





# School Enrollment and IIS Denominators: Confirmation or Contradiction?

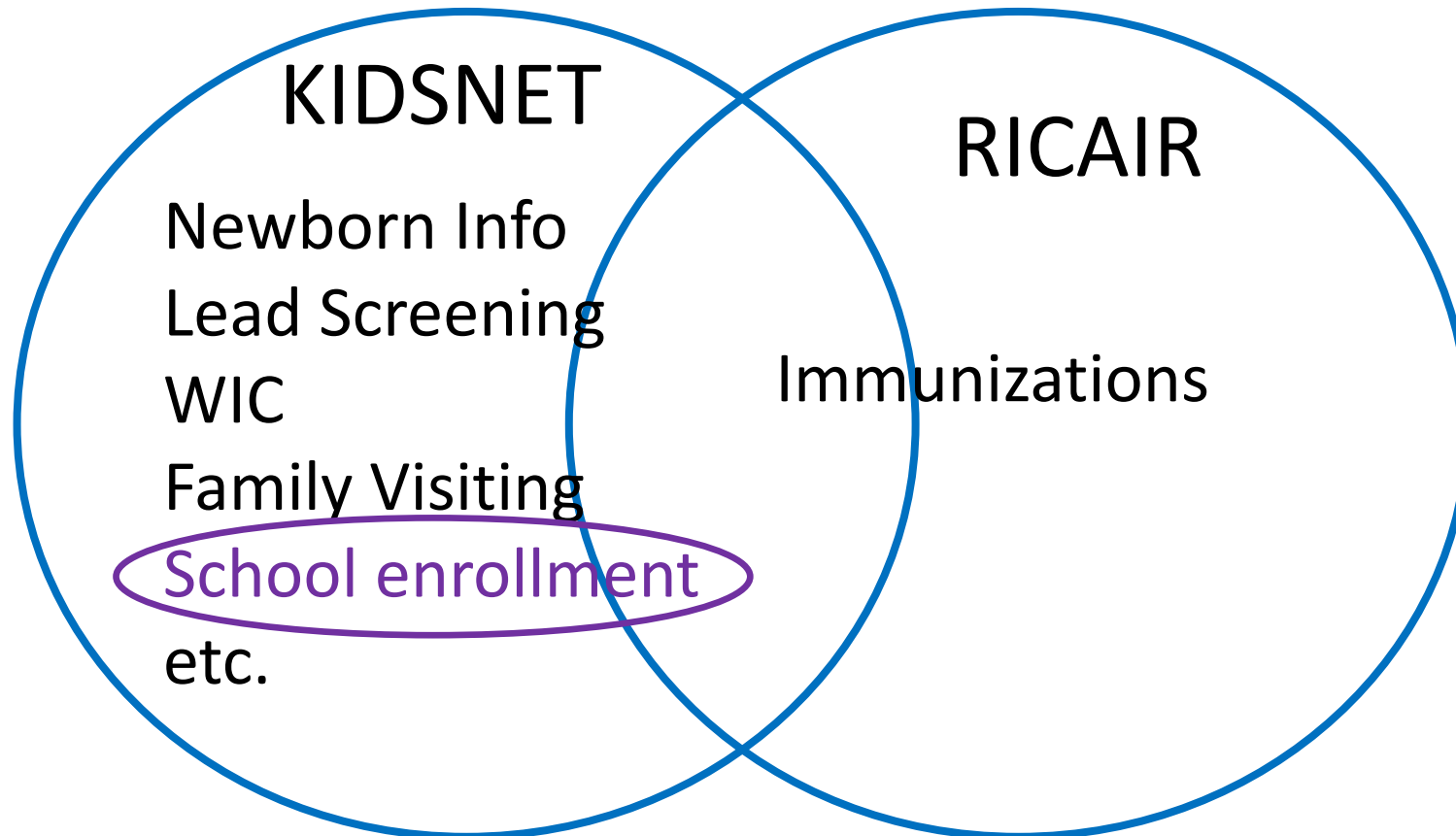
**May 7, 2024**

**Ellen Amore  
Dora Dumont**

# RICAIR IS PART OF KIDSNET



- KIDSNET is an integrated public health information system
- RICAIR is the immunization component of KIDSNET



# School Enrollment Data in KIDSNET



Number of  
schools

Number of students  
(rounded to nearest 100)

