

## Logical Images helping to thwart bioterrorism

BY SMRITI JACOB

Logical Images Inc. expects its clinical diagnostic expertise to play a key role in the nation's attempt to thwart potential bioterrorism attacks.

The firm is in the final stages of two programs related to smallpox vaccinations and reactions. It has signed contracts with the Centers for Disease Control and Prevention and the Department of Health and Human Services to educate the country's health care workers. The contracts together are worth roughly \$500,000.

"We are problem solvers. And we have the right kind of expertise to be able to deliver solutions," said Nancy Weyl, President of Logical Images.

The Rochester-based start-up employs some 10 full-time staffers. More than 10 consultants assist with a variety of projects.

Logical Images is working with the CDC through a grant received by Monroe County to develop a vaccination web site for the CDC. The contract is valued at \$393,000. Logical Images in June was selected for the task.

"The challenge is to recognize what you've never seen before. We combine medical information and images to help physicians make informed decisions," said Arthur Papier, chief scientific officer at Logical Images.

Logical Images also has created a pocket guide for physicians on administering and identifying normal and adverse reactions to smallpox vaccinations, in collaboration with the Department of Health and Human Services.

"The good news is that we haven't had to vaccinate people since 1972," Weyl said. "The bad news is that there is a whole generation of physicians that have grown up not knowing what to look for."

Only two sources of smallpox virus are known to exist—the CDC's repository in Atlanta and the Vector laboratory outside Novosibirsk, Russia. U.S. officials suspect a former Vector scientist is now in Iraq, a nation that reportedly harbors weapons of mass destruction.

Though the threat of smallpox is low, government officials are taking precaution-

ary steps in case the need to inoculate people arises.

Smallpox, or the variola virus, comes in two forms: *variola minor* and the more deadly *variola major*. The dose required for infection is small, making it a candidate for aerosol release. It can be further spread by the saliva droplets of infected people. Disease symptoms include fever, fatigue and aches, followed by a rash with lesions. The disease was eradicated in 1980.

Smallpox can be prevented through vaccination. But because the vaccine contains a live virus, it occasionally can be transmitted to persons on close contact. Once injected, the smallpox vaccine virus multiplies in the superficial layers of the skin to produce antibodies that are effective in fighting the disease.

Individuals who receive the vaccine experience mild fever and localized redness and swelling at the vaccination site. Eventually, a large blister forms and turns into a scab, later developing into a harmless scar.

"A localized skin reaction is normal after receiving a smallpox vaccination," Papier said. "But because small-pox vaccine is made from a live virus, there is a small but real risk of life-threatening reactions."

Immuno-compromised individuals such as AIDS, cancer and transplant patients are among those at risk.

Logical Images is attempting to provide doctors with information and images that explain the difference between an adverse reaction and an expected response after a smallpox vaccination.

"Pictures are worth a thousand words," Papier said. "If physicians mistakenly think it's a bacterial infection, it could result in a life-threatening reaction."

The CDC smallpox vaccination Web site will act as a tool and resource to educate both health care workers nationwide and the general population. The site is expected to host medical information on the vaccine and its re-actions, images, clinical management descriptions and references to medical literature. The CDC is slated to make the announcement soon.

U.S. officials are in discussions on methods to best prioritize the recipients of

the smallpox vaccine. "There is raging debate in Washington on how people should be offered this vac-cine," Papier said, "whether it should be only health care workers first or the entire public."

The pocket guide Logical Images has created for U.S. physicians and health care workers contains diagnostic images describing key features for quick reference, clinical management guidelines and tips to differentiate re-actions of vaccinations.

Some 250,000 copies of the printed booklet will be distributed to hospitals, clinics and doctors' offices nationwide.

The smallpox resources are one part of Logical Images' efforts to counter bioterrorism. The firm early this year worked on developing a set of images to help doctors make a timely diagnosis of the cutaneous, or skin, form of the anthrax infection.

Logical Images in early 2001 also introduced diagnostic and training tools for infectious disease and potential Bioterrorism threats with its VisualDx product that integrates text, images and educational software.

The company's products can be used at international checkpoints at airports and other locations, Papier said.

"They now have screening for health conditions," he added. "It is driven by an increased concern of bioterrorism."

Logical Images is pursuing future contracts with the Army to assist with digitizing image content. On the international front, the firm has been approached by European nations, Canada and China.

"We have had a significant amount of interest from national and international groups," Weyl said.

Logical Images this year hopes to meet its \$2 million funding target to support its growth. The company expects to add five staffers by the end of 2003.

"We are still trying to fulfill our goal," Weyl said. "We are at this point speaking to individual investors."