Rapid vaccine distribution in non-traditional settings in New York City

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Center for Urban Epidemiologic Studies

The New York Academy of Medicine

Outline

- Background
- Project VIVA Overview and Study Design
- Rapid Vaccine Distribution Results
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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 (elderly shut-ins, 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

- With increasing concerns about the threat of a human influenza pandemic, there is mounting pressure for public health officials to identify new and effective methods to rapidly deliver vaccines to large number of people (Cinti, 2005)
- Community heath nurses may play a vital role during a pandemic, including involvement in mass vaccination efforts (Ho & Parker, 2006)
- There have been a number of replicable rapid vaccine interventions, including smallpox vaccination (D'Heilly, Lockman & Nichol, 2004; Poland, Grabenstein & Neff, 2005)
- Examples of programs providing rapid vaccinations to HTR populations are limited, but include an immunization blitz for IDUs (Weatherill, Buxton & Daly, 2004)

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Community Based Participatory Research (CBPR)

- Underlying principle of research projects at the Center for Urban Epidemiologic Studies (CUES)
- We use CBPR to develop partnerships with community-based organizations, public health agencies, educational and other relevant institutions to study and improve community health

Harlem Community Academic Partnership (HCAP)

- Committed to identifying social determinants of health and implementing community-based interventions to improve the health and well being of urban residents
- Uses active community involvement in research of intervention strategies and interventions

VIVA Intervention Work Group (VIWG)

- A subcommittee of the HCAP formed in response to low vaccination rates among specific groups in our communities
- VIWG met every 4-6 weeks to contribute to each step of project implementation

VIWG Members

- East Harlem Community Health Committee New York Harm Reduction Educators (NYHRE)
- Harlem East Life Plan (HELP)
- Harm Reduction Coalition, Inc.
- Little Sisters of the Assumption Family Health Service
- Mt. Sinai Medical Center, Health Bridge, Birdsong Program
- New York City Department of Health and Mental Hygiene (NYCDOHMH)
- Palladia, Inc.
- Women's Information Network (WIN), Inc.