Public/charter

314

135,000

Private/Catholic

9

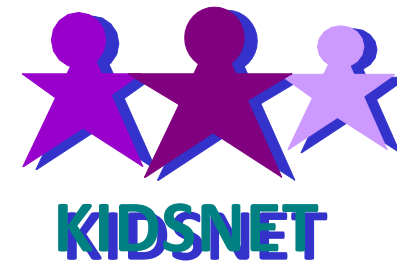
3000

# What about FERPA?

☆☆ Family Educational Rights and Privacy Act (FERPA) authorizes the disclosure of personally identifiable information (PII) contained in educational records to federal and state officials for purposes relating to accountability and research, including the audit, evaluation, and compliance and enforcement of federal or state supported education programs

☆☆ Roster data only

☆☆ Schools evaluate compliance with school regulations

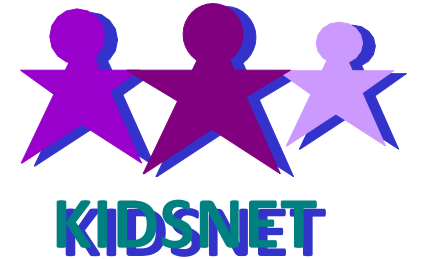


# Data Sharing Agreement with Department of Education



**WHEREAS**, the Family Educational Rights and Privacy Act (FERPA), 20 U.S.C. §1232g and its implementing regulations under 34 C.F.R. §§ 99.31(a)(3) and 99.35(a)(1), as amended effective January 3, 2012, authorize the disclosure of personally identifiable information (PII) contained in educational records to federal and state officials for purposes relating to accountability and research, including the audit, evaluation, and compliance and enforcement of federal or state supported education programs;

Data sourced from the KIDSNET system will be used for the following purposes:



d. To evaluate school programs to assure that all children have received developmental screening, immunizations, and other preventive health services during early childhood and beyond to promote health and educational success.

# Rhode Island Child and Adult Immunization Registry (RICAIR)



## PROBLEM: Number of IIS Records Exceeds Census

# of school age children (ages 6-18) in RICAIR*	237,700
Rhode Island population (ages 6-18) according to census	156,300
Difference	81,400

Did they stay or did they go?

\*All children in KIDSNET except those with status deceased, inactive, or unborn  
Census estimate for 2022 based on 2020 census (table sc-est2022-alldata6 )

# The Denominator Matters



	Total #	Example # vaccinated	Example % vaccinated
# of school age children (ages 6-18) in RICAIR	237,700	150,000	63%
Rhode Island population (ages 6-18) according to census	156,300	150,000	96%

Which is it?





# Did they stay or did they go?

## Resident children (aged 6-18)



<b>The ideal:</b>	State = RI	State $\neq$ RI
Status = Active*	100%	0%
Status = Lives out of RI	0%	100%
<b>The reality:</b>	Number**	Percent
State & status agree: RI resident	199,700	84.0%
State & status agree: not in RI	6600	2.8%
State = RI, status=Lives elsewhere	10,300	4.3%
State $\neq$ RI, status=Active	21,100	8.9%

\* Includes a small number of children with status=Blocked

\*\*Rounded to nearest 100

# What other information might help us know – did they stay or did they go?

- Primary care provider in Rhode Island (95% with RI address have an RI PCP)
  - Families and PCP do not always tell RICAIR when they leave
- Recently vaccinated
  - Need to be cautious so as not to remove unvaccinated children from the denominator
- Included in recent insurer enrollment file (90% with RI address were in an insurance file)
  - Major insurers, including all Medicaid managed care insurers, send enrollment data to KIDSNET for children
- Enrolled in a Rhode Island School

# Reasons datasets might not reflect reality when used alone:



	Inaccurately reflects child <i>is</i> in RI	Inaccurately reflects child <i>is not</i> in RI
Current state=RI	Left state, address not updated	Moved back to RI, address not updated
		Moved to RI, no vaccinations yet
Status Active	Left state, address not updated, status not updated to Lives out of RI	Moved back to RI, new address not provided
PCP	Left state, retained RI PCP	RI resident with out of state PCP
	Left PCP, pt panel not updated	
Insurance	On insurance file after moving out of state (pandemic policy to retain Medicaid enrollees)	RI resident with non-reporting insurance plan
	On insurance file when not eligible	Not on insurance file when eligible
School Enrollment	Non-resident in RI private school	Child in nonreporting RI private school, home schooled, or dropped out
		no KN ID (moved into RI, no vax yet)

