

# Using an IIS and Vital Statistics Data to Measure Racial/Ethnic Immunization Coverage Disparities in Minnesota

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# Health Equity Work in Minnesota

- Targeting and eliminating health disparities is major, organization-wide objective for Minnesota Department of Health (MDH)
- Objective in action: using Minnesota's Immunization Information System (IIS), the Minnesota Immunization Information Connection (MIIC), to examine immunization rates of Minnesota's Somali population

# Immunization Issue

- Summer 2008: vaccine hesitancy issues raised in TV news story
  - Local story: concern about high numbers of Somali children with autism in Minneapolis special education programs
  - “It’s the vaccines,” claimed a Somali parent
- Spring 2009: MDH study of Minneapolis Early Childhood Special Education enrollment data
  - Showed higher numbers of Somali children enrolled compared to non-Somali children
  - Caveats not understood
  - Data were quoted as prevalence (“6 times higher”)
- MDH’s Autism Program responded to community concerns
  - Town hall meetings
  - Commissioner spoke with Somali community and faith leaders

# Immunization Issue

- “Autism” was new to Somali parents, reported as not seen in Somalia
  - Managing their child was overwhelming
  - Resources difficult to obtain
  - Parents linked themselves to national groups that embrace the MMR- autism claim
- 2009: providers reported to MDH that Somali parents were refusing MMR
- 2011: measles outbreak prompted MDH to look closer at MMR coverage rates

# MIIC Use

- MIIC is Minnesota's statewide IIS
  - Established in 2002
  - Contains over 78M immunizations for 7.8M clients
  - Most complete source of immunization data in MN
- MDH Immunization Program examined MIIC data for childhood immunization coverage gaps between children of and not of Somali parentage
  - Focus on 1 MMR by 24 months
  - Eventually expanded to other childhood vaccines by 24 months

# Sources for R/E Data: Vital Statistics

- MIIC receives weekly files from Vitals to load into MIIC
  - Standing Internal Data Use Agreement in place with Office of Vital Records
  - New births
  - Deaths
- Contains race/ethnicity data for mother and father (if present on birth certificate) for all births since 2004
  - MIIC populates race/ethnicity for child based on mother's information from birth certificate
- Birth country of mother
  - Father's birth country also a source if present on birth certificate
  - Not currently part of weekly file or stored in MIIC tables

# Sources for R/E Data: Providers

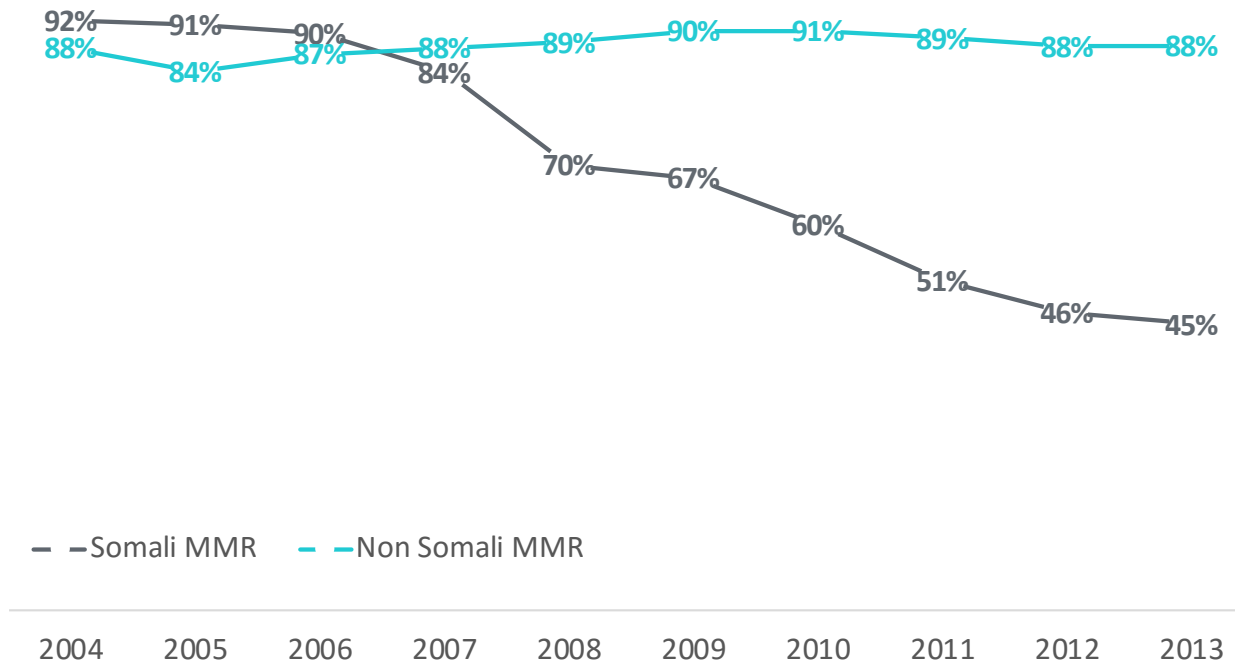
- Race and ethnicity information required for incoming HL7 messages
  - “Required or Empty” – if organization has this information, it is required
- Not required for other formats
- Not displayed in user interface/client record, only in background data tables
- Findings from initial analysis in 2012
  - 70% of records have “Other” or “Unknown” as race
  - Incoming messages appear to over-write race data
    - Still investigating details

