# A conversation with Robert Heimer, November 16, 2015

## Participants

- Robert Heimer – Professor of Epidemiology and of Pharmacology, Yale University School of Medicine
- Helen Toner – Research Analyst, Open Philanthropy Project

**Note**: These notes were compiled by the Open Philanthropy Project and give an overview of the major points made by Professor Heimer.

## Summary

The Open Philanthropy Project spoke with Professor Robert Heimer as part of an investigation into biomedical research on drug use harm reduction. Conversation topics included the potential risks and value of biomedical approaches to harm reduction, as well as Professor Heimer's impressions of other stakeholder views on these approaches.

## Potential risks of biomedical approaches to harm reduction

Given his past training in molecular biology, Professor Heimer is generally predisposed to support technological methods. However, he believes biomedical harm reduction approaches should be approached with a combination of caution and careful optimism. He is particularly concerned with programs that attempt to treat problems that lie at the intersection of behavior and medicine as merely medical problems. Professor Heimer believes that this tendency towards a reductionism fails to account for the full complexity of biological and behavioral factors, and leads to an oversimplification of complex problems. In his field work, he has observed some of the unintended consequences of these approaches.

### Syringe programs

Programs providing clean syringes for use outside of medical facilities offer syringes that are single-use, non-reusable, and tamper-proof, which makes them quite expensive. As a result, programs with fixed resources might end up reducing the number of syringes they provide, forcing those who inject frequently to use unclean syringes.

There have been several examples of clean syringe shortages leading to a spike in HIV prevalence rates. For example, in an effort to curb drug abuse in Edinburgh, pharmacies stopped providing syringes to drug users. This caused the HIV rate in certain areas to increase from approximately 0% to 45% in a 15-month period. Another instance occurred in the downtown east side of Vancouver, when a large number of drug users simultaneously shifted from using heroine to cocaine. Cocaine is injected more frequently due to its shorter half-life, so the shift led to increased demand for syringes and a subsequent shortage. During this period, HIV prevalence rates increased from a very low figure to approximately 20%.

### Medication-assisted treatment for opioid addiction

*Need for additional support services*

Programs that provide methadone or other medications to treat opioid addiction can work well, especially for individuals who depend on them to function in their daily lives (for example, to maintain employment). However, for many participants, medication alone might not be sufficient to treat their addiction. They might also need additional support services to help them make a comprehensive lifestyle change. Whereas drug users with minimal resources might spend most of their day obtaining the necessary resources to get drugs, treatment program participants can receive their oral medication in a matter of minutes. Without job training and other assistance, participants might be unable to obtain and maintain a traditional job, and risk getting into trouble in their spare time. Unfortunately, these programs are often administered in clinics that are separate from beneficial health and social services. Although Professor Heimer deems medication-assisted treatment to be an important first step, he also believes that their benefits are attenuated if participants do not have access to these complementary services.

*Antagonist medication-assisted treatment*

The medications used in these programs can be antagonist, which block the action of opioids, or agonist, such as methadone. Antagonist medications are only effective for a small percentage of people. To improve their effectiveness, long-acting formulations of these medications are now available. At first glance, this appears to be a beneficial option. However, whereas agonist medications can help long-time drug users regain a "normal" feeling, antagonist medications deny them that feeling and might make them feel ill. They might decide to discontinue treatment and revert to using the active drug. There are concerns that these individuals might take doses they can no longer tolerate and overdose. Antagonist treatment programs have a failure rate of approximately 50-60%, which is fairly high.

## Potential value of biomedical approaches to harm reduction

Despite their risks, Professor Heimer believes that carefully designed biomedical approaches to harm reduction can be effective. For example, tenofovir is a pre-exposure prophylaxis that has proven effective in preventing HIV in high-risk, high-incidence groups, such as young gay men. Tenofovir is an expensive medication that must be taken every day or every other day; this might reduce its effectiveness in lower incidence populations.

Professor Heimer believes that successful programs must be accessible, affordable, and acceptable to both participants and providers. Program delivery methods should be carefully studied to identify the most effective ones. Evaluation and optimization of available, effective solutions should be prioritized over searching for new methods.

## Impressions of other stakeholder views on biomedical approaches to harm reduction

Behavioral scientists with experience in the field of HIV prevention tend to prefer programs that marry well-designed behavioral interventions with biotechnological methods. They stress the importance of considering behavioral context; for example, HIV prevention program design must account for the behavioral context of HIV transmission.

Professor Heimer has observed that some agency funders, such as the National Institute on Drug Abuse (NIDA) and the National Institute of Allergy and Infectious Disease (NIAID), tend to pay inadequate attention to behavioral context. He has also observed that funding agencies, in particular the National Institutes of Health's Office of AIDS Research, appear to be increasingly focusing on biomedical, quick-fix approaches.

*All Open Philanthropy Project conversations are available at*
*http://www.givewell.org/conversations*