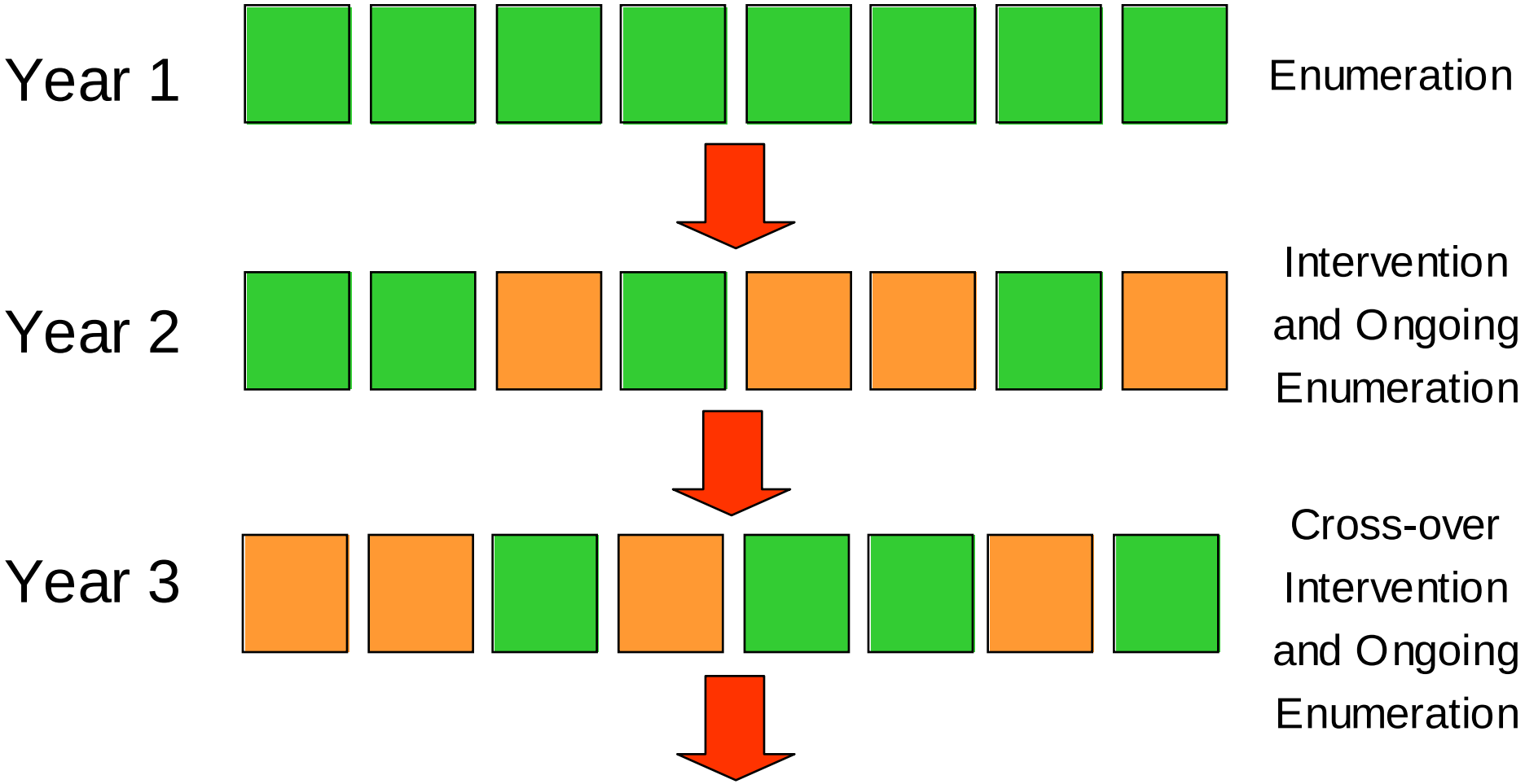
Project Objectives

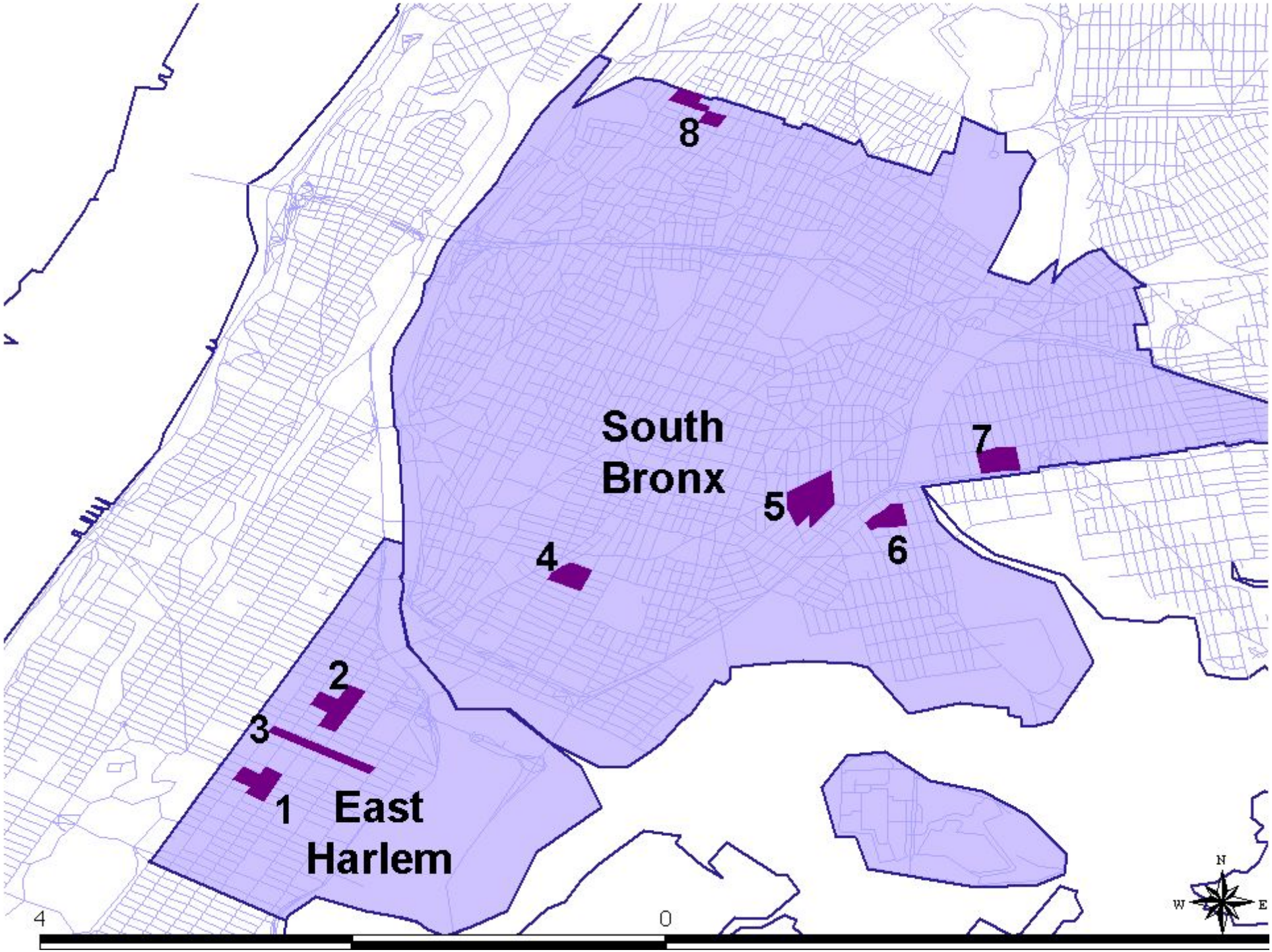
- To accurately enumerate hard-to-reach populations in disadvantaged neighborhoods
- Immunize hard-to-reach populations with flu shots in East Harlem and the Bronx
- Create a rapid vaccination protocol of hard-to-reach populations that serves as a model for public health vaccination plans—both annually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

