





School Enrollment and IIS Denominators: Confirmation or Contradiction?

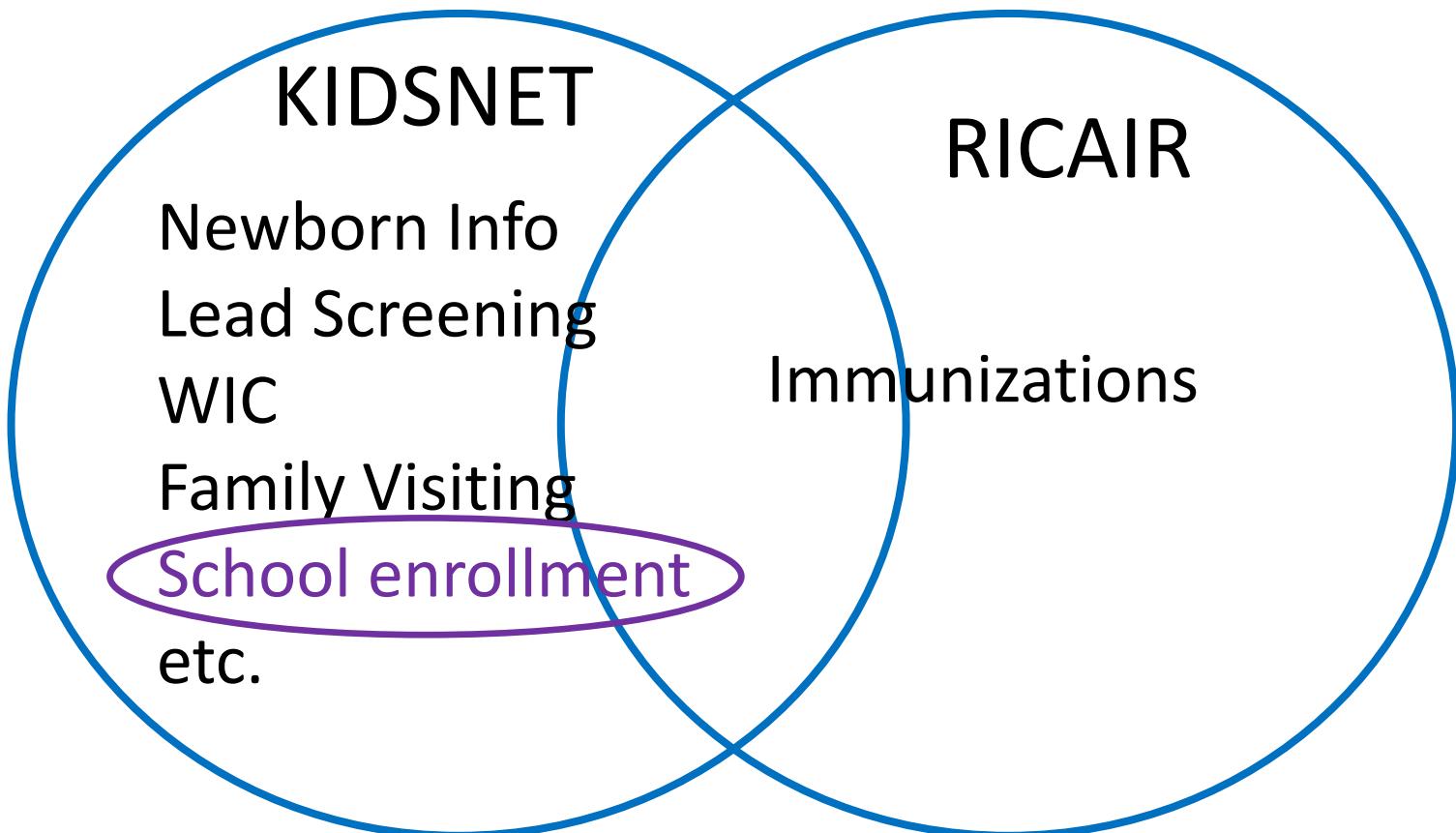
May 7, 2024

**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)



The ideal:	State = RI	State ≠ RI
Status = Active*	100%	0%
Status = Lives out of RI	0%	100%
The reality:	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 ≠ 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 Left PCP, pt panel not updated	RI resident with out of state PCP
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)