# Race/Ethnicity-Specific Analysis

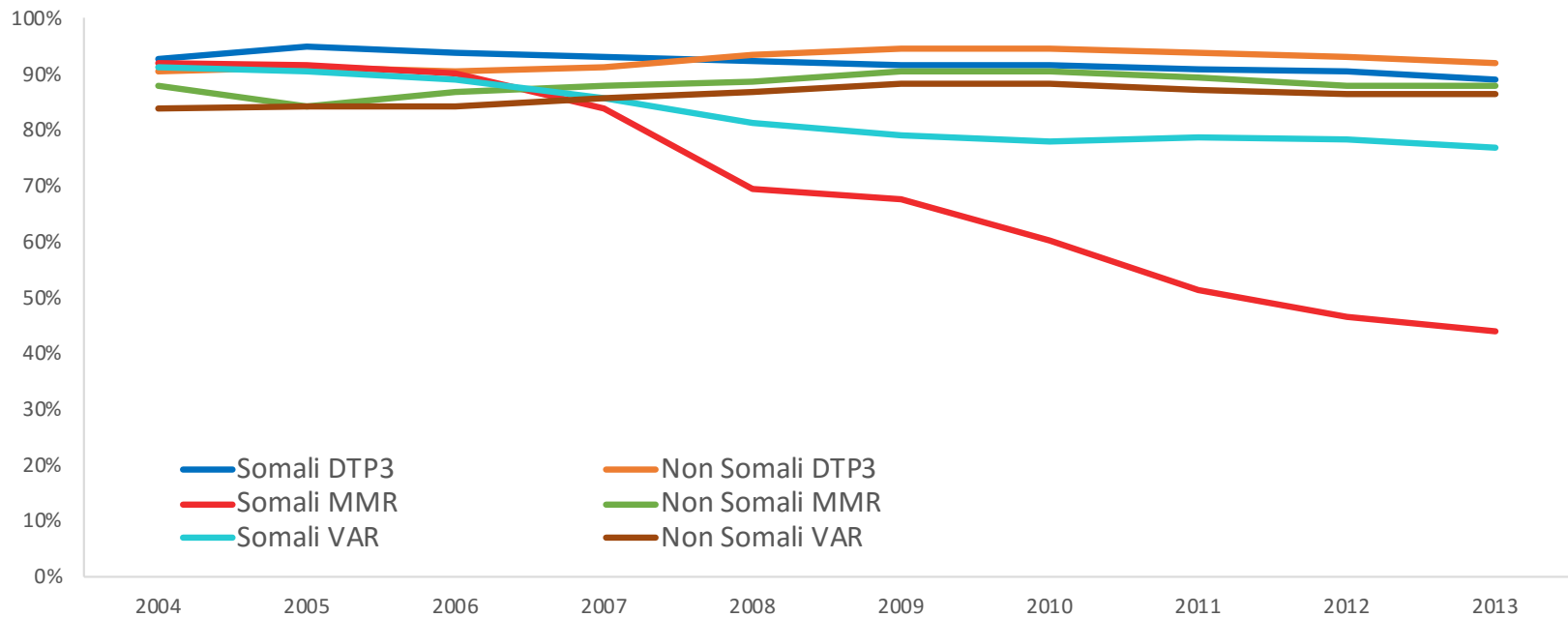
- Requested birth cohort data by year from Vital Statistics
  - Birth certificate number, birth country of mother or father, and race/ethnicity
- To identify Somali population:
  - Used birth country of mother or father to attribute “Somali” status
  - If race or ethnicity said “Somali,” attributed “Somali” status
- Rest of population was “not Somali”
- Matched race/ethnicity/birth country data from Vitals to MIIC immunization records using birth certificate number
- Ran up-to-date immunization coverage rates for all childhood vaccines



