Strategies for improving influenza immunization rates among hard-to-reach populations

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The New York Academy of Medicine

Outline

- Background
- Project VIVA overview and study design
- Optimizing strategies to vaccinate hard-to-reach (HTR) populations meeting
- Results
- Conclusions

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Influenza and vaccination

- Every year, 10-20% of the American population falls ill with influenza, and an estimated 36,000 persons die from influenza-related complications *(Thompson WW, JAMA, 2003;289:179-186)*
- Vaccination is known to reduce morbidity and mortality from secondary respiratory infections *(Fedson DS, Am J Med, 1987;82:42-27)*
- Minorities tend to have lower vaccination rates than non-minorities, a disparity that exists for all age groups, including elderly covered by medicare and those who are targeted by public health interventions *(Ostbye T, BioMed Central Public Health, 2003;3:41-51)*
- Other hard-to-reach groups (homebound elderly, injection drug users, sex workers, undocumented immigrants) may be even less likely to receive regular flu vaccination despite high risk of morbidity and mortality secondary to influenza

Distribution of influenza vaccine to high-risk groups

- Variety of settings/approaches used to increase vaccination rates among high-risk groups
  - Hospital/tertiary care, Primary-care, Venue-based targeted delivery, Large-scale regional programs, Community-based distribution programs
- Most interventions focused on the elderly, fewer on adults with high-risk conditions and fewer still on children
- Vaccination was largely examined within the context of primary care settings or large-scale regional programs
- Major limitation: unable to reach those not engaged in the health care system, specifically HTR populations
- Few interventions included active community engagement or were targeted to specific communities

(Ompad DC, Galea S, Vlahov D. Distribution of influenza vaccine to high-risk groups. *Epidemiol Rev.* May 17 2006)

Pandemic preparedness

- An influenza pandemic would cause particularly acute problems in HTR populations
- Even if sufficient vaccine against the pandemic strain could be made, gaining timely access to and rapid immunizations of HTR populations would pose significant challenges
- Programs that can rapidly vaccinate a broad ranges of persons are urgently needed

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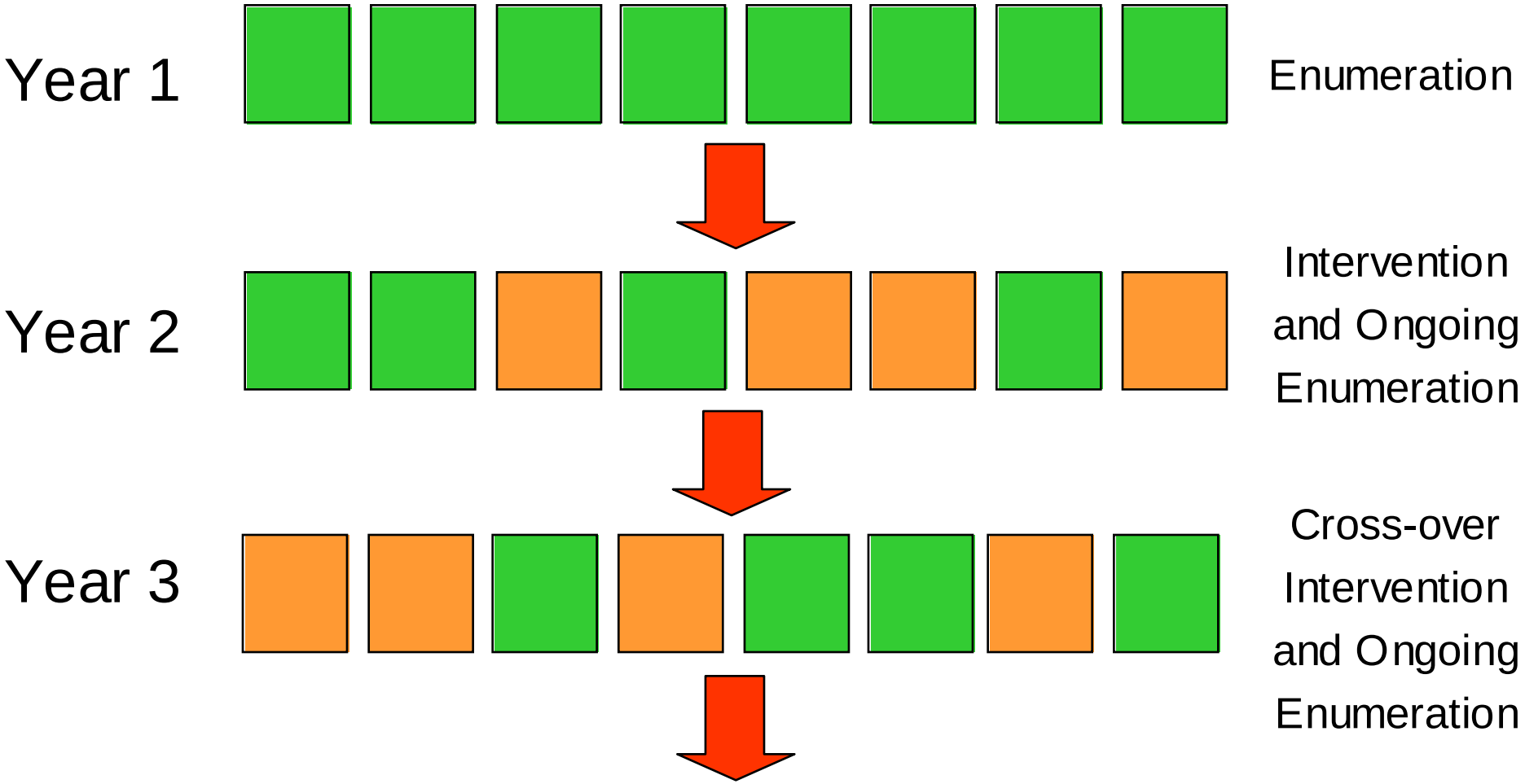
Project Objectives