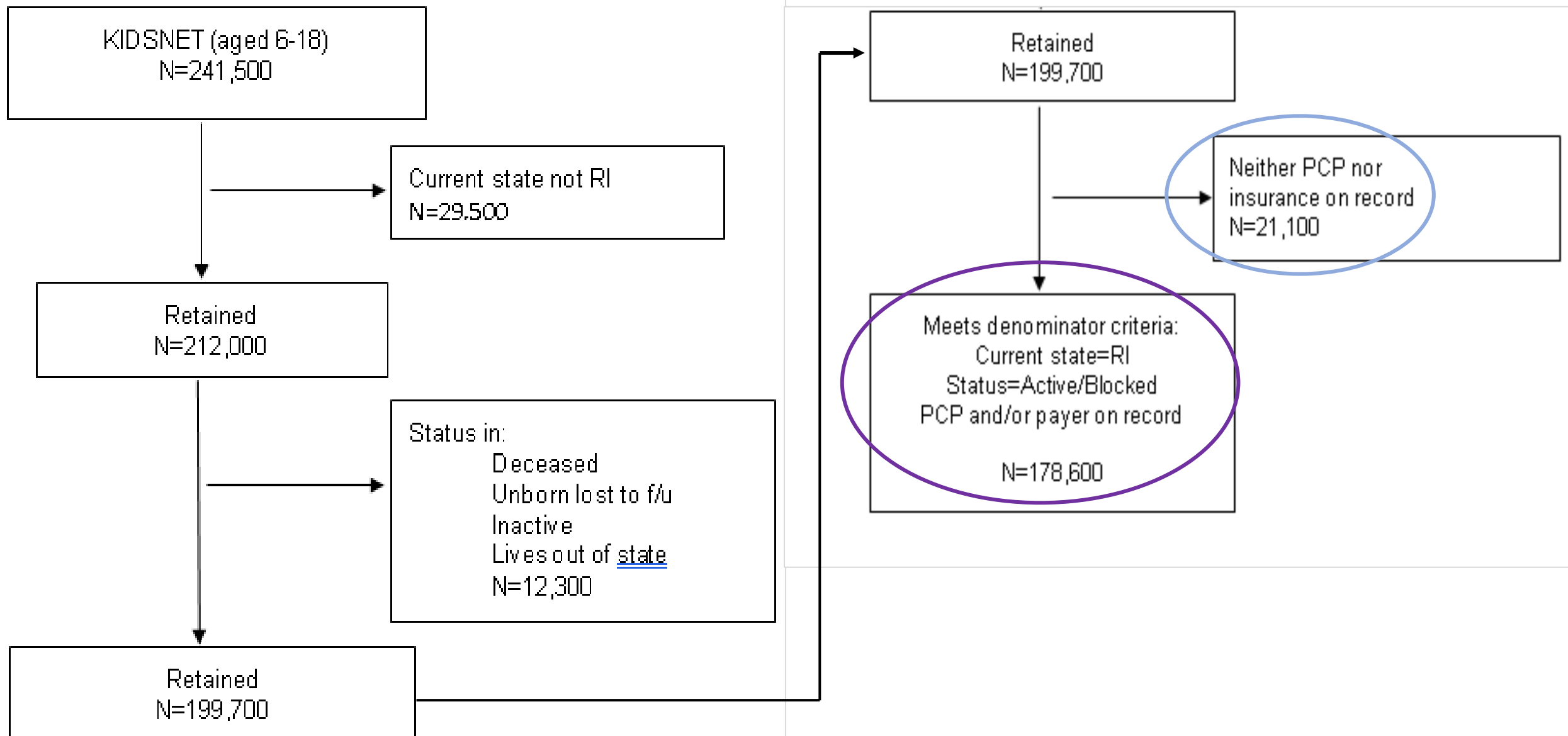
# Which children (ages 6-18) should we remove to get closer to census estimate?



