Post-Conference Report Provides HIV Cure Roadmap

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Now that a cure has been proved to be possible, the challenge has moved from encouraging researchers to take up cure-oriented studies to figuring out how to design and conduct those studies, according to a report summarizing an April 2011 meeting sponsored by the AIDS Policy Project, Project Inform, the Treatment Action Group and amfAR, The Foundation for AIDS Research.

According to the extensive review, prepared by HIV science writer Liz Highleyman, given that such trials are likely to confer risks to people living with HIV who participate in them, researchers, regulators, and activists must come together to ensure not only that participants are kept safe, but also that research can move forward quickly and confidently, even if the first trials do not produce positive results.

In the past three years, the report's executive summary points out, increasing scientific momentum has been evident in research aimed at curing HIV infection. The remarkable case of "Berlin Patient" Timothy Brown—an American diagnosed with leukemia who appears to have been cured of HIV infection—"has contributed to reinvigorating the scientific community to investigate the possibility of discovering and developing a safe, effective, feasible and scalable HIV cure."

There have been a number of signs of scientific progress over the past three years, the report suggests. "Researchers have contributed new insights into where and why HIV persists in the body even when powerful antiretroviral therapy has all but shut it down. Ultrasensitive tests can detect the virus at the level of a single copy of RNA. The first controlled trials of a class of drugs called histone deacetylase (HDAC) inhibitors that may roust HIV from its hiding places are underway, and other types of treatments designed to teach the immune system to either clear or control the virus on its own have been initiated."

Also encouraging, the National Institutes of Health (NIH) is now funding cure-related research specifically through three consortia funded by grants named after longtime AIDS activist Martin Delaney.

Some critical scientific questions remain unanswered, the report notes. For example, if HIV eradication is the goal, how can this be proved when the best currently available tests may still miss the tiny residual amount of the virus that can bring the infection roaring back to life when antiretroviral (ARV) drugs are withdrawn? Additionally, one of the only ways to know if a curative

modality is working is to stop ARV therapy and see what happens to the viral load. However, if researchers dub treatment interruptions necessary, how can they be conducted safely in study participants when prevailing data suggest that even relatively short treatment interruptions can be harmful for some?

Even if the virus cannot be eradicated, but it can be functionally cured by teaching the immune system to maintain strict control of viral replication, another question remains: What kinds of changes in the immune system and inflammatory markers will tell us we are on the right track?

Last but not least, if early trials require participants to take greater risks with little hope of gain, how can researchers and advocates ensure that studies are ethical and guarantee that those taking the risks are fully informed?

The report reviews the discussions at the HIV Cure-Related Clinical Research Workshop, held April 20 and 21 in Baltimore, and involving more than 50 leading public- and private-sector HIV researchers, AIDS treatment advocates and U.S. government officials. The report lays out the latest thinking on these core questions, the key obstacles ahead, and a series of next steps proposed by conference attendees to address those challenges.

“The work ahead will require new resources and new levels of cooperation and collaboration—among scientists, and among researchers, government agencies, activists, and people with HIV,” the report’s executive summary concludes. “Workshop cosponsors and participants have all committed to transforming the ideas generated at the conference from words on paper into concrete actions.”

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