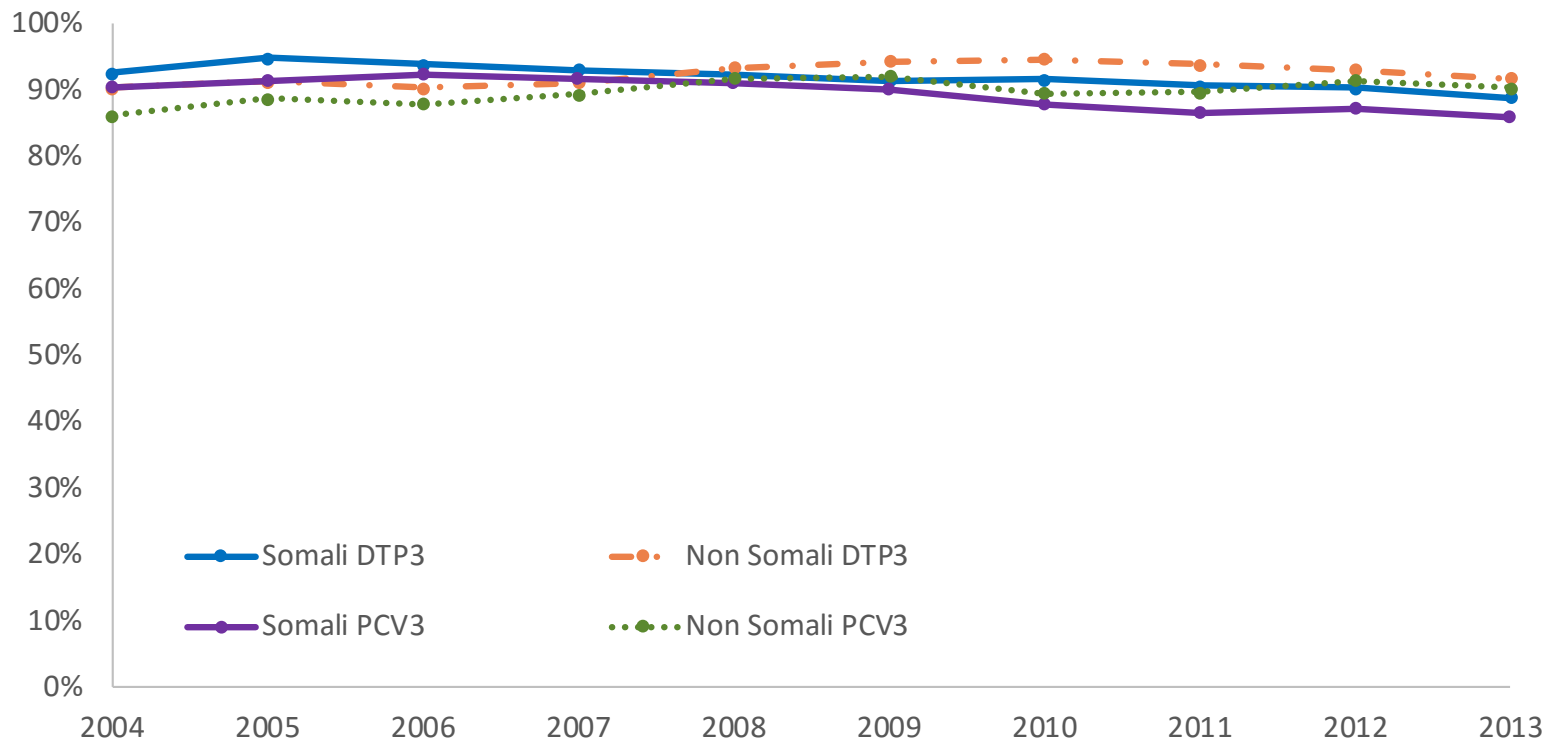
## Comparison of +1 MMR Rates by 24 Months for Children of Somali and Non-Somali Descent, by Birth Year