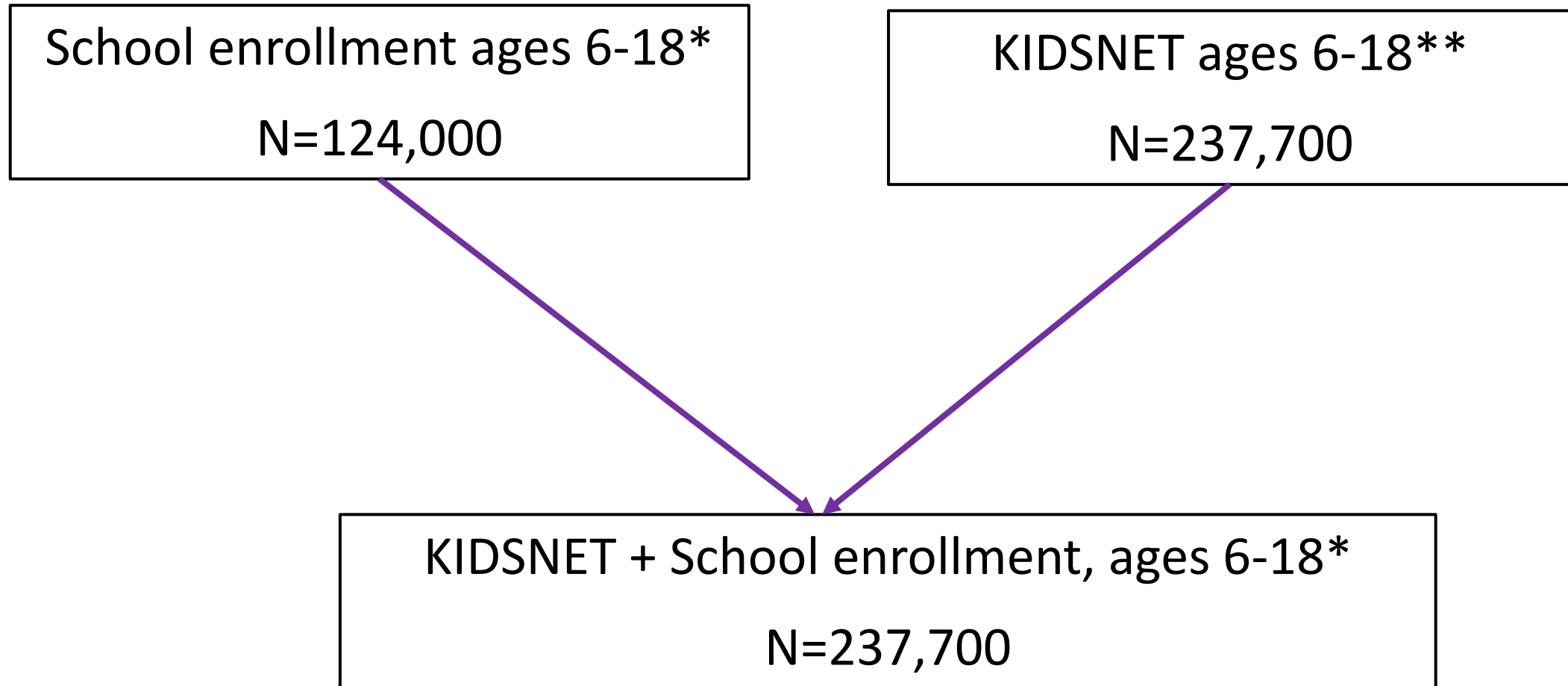
Census estimate	156,300	
State=RI + Active status	199,700	too high
State=RI + Active status + pcp OR insurer	178,600	still too high
State=RI + Active status + pcp AND insurer	132,900	too low
In school enrollment file	128,000	way too low