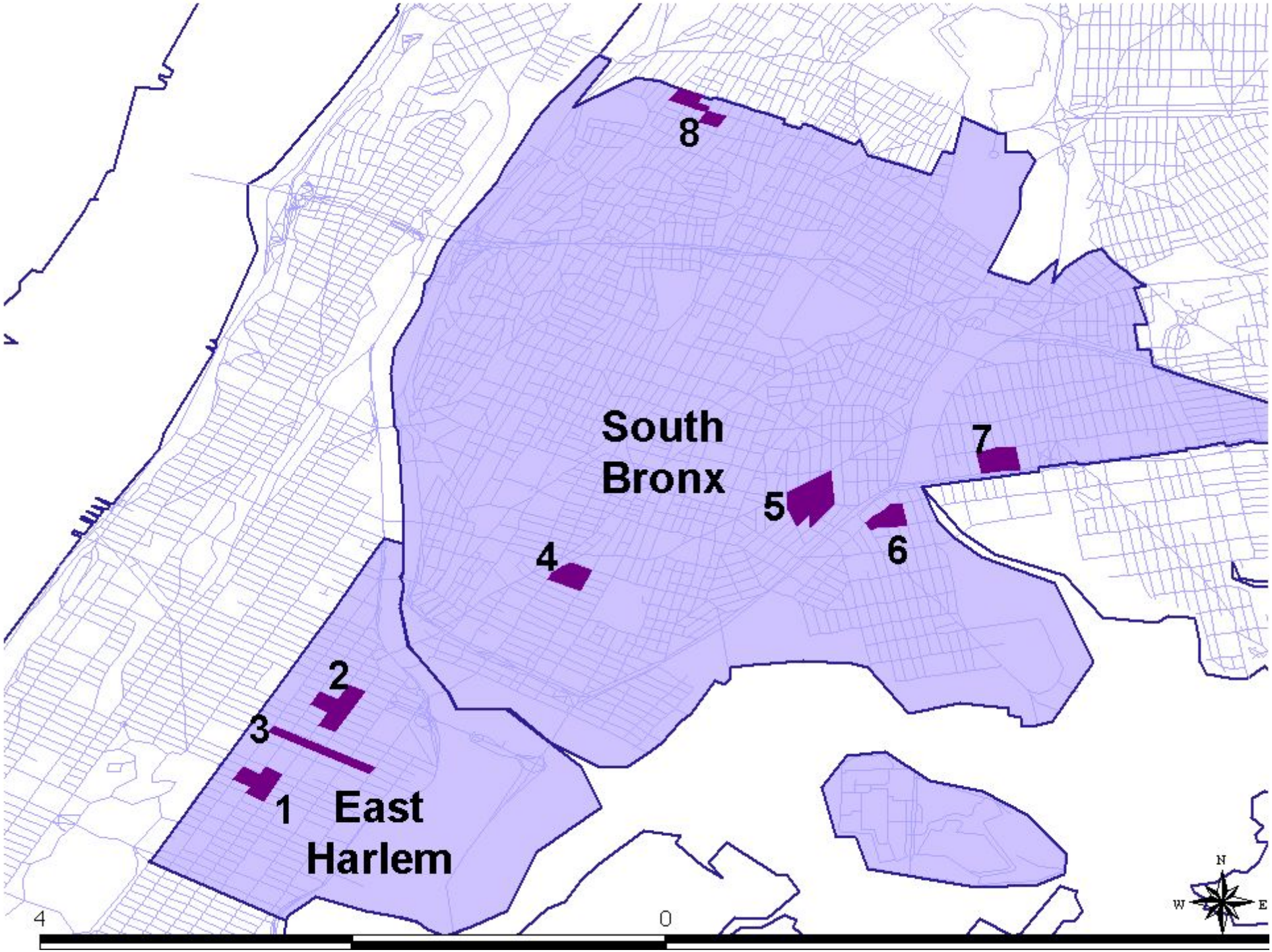
- Using a community-based participatory research approach:
  - To accurately enumerate hard-to-reach populations in disadvantaged neighborhoods
  - Immunize hard-to-reach populations with flu shots in East Harlem and the Bronx
  - Create a rapid vaccination protocol of hard-to-reach populations that serves as a model for public health vaccination plans—both annually and in the event of a pandemic