# Comparison of Immunization Rates by 24 Months for Children of Somali and Non-Somali Descent, by Birth Year



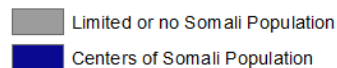
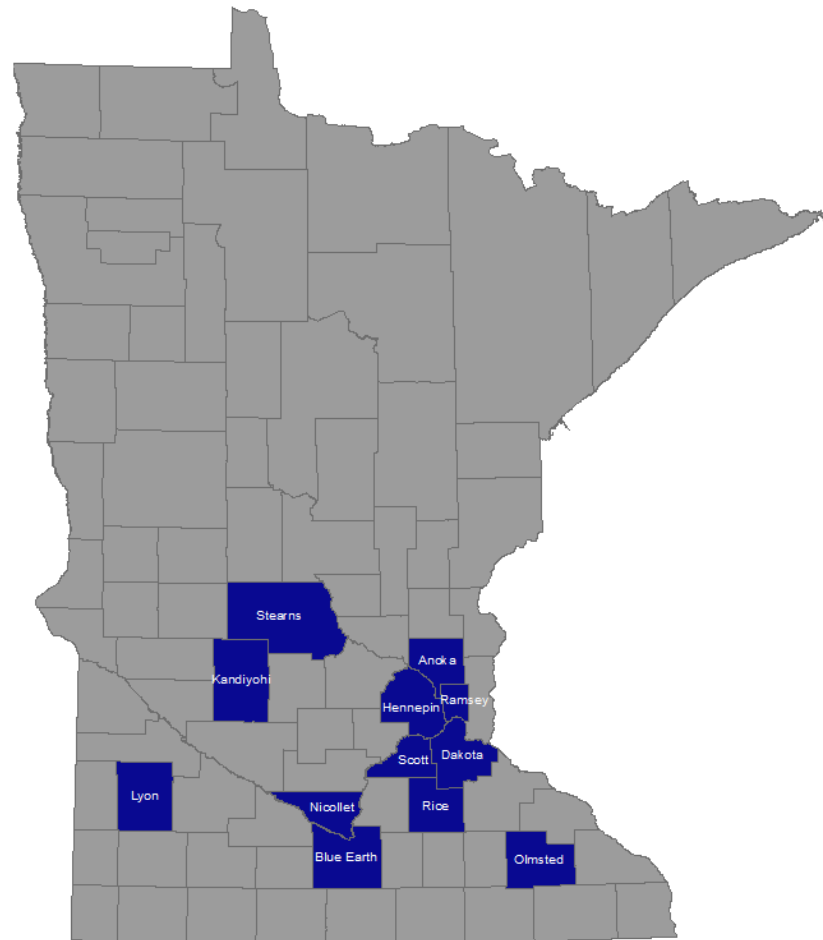
# Comparison of +3 DTaP and +3PCV by 24 months for Children of Somali and Non-Somali Descent, by Birth Year