This is what we often use

# KIDSNET denominator (N=178,000)



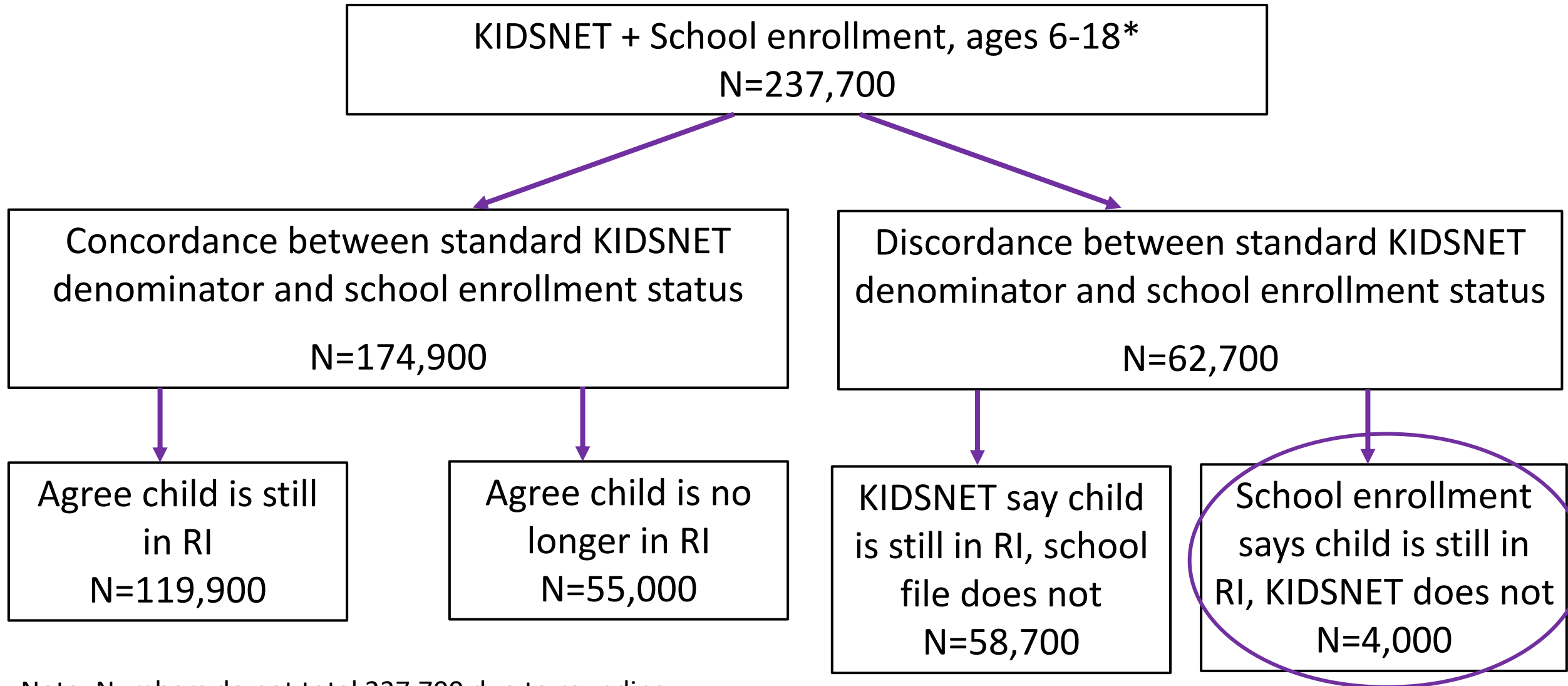
# Combined KIDSNET and School Enrollment



\*Excludes children without a KIDSNET ID

\*\*Excludes deceased, unborn lost to follow-up, inactive

# KIDSNET and school enrollment: concordance and disagreements



Note: Numbers do not total 237,700 due to rounding

# Effect of including school enrollment data on rates



	Number and percent with any vaccines due before 1/1/23 (over a year ago)	
<b>Original KIDSNET denominator technique</b>	<b>60,500</b>	<b>33.9%</b>
High confidence live in RI (KIDSNET and school data agree)	26,000	21.7%
High confidence live in RI (school file says they live in RI even though KIDSNET does not)	2,400	59.8%
<b>Revised estimate when school enrollment data inform determination of denominator</b>	<b>28,400</b>	<b>22.9%</b>



# Adjusted odds ratios for having any vaccines due over a year ago



	Adjusted odds* (95% CI) of vaccine(s) due before 1/1/2023
KIDSNET and school file agree child is in RI	REF
KIDSNET says child is in RI but school file does not*	4.4 (4.3-4.5)
School file says child is in RI but KIDSNET does not	4.5 (4.2-4.8)

\*Adjusted for age and in-state birth

\* Excludes 4000 children without a KIDSNET ID

# Conclusions

- Combining IIS with school enrollment data can:
  - improve the accuracy of immunization rates
  - Can identify a small number of children at higher-risk of being unvaccinated who otherwise might have been assumed to have moved out of state
- School enrollment data also strengthens partnerships with school nurses and makes reports available by school and school district
  - This was very helpful during the pandemic response