Implementation and Coverage of the First Public Sector Introduction of Typhoid Conjugate Vaccine (TCV) – Navi Mumbai, India

Kashmira Date, MD MPH

11th International Conference on Typhoid and Other Invasive Salmonellosis

Hanoi, Vietnam

27 March 2019

On behalf of the Navi Mumbai TCV Team

Navi Mumbai Municipal Corporation City of the 21st Century

World Health Organization

Stanford University

icmr NICED

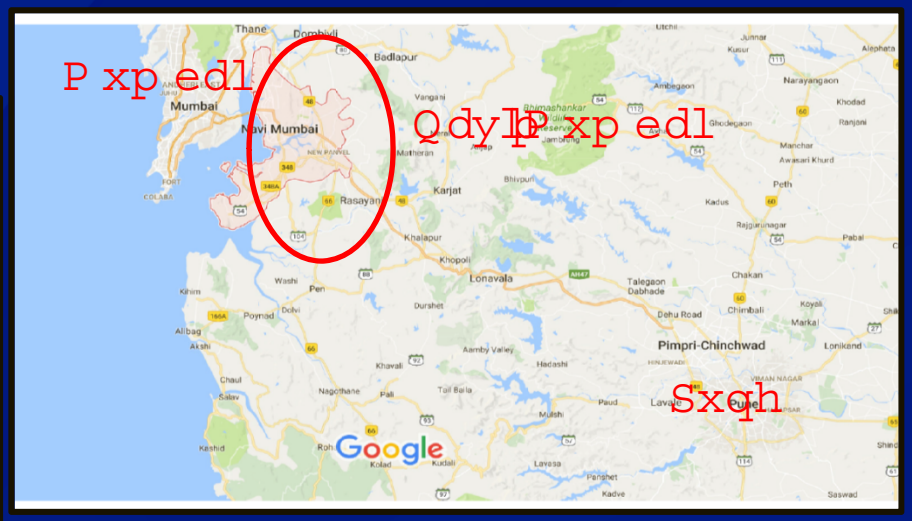
International Vaccine Institute

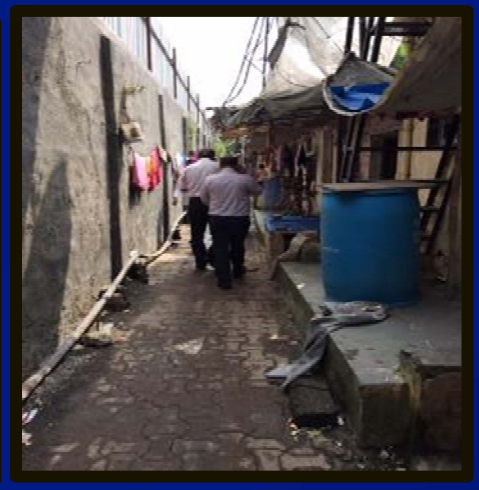
CDC

FhqwhuiruJoredoKhdowk

JoredoLppxql}dwlrqGlylvlrq

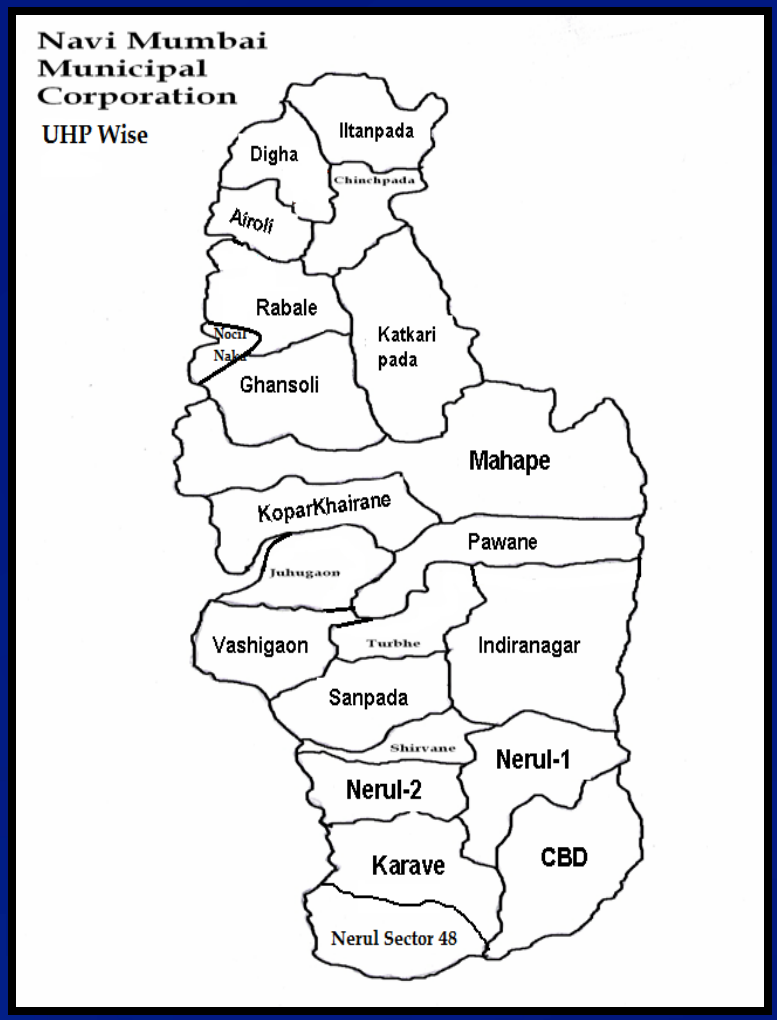
Navi Mumbai, India (1)





Navi Mumbai, India (2)

- Developed as **a planned city** in the 1970s
- Urban/suburban area
- 8/13 nodes under the **Navi Mumbai Municipal Corporation (NMMC)**
  - **Population: 1.4 million (est.), <15 years = ~390,000**
- **22 urban health posts (UHP) or urban primary health center (UPHC) areas**
  - 9 designated as "high-risk" based on % population living in slums



TCV Introduction and Evaluation Decision and Commitments

- Decision and financial commitment by NMMC (+ central and state government approvals)
- Vaccine donation (Bharat Biotech International Ltd.)
- Active local chapter of the Indian Academy of Pediatrics
- Partners' commitment for monitoring and evaluation
  - WHO-India, Indian Council of Medical Research (ICMR), Centers for Disease Control and Prevention (CDC), Stanford University, International Vaccine Institute
  - Local partners (hospitals and laboratories)
  - Others

Qdyl P xp edl P xqlflsdd Frusrudwlrql K hdgbriilfhb
z z z lqp p fljryl q

TCV Introduction by NMMC

- Implementation lead: NMMC
- Target population: 9 months – <15 years old children within the NMMC jurisdiction
- Strategy: Catch-campaign in 2 phases (2018, 2019) + routine
  - 11 UHPs in 2018. estimated target: 160,000 children
  - 11 UHPs in 2019
  - Introduction into the routine program (proposed starting 2019 – 2020)

CAMPAIGN PLANNING AND IMPLEMENTATION

Phase 1 (2018) Campaign Preparations

- **Trainings and capacity building**
  - NMMC staff: microplanning, campaign logistics, adverse events following immunization (AEFI) management
  - Field workers: headcount survey and social mobilization