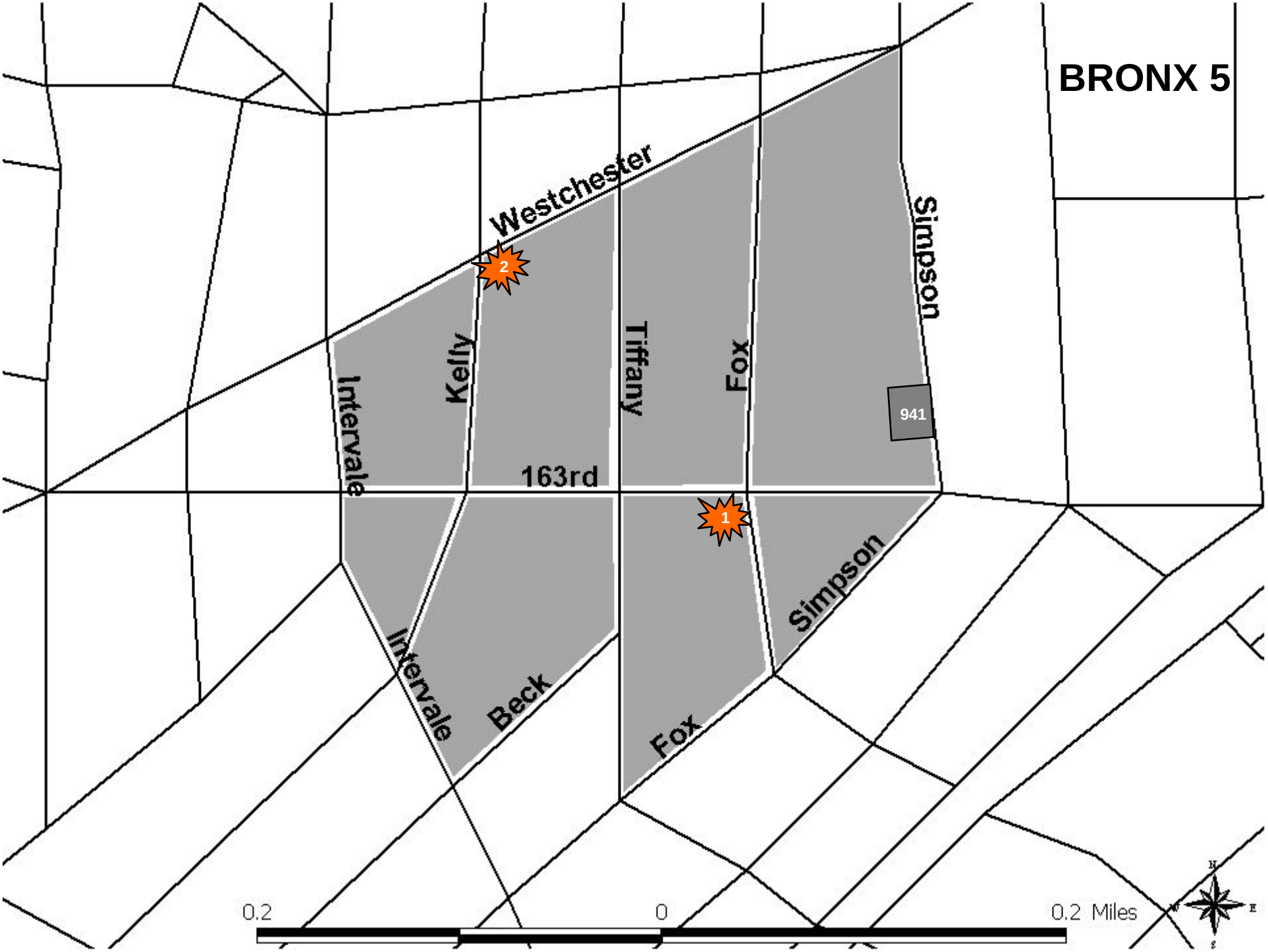
Project Overview

- 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

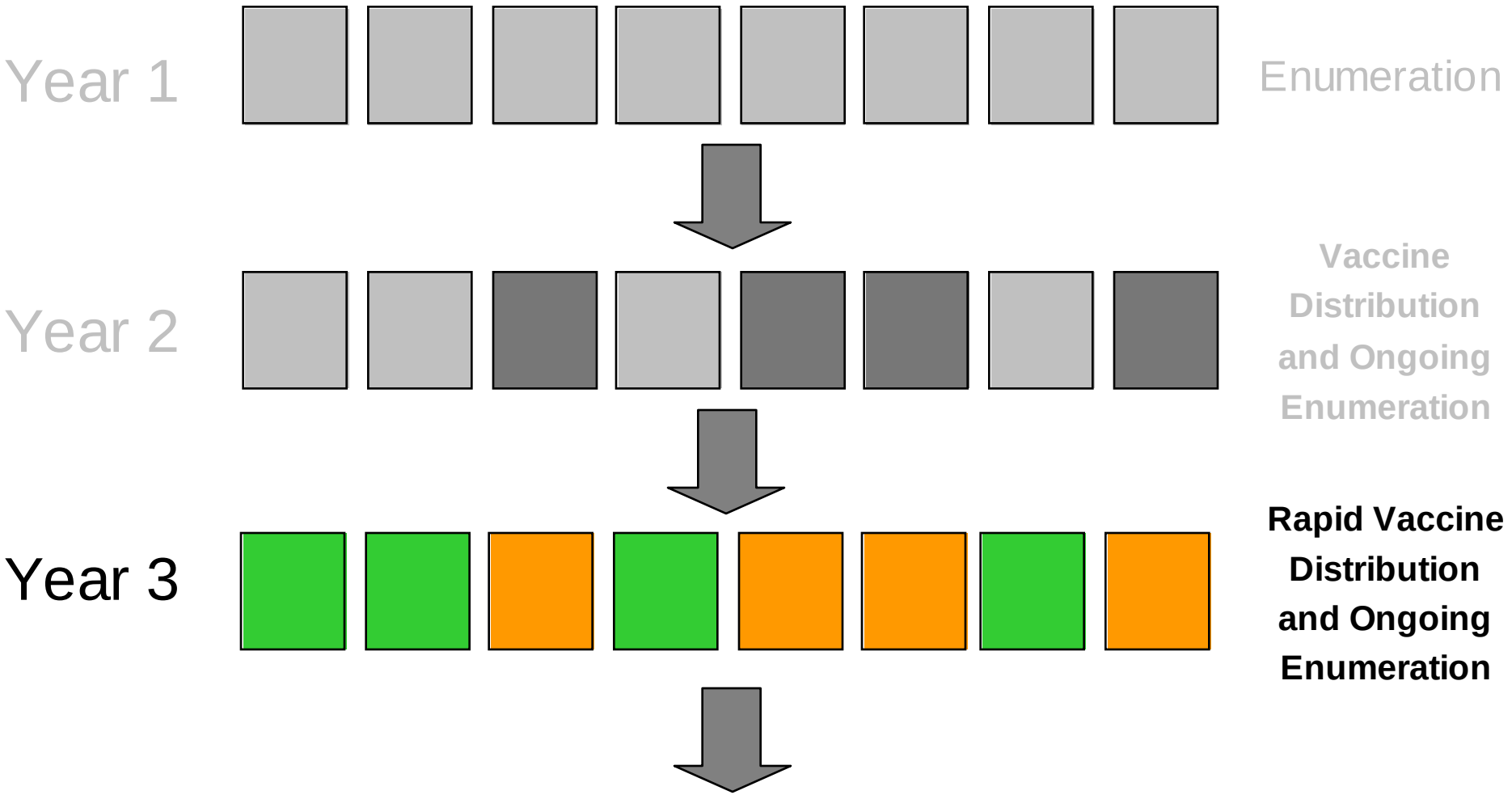
Study Design







