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## Fighting Epidemics With Venture Capital: Commentary



Commentary by Stephen Brozak and Emad Samad | September 26, 2011 04:13PM ET



(Bloomberg) -- Imagine that an infectious disease of uncertain cause strikes a few residents of a small town after a woman returns from a trip overseas. Within days the disease has spread to major cities; within weeks it is diffused

throughout the U.S. Doctors and scientists struggle in vain to find a cure. Panic sets in as the epidemic spreads and the social order frays.

Some may recognize this scenario as the plot of the summer blockbuster "Contagion." To people who make their living by studying transmissible diseases or by financing the scientific discovery of vaccines and medical therapeutics, the plot is a chilling example of art predicting real life.

Even more alarming: This scenario can occur with less exotic pathogens whose origins are better understood, and for which either effective treatments don't currently exist or potential treatments have yet to be commercialized and mass produced. It's not for lack of science; it's the lack of funding.

The problem is that the commercial development of each newly approved drug is a 10- to 15-year process requiring an investment of \$800 million to \$1.3 billion per drug. Only those pharmaceutical agents with well-defined markets and predictable annual sales are likely to be produced. This limits the development of products such as novel vaccines and antibiotics for bio-defense, since the expected profits may not justify the long-term investment required.

As analysts who have followed the biodefense sector since 2000, we believe what's needed is a strategic venture fund for biodefense and drug development, one that would function as an independent, nonprofit organization modeled closely on the CIA's In-Q-Tel fund and its 12-year record of success.



The U.S. needs to continue developing and investing in Project BioShield. In the current economic climate, what's also needed is a novel approach to funding and commercializing research and development. This approach must minimize direct government outlays, leverage private investment and be self-sustaining.



-- Stephen Brozak and Emad Samad

### Overlooked Technologies

In-Q-Tel identifies and invests in technologies of interest to the CIA that have been overlooked and undeveloped by companies pursuing wider consumer markets. Today, In-Q-Tel has a network of 150 collaborating funds working on its venture prospects. In-Q-Tel has funded more than 100 programs that have yielded gains in communications technologies such as visual search engines, language translation programs and encryption software.

The U.S. government has undertaken several measures to improve its preparedness for the type of epidemic portrayed in "Contagion." The Project BioShield Act of 2004 was enacted by Congress with a \$5.5 billion advance appropriation, primarily to create a market for chemical, biological, radiological and nuclear responses in the hopes to later acquire successful products for the Strategic National Stockpile (SNS).

Subsequent Congresses have since undermined that effort through rescissions and transfers to other programs.

The U.S. needs to continue developing and investing in Project BioShield. In the current economic climate, what's also needed is a novel approach to funding and commercializing research and development. This approach must minimize direct government outlays, leverage private investment and be self-sustaining.

### Investment Fund

We published a recent white paper proposing the creation of an In-Q-Tel-like [drug development investment fund](#), or DDIF, to act as a co-investor to attract other venture funds to take part in financings.

The mandate of this fund would be to identify and underwrite early stage research and development of first-in-class antibiotics, novel vaccines and therapeutics that could be utilized as a medical countermeasure against a biothreat and could have significant commercial applications.

For example, the fund might identify a biotech that's developing a new class of antibiotic. In the systems that exist today, the U.S. might decide to award the company a major research grant or contract in the amount of \$25 million to \$50 million spread over several years. A vehicle like the DDIF could make smaller investments of \$5 million to \$10 million in exchange for equity in the company, and attract two to three other venture funds to take part, contributing an equal amount of money to the opportunity.

Once the antibiotic has proven successful in trials, it can be stockpiled as a medical countermeasure against biothreats as well as used to treat very sick patients who have community-acquired infection, a significant public health issue on the rise.

As technologies and investments mature, the DDIF may decide to exit its position, turning its \$5 million to \$10 million initial investment into a return worth five to 10 times that amount -- or \$25 million to \$100 million -- thereby creating a perpetual cycle of funding to inject into other companies.

### About the Author



Photo: WBB Securities

Emad Samad works for WBB Securities LLC, an investment bank that specializes in the research analysis of the biodefense, specialty pharmaceutical and medical device sectors.

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- [Ten Years After Sept. 11, Project Bioshield Has Yet To Deliver on Its Promise \(pdf\)](#)
- [Biotechnology Companies Starved for Capital Get \\$1 Billion U.S. Subsidy \(pdf\)](#)

### BGOV Stories:

- [Glaxo Joins Biodefense Program Shunned by Top Drugmakers](#)
- [FDA Seeks Path for New Smallpox Vaccines With Animal Tests](#)
- [Anthrax Fighters Seek U.S.-Backed Bonds for Drug Stockpile](#)

Project BioShield funding is set to expire in 2013, and while there are proposals in Congress to reauthorize another \$2.8 billion for years 2014-2018, the climate of austerity in Washington threatens every program in the national budget.

The recent East Coast earthquake and the swine flu outbreak of 2009 are reminders that we are still susceptible to natural threats. Manmade threats are also a reality in the post Sept. 11 world, as evidenced by the anthrax attacks of 2001

and more recently by the attempted car bombing of Times Square in 2010, which could have resulted in a thousand or more wounded by trauma and thermal burns.

To be prepared for the worst, we need to engage industry in new ways to advance science of national importance, revitalize biopharmaceutical investment, and create valuable jobs. Renewing funding for programs such as Project Bioshield is a good start, but we must continue to develop innovative programs capable of meeting the litany of biothreat challenges facing the nation to ensure that the plot of "Contagion" remains a work of fiction.

(Stephen Brozak and Emad Samad work for WBB Securities LLC, a San Diego-based investment bank that specializes in the research analysis of the biodefense, specialty pharmaceutical and medical device sectors. The views expressed are their own.)

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