NACCHO Model Practice Series

Program Name: Videophone Monitoring of SARS Patients in Voluntary Home Isolation

Organization: Nassau County Department of Health, NY

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Overview:

Nassau County Department of Health (County) has developed and pilot-tested a program for videophone monitoring of Severe Acute Respiratory Syndrome (SARS) patients and contacts in voluntary home isolation and quarantine. The program is targeted towards SARS patients and contacts that are not ill enough to be hospitalized and known SARS patients who are being released from the hospital. The goal of this program is to protect the public from the spread of SARS by using the least restrictive means possible. Program objectives are1) to provide a mechanism for effectively monitoring patients on voluntary home isolation and quarantine, 2) to enable visual verification of patient compliance and condition, and 3) to maximize limited resources by being cost-effective and time-efficient.

Responsiveness and Innovation:

Centers for Disease Control and Prevention (CDC) and New York State Department of Health (State) Public Health Preparedness and Response Guidance Documents for SARS include measures to 1) reduce the risk of exposure to SARS by separating and restricting the movement of persons suspected of having SARS and 2) reduce the risk of transmission of SARS-CoV by restricting the movement of contacts who may have been exposed to infectious SARS patients but are not yet ill. Voluntary home isolation and quarantine of SARS patients and contacts is a primary mechanism by which to achieve these goals.

The 2003 experience managing seven suspected SARS cases and their close contacts demonstrated that ensuring effective home isolation was labor intensive and often required multiple onsite visits to confirm compliance. To make best use of limited resources, the County developed a program for videophone monitoring of SARS patients and contacts in voluntary home isolation and quarantine. The use of a videophone program is an efficient and effective mechanism for visually monitoring compliance with home isolation and quarantine while protecting the public's health.

The standard approach to managing SARS patients and contacts under voluntary home isolation consists of two daily telephone calls to the home during which the patient is asked about progression or resolution of symptoms including quantitative assessment for fever. The 2003 experience demonstrated two major limitations to this approach. First, given the use of cellular phones, there was no way to guarantee that a patient was at home during the discussion. Second, quantitative assessment for fever relied on patient self-reporting. The use of a videophone system overcomes these limitations because 1) the videophone must be connected to a land line and therefore is not portable, and 2) the videophone enables staff to visually assess the patient's condition during each call.

Agency and Community Roles:

Local hospitals, community physicians, and the State participate in the videophone program. In New York, local health departments are legally responsible for protecting the public from the spread of communicable diseases. This is accomplished by

- Exercising proper and vigilant medical inspection.
- Controlling all persons and things infected or exposed to communicable diseases.
- Isolating and quarantining cases of communicable disease, when that is necessary for protection of the public's health.

Local hospitals and community physicians are responsible for reporting suspect cases, instituting infection control procedures, and providing ongoing medical management cases. They collaborate with the County when they support and recommend that their patients participate in the voluntary home videophone program. The State provides additional expertise on surveillance and control issues and acts as a liaison between the County and the CDC. The State supports the program by providing funding to buy and maintain the equipment.

Costs and Expenditures:

Videophones can be purchased for between $200 and $500 depending on the model and desired screen resolution. There are no per call costs beyond those incurred during a standard telephone call. The initial home visit will require approximately half a day of the responsible staff person's time. Each video call requires 15 minutes of staff time. Staff members who participate in the program also require periodic training in the proper use of appropriate personal protective equipment and in the installation and use of the videophone. Funding for the videophones may possibly be covered under the U.S. Government's Public Health Preparedness and Response to Bioterrorism grant.

The videophones are currently used by the Bureau of Tuberculosis Control to perform Directly Observed Therapy (DOT) on patients with active disease and latent tuberculosis infection. Use of videophones in that program has yielded significant savings by decreasing staff travel time, thereby increasing the number of cases each person can safely monitor. During any outbreak of SARS, the Department would be able to shift videophone resources assigned to tuberculosis control to assist in management of the outbreak. Videophones may have a similar role in event of a smallpox attack.

Implementation:

Upon receipt of a report of a suspect SARS case, County staff consults with the hospital or physician to determine if the patient meets case criteria. If the definition is met and the patient is not ill enough to be hospitalized (or if a known SARS patient is being discharged from the hospital), County staff arrange for voluntary home isolation, quarantine, and videophone monitoring. Within 24 hours, County staff conduct a home visit to provide education, obtain consent to participate in the program, and implement a signed agreement with the patient to remain in voluntary home isolation. Staff installs the videophone equipment, provide training on its use, and place a test call to County offices. The videophone monitoring process lasts from three to ten days (or longer) depending on the resolution or progression of symptoms.

The program was pilot tested in December 2003 when the County received a report of a patient with upper respiratory symptoms who had recently traveled from Guangdong Province, China. In consultation with the State and the CDC, a three-day observation period under home isolation was recommended. The videophone was installed within four hours of the patient's discharge from the emergency department, and two daily calls were made to the patient's home at varying times. There were no technological difficulties in installing or using the equipment. The patient remained afebrile for three days and respiratory symptoms improved. After consultation with the State Department of Health, the patient was released from supervision. The County retrieved the equipment from the patient's home and disinfected the videophone in accordance with CDC guidelines.

Sustainability:

Local physicians and hospitals have demonstrated a high degree of commitment to the videophone initiative since it uses least restrictive means available to protect the public health, thereby increasing

patient compliance and satisfaction. To ensure continued commitment, the County staff provides presentations at local professional society meetings and offer demonstrations of the equipment during public forums.

Lessons Learned:

Local physicians and hospitals have demonstrated a high degree of commitment to the videophone initiative since it uses least restrictive means available to protect the public health, thereby increasing patient compliance and satisfaction. To ensure continued commitment, the County staff provides presentations at local professional society meetings and offer demonstrations of the equipment during public forums.

- The program is most successful when the patient receives encouragement from his/her physician to participate.
- Obtaining written consent to participate in the program and an agreement to remain in isolation may be valuable should the need to pursue non-voluntary isolation and quarantine arise.
- The comprehensive nature of the program, including the use of written policies and procedures, effectively demonstrates to the patient the serious nature of the illness and importance of compliance.
- The face-to-face contact that occurs during the home visit reinforces the education the patient received from his/her physician and enables the patient to ask practical questions on the restriction while at home. Clarifying these practical issues helps to achieve effective isolation by avoiding unconscious lapses in infection control procedures.

The videophone program is a promising, cost-effective and time-efficient means of protecting the public health during an outbreak.

Key Elements for Replication:

Key elements needed to replicate the program include 1) videophone equipment, 2) written protocols and procedures, including consent to participate in the program and agreement to remain in isolation, and 3) support from and collaboration with local hospitals and community physicians.