# Somali Immunization Rates: Population Centers

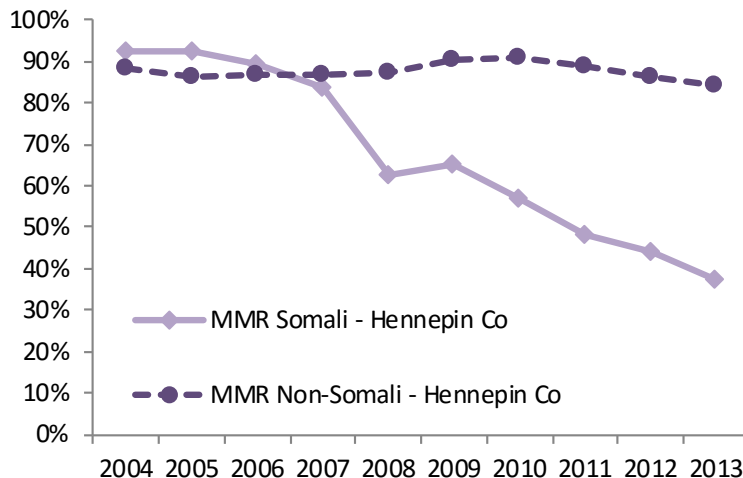
- Analysis of Somali population centers throughout Minnesota
  - Counties with >20 Somali births/year per Vital Statistics data
- Found similar gaps in immunization in Somali population centers throughout the state