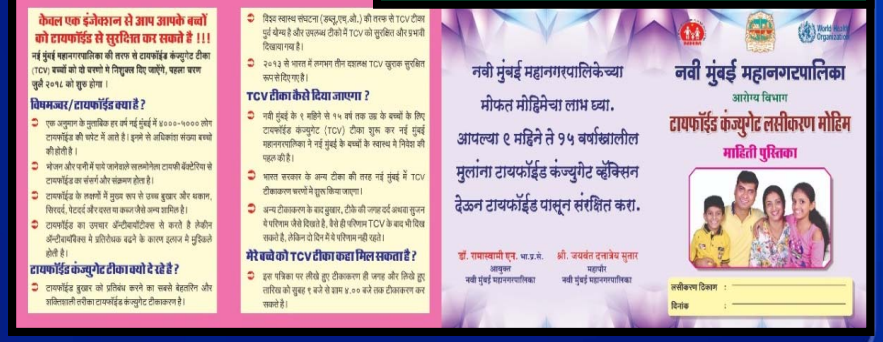
- **Logistics**
  - 50,000 doses donated; rest purchased by NMMC
  - Needles and syringes donated by the Government of India
  - Preparation of AEFI kits and local AEFI committees at the UHP level
  - Biomedical waste management
  - Reporting formats (administrative coverage reporting)

Phase 1 (2018) Campaign Microplanning

- Led by NMMC with technical assistance from WHO-India and CDC
- Use of existing immunization program plans and resources
  - Polio microplan for planning and headcount survey
  - Logistics and campaign plans adapted from the national measles-rubella campaign guidelines
- Strategy
  - Campaign days on weekends and public holidays (6-week period)
  - Catch-up during the weekdays at UPHC clinics
- Resources
  - Additional resources from the 2019 UPHCs
  - 1 outreach session for ~150 beneficiaries (health posts, routine immunization posts, clinics, residential society offices, community centers, others)

Phase 1 (2018) Campaign Information, Education and Communication (IEC) and Crisis Communication (1)

- No mass media (due to the phased approach)
- Focus group discussions for messages (caregivers from different income levels, health workers and medical officers)
- Field communication strategy (leaflets and information booklets distribution 1 week before the campaign in each area; banners)
- Endorsement and support from the private sector



Phase 1 (2018) Campaign Information, Education and Communication (IEC) and Crisis Communication (2)

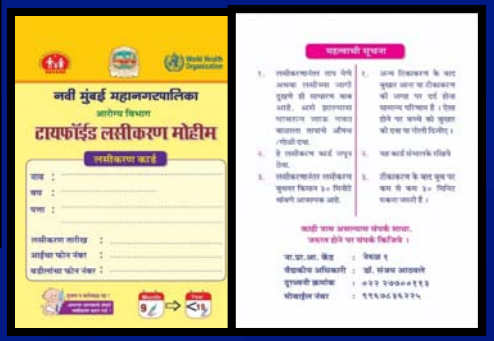
- Media briefing by honorable NMMC mayor and commissioner
- Weekly newspaper coverage updates by NMMC
- Local agency for assistance with crisis communication planning, media monitoring and response readiness