Project Overview

- Public health concern: Influenza
- Target population: hard-to-reach populations (homebound elderly, undocumented immigrants, substance users, sex workers, and homeless)
- Communities to address: 8 designated areas in East Harlem and the Bronx
- Outreach by a small, bilingual (Spanish and English) team
- October 2003 – July 2007
- Funded by NIDA and Merck Foundation

Study Design





Our VIVA Team!

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Optimizing strategies to vaccinate hard-to-reach populations meeting

- Public health researchers, national vaccine policy makers, global health experts, vaccine manufacturing executives and Project VIVA working group members met in September 2006 to:
  - Address challenges related to immunization of HTR populations in routine immunization campaigns and pandemic situations
  - Develop recommendations for routine and pandemic influenza planning
  - Findings reported in the Journal of Urban Health

    (Vlahov D, Coady MH, Ompad DC, Galea S. Strategies for improving influenza immunization rates among hard-to-reach populations. J Urban Health. 2007 Jul;84(4):615-31)

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Challenges faced in general and HTR populations with approaches to raising routine influenza immunization levels

Objective	Challenges in the general population	Additional challenges in HTR populations
Individual Level		
Change attitudes	-Philosophical beliefs -Difficult to communicate importance of indirect Protection -Misinformation	-Distrust of govn't and healthcare system
Increase motivation	-Need for yearly revaccination	-Immunization: low priority
Educate target population	-High cost of mass education	-Difficult to locate/engage target population -Low educational level -Language barriers

Objective	Challenges in general population	Additional challenges in HTR populations
Provider Level		
Improve vaccination practices and attitudes	-Non-uniform vaccination recommendations -Legal/regulatory barriers to standing orders	-Difficulty in record keeping
Track and follow-up with patients	-Lack of provider motivation -Poor record keeping	-Not easily accessible
Broaden provider base	-Legal/regulatory barriers	
Coordinate with vaccine manufacturers	-Balancing vaccine supply and demand -Inadequate communication	
Provide appropriate financial incentives	-Limited reimbursement for adults	

Objective	Challenges in general population	Additional challenges in HTR populations
Structural Level		
Coordinate with vaccine manufacturers	-Balancing vaccine supply and demand -Inadequate communication from vaccine suppliers	
Change social or professional norms	-Unclear lines of responsibility for adult vaccination -Preventive care not the norm; lack of provider advocacy	
Mount community-based vaccination programs	-Liability issues -Coordination of bordering jurisdictions	-Lack of coverage -Critical timing relative to influenza season
Provide convenient access	-May shift people away from more comprehensive sources of care	-Homelessness, transient -Homebound -Incarcerated -Difficult to locate target populations

Strategies to improve immunization rates for the general and HTR populations

Challenge	Strategies for general population	Additional strategies for HTR populations
Individual Level		
Change attitudes	-PR: newspapers, magazines, TV, other media	-Engage partner organizations and leaders -Mobilize word-of-mouth publicity
Increase motivation	-Mobilize provider advocacy	-Elicit clear provider recommendations -Emphasize benefits to others
Educate target population	-Health fairs, internet	-Tailor to population being served

Challenge	Strategies in general population	Additional strategies for HTR populations
Provider Level		
Improve vaccination practices	-Adopt standing orders for vaccine administration	-Patient education on disease risks, vaccine safety
Track and follow-up with patients	-Mailings, reminders	-Provider assessment, feedback, and prompting
Broaden the Provider base	-Empower additional Nurses/pharmacists; adopt standing orders	-Nurses -Pharmacists
Motivate providers	-Provider education	
Provide appropriate financial incentives	-Address barriers related to reimbursement for adults	