# Somali Population Centers

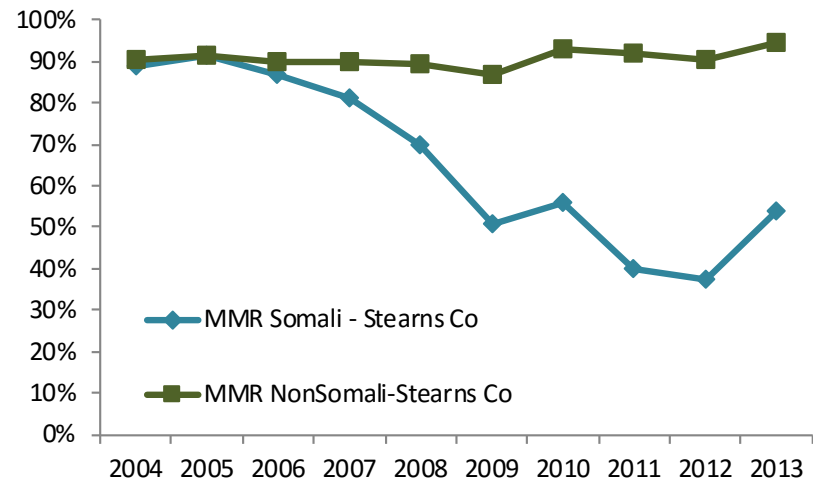


# Comparison of +1 MMR Rates by 24 Months for Children of Somali and Non-Somali Descent in Two Counties, by Birth Year

## Hennepin County



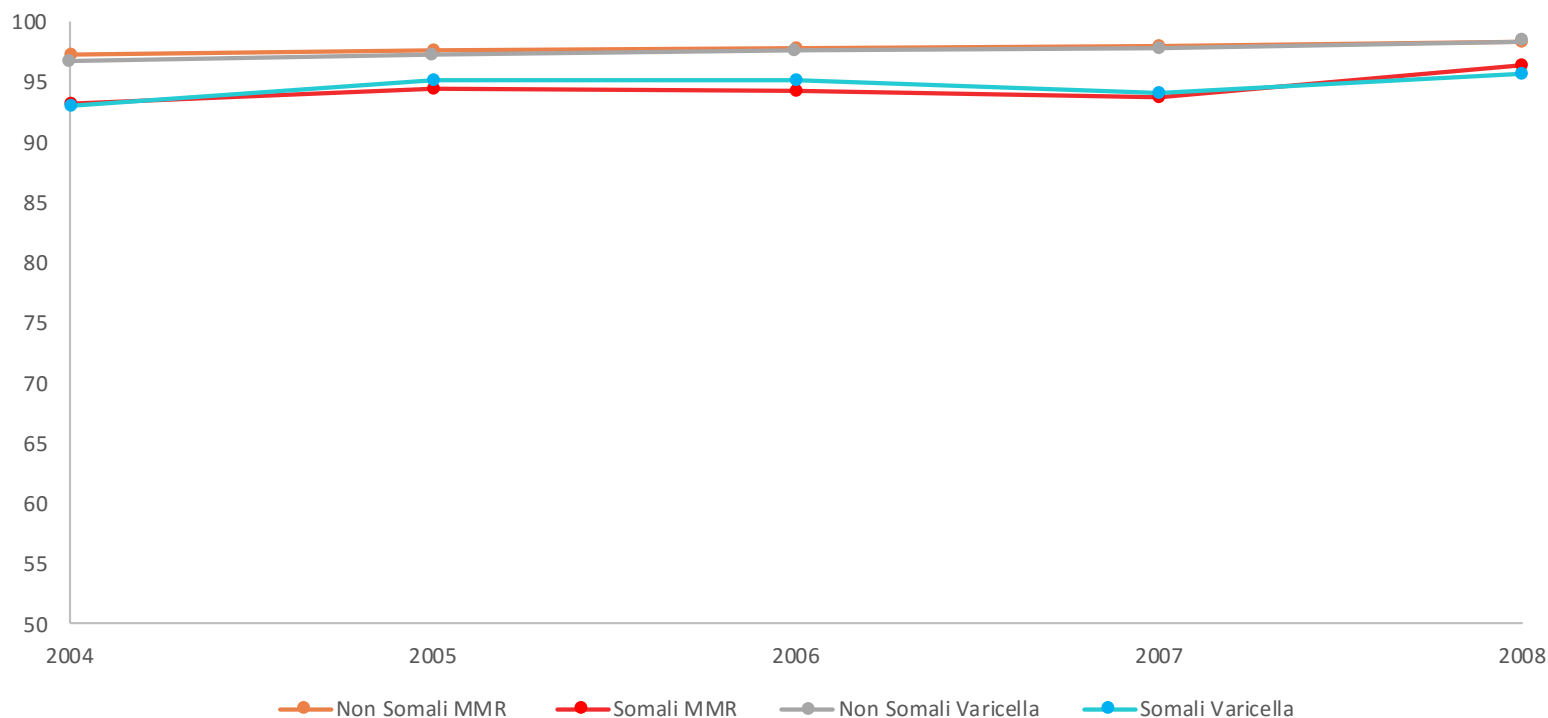
## Stearns County



# 72 Month Analysis

- Examined 2004-2008 birth cohort data to see if vaccine hesitancy was reflected in rates for older children of Somali descent
- Implications for school entry
- Children of Somali descent appear to receive 2 doses of MMR and Varicella vaccine by 72 months at same rate as non-Somali children

# Comparison of Selected Immunization Rates by 72 months in Children of Somali Descent versus Non-Somali, 2004-2008





# Public Health Interventions

- Initial approach: broad outreach to Somali parents to encourage immunization
  - Promoted Mayo's YouTube videos on autism and on immunizations
  - Developed travel public service announcement
  - Developed video interview with mother of child who almost died from measles
- Diverse media project – multiple ethnic and racial media outlets
  - Radio announcements
  - News articles and ads

# Public Health Interventions

- Take two: regrouped and refocused efforts
- Developed MDH cross-division team
- Hired Somali staff
  - RN – Children & Youth with Special Health Needs (CYSHN)
  - Outreach worker for Immunization Program

# MDH Work Plan

## Provider/partner relationships

- Re-engage leadership in the community
- Pull in interested health professionals

## Education and outreach

- Oral approach – smaller groups
- Three audiences: parents, influencers (Imams, doulas, mosque gatekeepers, interpreters, outreach workers), and clinicians

## Outbreak control/mitigation

- Increase community awareness of low rates through radio interviews, Somali newspapers, Somali TV
- Share internal planning and response strategy with local public health partners
- Outreach to Somali-owned day care centers and Somali-attended charter schools

# Lessons Learned

- Quality of race/ethnicity data in MIIC
  - Check IIS tables for race/ethnicity data usability before moving forward
  - Test records to see how incoming messages affect race/ethnicity fields
- Sensitive data
  - Avoid using accusatory and stigmatizing language regarding community beliefs and views
  - Have a culturally-competent team use data and communicate about rates
  - Recruit and work with members of the impacted community to gain buy in, legitimacy, and valuable perspective
- Successful project!

# Next Steps

- Continue to track immunization coverage for Somali birth cohorts every year
  - Supply data to outreach staff to direct public health interventions
  - Continue to examine up-to-date status for vaccines at 72 months to see if Somali children receive necessary vaccines for school
- Use same method to identify and examine immunization gaps within other race/ethnicity/birth country categories
  - Childhood
  - Adolescent

# Thank you!

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