टायफॉईड लसीकरण मोहिमेस नागरिकांचा उत्स्फुर्त प्रतिसाद

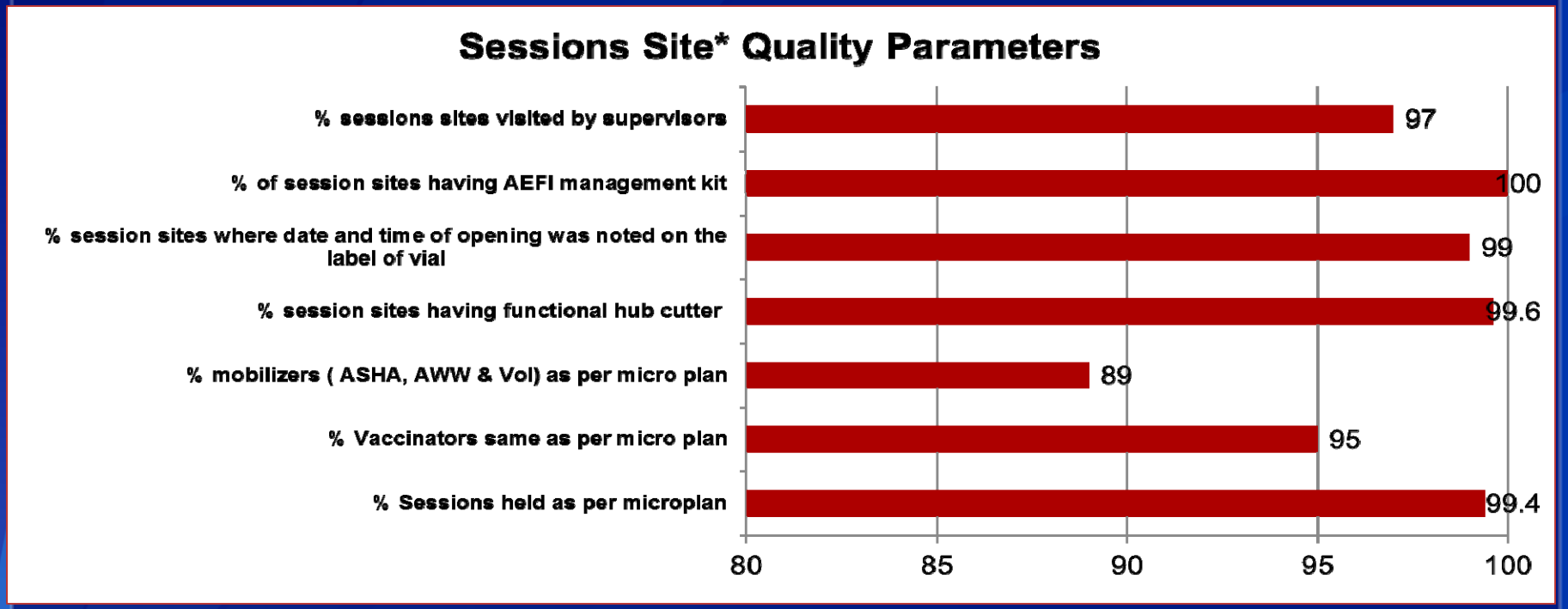
टायफॉईड संरक्षक लसीकरणाचा ७२५०० हून अधिक मुलांनी घेतला लाभ

Phase 1 (2018) Campaign Implementation

- TypBar-TCV
- July 14 – August 25, 2018
  - Except Aug 4 – 5 and Aug 15
  - Aug 19, 24, 25 – campaign mop-up days
- Campaign launch by Hon. Mayor of NMMC
- Vaccination cards provided to beneficiaries
- Reported administrative coverage = 113,420 children (~71%). Lower in high income communities
- Reported adverse events (AEFIs) per national AEFI guidelines – 222 (most were mild)



Phase 1 (2018) Campaign
Rapid Convenience Monitoring



*Total 495 sessions monitored across 11 UHPs

328 areas were selected for household monitoring visits and vaccination status was verified for 6560 children (86% found to be vaccinated – lower in high income areas)

- 48 areas were recommended for mop-up activities

TCV CAMPAIGN COVERAGE SURVEY

Objectives

- Estimate coverage achieved through the public sector TCV program in phase 1 (2018 campaign) among the targeted age group
- Estimate prior typhoid vaccination coverage through the private sector

Methods

- Community-based household-level stratified 2-stage cluster survey based on the current WHO Coverage Survey Guidelines
- 57 primary sampling units (PSU) with 24 households (HHs) per PSU (total of 1368 HHs)
  - Stage 1 (PSU): based on polio microplan team day (~100 – 150 households). Updated HH listing generated
  - Stage 2 (HHs): 24 HHs randomly selected from each PSU
- Eligibility: age-eligible and resident of one of the UPHCs where vaccination occurred in 2018.
- Coverage estimates and 95% confidence intervals (CIs) calculated (stratified cluster design and sampling weights accounting for the selection of clusters and households and household non-response)