Challenge	Strategies in general population	Additional strategies for HTR populations
Structural Level		
Coordinate with vaccine manufacturers	-Open communication to match demand with supply -Government input into appropriate strain selection	
Change social/professional norms	-Advocate for increased health care coverage in US	-Create high visibility for vaccination programs
Mount community-based vaccination programs	-Broaden Vaccine Injury Compensation Program	-Identify target groups -Visible volunteers -Immunization blitzes
Vaccinate in nontraditional settings and at convenient times	-Extend vaccination season -Reduce reservoirs	-Improve access with community-based sites; home visits, convenient hours of operation

Challenges faced in the general and HTR populations with various approaches to vaccination during a pandemic situation

Objective	Challenges in general population	Additional challenges in HTR populations
Individual Level		
Alert target populations to the need to be vaccinated		-Identification and location of individuals at risk
Mobilize mass public vaccination programs quickly	-Large numbers of people to be vaccinated -Rumors lead to widespread fears	

Objective	Challenges in general population	Additional challenges in HTR populations
Provider Level		
Expand the provider pool	-Long wait times -Need mechanisms to manage adverse events -Learning curve while programs ramp up	-Mobilize nurses and pharmacists
Maintain documentation	-Lack of records under crisis conditions	-Low priority of documentation in crisis situations
Simplify vaccine administration protocols	-Need for documentation and regulation	-Conservative, cautious bureaucracies

Objective	Challenges in general population	Additional challenges in HTR populations
Structural Level		
Assure adequate vaccine supply	-Annual domestic influenza vaccine capacity below nat'l need in pandemic	
Prioritize population segments	-Desire for first-responders to protect family members	-Resource allocation likely to favor easy-to-reach
Implement information dissemination plan	-Communication under crisis conditions	-By definition, HTR
Plan for a Federal distribution program	-Conflict of need to stockpile vs. competing seasonal needs	
Test the plan under simulated conditions	-Time lag in "ramp up" of vaccine supply	
Select vaccine distribution points before the crisis	-Hospitals resistant to lines of command external to their system	-PODs likely to favor easy-to-reach masses

Strategies to improve immunization rates for the general and HTR populations during a pandemic situation

Challenge	Strategies for general population	Additional strategies for HTR populations
Individual Level		
Alert target populations to the need to be vaccinated	-Recognize and address rumors rapidly	-Partner with trusted organizations
Mobilize mass public vaccination programs quickly		-Engage community and Target population -Improve access with community-based sites; home visits, convenient hours

Challenges	Strategies for general population	Additional strategies for HTR populations
Provider Level		
Expand the provider pool	-Mobilize additional nurses and pharmacists	
Maintain documentation		
Simplify vaccine administration protocols	-Keep vaccination protocol fast and simple -Estimate rates of adverse events and be prepared to manage them promptly	

Challenges	Strategies for general population	Additional strategies for HTR populations
Structural Level		
Prioritize population segments	-Families of first responders have requested tier 1 coverage -Involve the public in prioritization planning	-Follow NVAC/ACIP recommendations for prioritization
Implement an information dissemination plan	-Develop and distribute communication and education materials -Test outreach messages with target groups	
Plan for a Federal distribution program	-Provide information to the public via news media -Develop state-based plans for vaccine distribution -Be prepared: Know state and local vaccination rates	-Plan in advance and coordinate logistics -Statewide plans should address underserved populations

Challenges	Strategies for general population	Additional strategies for HTR populations
Structural Level Continued…		
Test the plan under simulated conditions	-Clearly delineate responsibility and authority	
Select vaccine distribution points before the crisis	-Planning is key -Vaccinate in nontraditional settings, at convenient times	-Use nontraditional settings -Identify and recruit organizations to distribute vaccine to HTR populations
Improve technology to increase vaccine capacity	-Find better ways to manufacture	
Maximize use of limited vaccine stocks	-Investigate use of adjuvants -Evaluate dose-optimization strategies	

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Conclusions

- Key strategies to respond to annual and pandemic influenza should include immunization of HTR populations
- HTR populations are important because of issues related to vulnerability and transmissibility
- Expanding immunizations to include HTR populations will require efforts at each stage in program preparation and involve developing strategies at the individual, provider and structural levels
- The planning process for an influenza pandemic should include community engagement and extension of strategies beyond traditional providers to involve CBOs addressing HTR populations

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