Project VIVA Design



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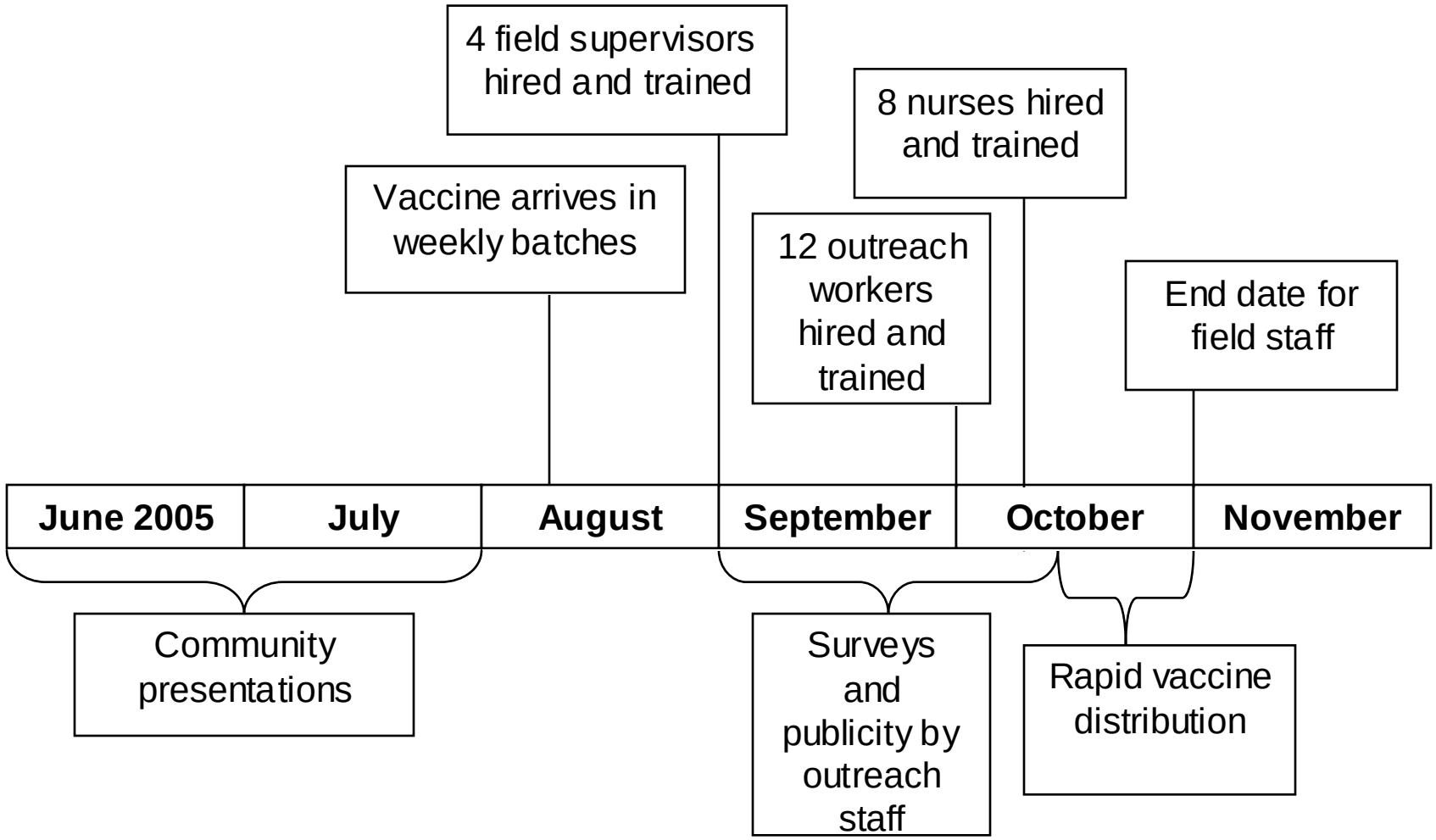
VIVA Year Three: Rapid Vaccine Distribution (2005-2006)