Preliminary Results

Selected Household (HH) Characteristics

Wrwdo KK vlvlwhg @ 469; Orfnhg2 pljudwhg2 uhixvhg hwf @ 4<; Wrwdo Holjleoh @ 857

Fkdudfwhulvwlf	Q@857
Qxp ehu ri shuvrqv lq KK +P hgldq/udqjh,	7 +5/ 45,
Qxp ehu ri fkloguhq ?48 |hduv lq KK +P hgldq/udqjh,	5 +4/ 9,
	q +(,
P dlq ioz holqj p dwhuldo • Ilqlvkhg iorru • Ilqlvkhg urri	 836 +<9, 7<9 +<8,
Sulp du| z dwhu vrxufh v=wds lqvlgh wkh krxvh	786 +;;,
Wrlohw idflolw| =lp suryhg wrlohw idflolw|	76< +;7,

Preliminary Results

Selected Respondent Characteristics

Fkdudfwhulvwlf	Q@857
P hgldq djh +udqjh, lq |hduv	65 +4; pu ;3,
	q +(,
Ihp doh vh{	767 +;6,
Hgxfdwlrq ohyho • Judgh 8 pu 43 • Judgh 44 pu 45 • Judgxdwh2Kljkhu	 53< +73, ;7 +49, 445 +54,
Sulp du| vrxufh ri K K lqfrp h • Surihvvlrqdo2whfkqlfdo2dgp lqlvwudwlyh • Oder u dqg vhuylfh	 5;9 +88, 468 +59,

Preliminary Results
TCV Coverage

<7:bhdjledhbfklguhqbdghqwlilhg>:48bohsruwhgbohfhlylqjbWFYbgxulqjbwkhb
fdp sdljqb=:8(,b

- 83;2:48b=;3(,bohsruwhgbkdylqjbohfhlyhgbdbfdug

P hgldqbdjh@b:b|hduvb=67(bz huhb?8b|hduv,

	Q@<7:	Z hljkwhg (	<8(bFL
WFYbfdp sdljqbgrvhe|bfdugbruuhfdo	:48	:617	9917bu:<17
Dq|surubw|skrlgbydfflqdwrqb	86b	9	617bu4316
WFY fdp sdljqbfryhudjhdp rqjbfklguhqb ?8b|hduvb	5892656	:715	9815bu;814

Fryhudjhborzbqbwkhbkljkbqfrp hduhdvb1Q huxdb7;b=65(,/Q huxdb4b=86(,

Strengths & Challenges/Limitations

Strengths

- Political commitment and financial contribution – NMMC (with BBIL donation)
- Use within an existing immunization program
- Government buy-in and approvals
- Partnerships and collaborations – national and global
  - National Polio Surveillance program (country office and field)
  - Local hospitals and laboratories

Challenges

- Delays: NMMC administration changes, administrative and financial approvals for program implementation and evaluation components
- Coverage survey data collection by an external survey agency – required close supervision and monitoring of field work

Navi Mumbai TCV Team!

- **Navi Mumbai Municipal Corporation leadership and staff**
- Government of India Ministry of Health and Family Welfare – Expanded Program on Immunization
- State of Maharashtra, Department of Public Health and Family Welfare
- Indian Academy of Pediatrics - Navi Mumbai Chapter
- Bharat Biotech International Limited
- WHO-India National Polio Surveillance Program (NPSP)
- Indian Council of Medical Research (ICMR) - NICED
- Stanford University
- Hospital and laboratory sites: Navi Mumbai Municipal Corporation hospital, Mathadi Trust Hospital, DY Patil Medical College and Hospital, MGM Vashi Hospital, Yewale Hospital, Joshi microbiology laboratory)
- WHO-SEARO and WHO-HQ
- International Vaccine Institute
- Grant Government Medical College
- Scientific Advisory Panel
- Bill and Melinda Gates Foundation
- CDC-Atlanta staff

Thank you!

The findings and conclusions in this presentation are those of the author and do not necessarily represent the views of the Centers for Disease Control and Prevention