes or 0-No): Indicates whether there is a protocol in place to ensure overdose patients receive necessary hospital care.

Based on these inputs, the calculator provides **five outputs**:

1. Total QALYs Improved: The total health improvement resulting from naloxone distribution.
2. Total Extra Costs (Hospital/EMS+Injectable Narcan): The additional costs incurred from increased naloxone distribution and subsequent hospital care.
3. Average Cost to Save 1 QALY: The cost per QALY improved.
4. Is it Cost-Effective with a \$50,000 threshold: Indicates whether the intervention is cost-effective based on a common benchmark of \$50,000 per QALY. If the average cost to save 1 QALY is less than \$50,000, this will return "Yes."
5. Total Injectable Narcan Spending: The total expenditure on injectable naloxone.

This tool helps communities and policymakers understand the potential health benefits and financial costs of expanding naloxone distribution to combat opioid overdoses.