- August 2005: outreach workers start another round of **door-to-door** and **venue-based sampling**
- October 2005: **Flu vaccine distribution** over two weeks via door-to-door and venue-based sampling
  - 4 ***NEW*** neighborhoods in East Harlem and the Bronx
  - Community site one day/week
  - **Accelerated pace:** four teams of four outreach workers and two nurses simultaneously distributed vaccine and collected data (24 field staff total)

Rapid Vaccine Distribution Timeline



Research Question 1

- Who was vaccinated during the rapid distribution phase in the Fall of 2005?
  - Used data from cross-sectional venue-based and door-to-door samples to assess demographic characteristics and access to flu vaccine

Demographic Characteristics (n=1667*)

Characteristic	n (%)
Age	
< 50 years old	1039 (62)
≥ 50 years old	628 (38)
Gender	
Male	797 (48)
Female	869 (52)
Race/Ethnicity	
Hispanic/Latino	1258 (76)
Black	276 (16)
White	65 (4)
Other	61 (4)
Income	
≤ $9,600/Year	1221 (77)

*99% of those interviewed were vaccinated

Door-to-door vaccine distribution

Area	Addresses approached	Opened doors	Vaccine distributed
East Harlem 1	963	524 (54%)	226 (43%)
East Harlem 2	631	290 (46%)	89 (31%)
Bronx 4	494	233 (47%)	99 (42%)
Bronx 7	1261	475 (38%)	283 (60%)
TOTAL	3349	1522 (45%)	697 (46%)

Door-to-door and venue-based vaccine distribution

Area	Door-to-Door	Venue-Based	TOTAL
E. Harlem 1	226	284	510 (31%)
E. Harlem 2	89	277	366 (22%)
Bronx 4	99	260	359 (22%)
Bronx 7	283	130	413 (25%)
TOTAL	**697 (42%)**	**951 (58%)**	**1648**

Hard-to-Reach Populations (% of total vaccinated)

Population Group*	n	(%)
Elderly	218	(13)
Homeless	96	(6)
Injection drug users	218	(13)
Sex workers	16	(1)
Undocumented immigrants	301	(18)
Total Hard-to-Reach Populations	**781**	**(47)**

*not mutually exclusive

Conclusions

- Almost all of those interviewed during distribution were interested and eligible for the vaccine. Those who received the vaccine were predominantly Hispanic/Latino
- On average, 45% of doors approached were opened, and of those 46% received vaccine. Venue-based distribution was more successful than door-to-door in terms of the number of vaccines distributed
- More vaccines were distributed in East Harlem than the Bronx
- 47% of vaccines were distributed to a member of a HTR population

Research Question 2

- What are the lessons learned from the rapid distribution phase that may guide project replication in other venues?
  - Evaluated key program components to demonstrate the feasibility of rapid vaccination of urban populations

(Coady MH, Weiss L, Galea S, Ompad DC, Vlahov D for the Project VIVA Intervention Working Group. Rapid vaccine distribution in non-traditional settings: Lessons learned from Project VIVA. Journal of Community Health Nursing, 24(2), 79-85)

Lessons learned

- Neighborhood residents were receptive to receiving influenza vaccination in street-based settings
- Community partnership direction in protocol development and implementation enhanced receptivity to the project
- Community outreach facilitated a positive response to intervention activities
- Staff selection and training, which emphasized the importance of knowledge of our communities, was necessary for successful intervention

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- To prepare urban communities for a possible influenza pandemic, instituting annual mass vaccination efforts in non-traditional settings is recommended
- Results demonstrate that vaccination can feasibly be delivered by public health nurses to members of HTR populations through a community-based approach
- This project has the potential to be generalized to other HTR populations in other areas and utilized for annual vaccination campaigns or in the event of a pandemic

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