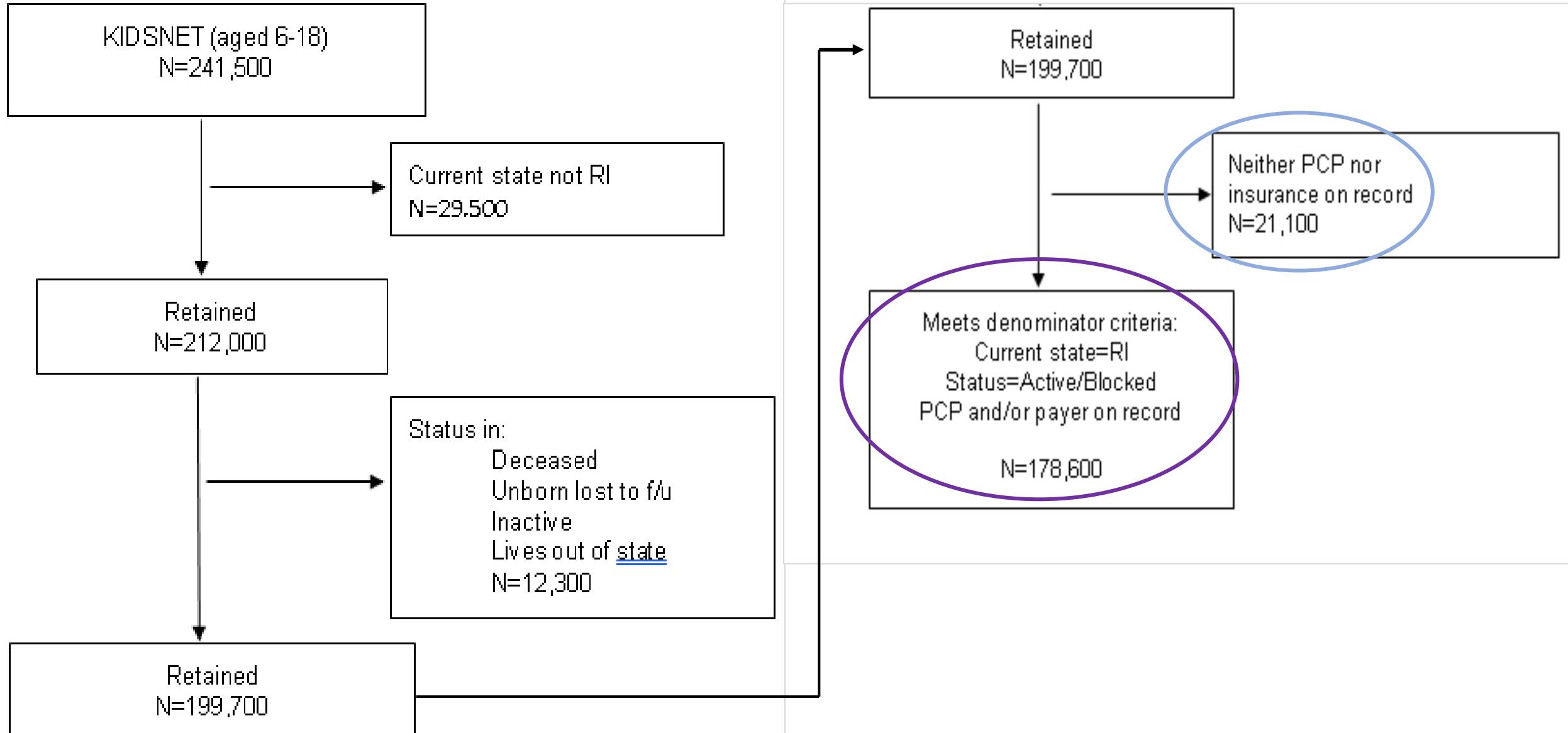
Which children (ages 6-18) should we remove to get closer to census estimate?



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



School enrollment ages 6-18*

N=124,000

KIDSNET ages 6-18**

N=237,700

KIDSNET + School enrollment, ages 6-18*

N=237,700

*Excludes children without a KIDSNET ID

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

KIDSNET and school enrollment: concordance and disagreements



KIDSNET + School enrollment, ages 6-18*

N=237,700

Concordance between standard KIDSNET denominator and school enrollment status

N=174,900

Agree child is still in RI
N=119,900

Agree child is no longer in RI
N=55,000

Discordance between standard KIDSNET denominator and school enrollment status

N=62,700

KIDSNET say child is still in RI, school file does not
N=58,700

School enrollment says child is still in RI, KIDSNET does not
N=4,000

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)	
Original KIDSNET denominator technique	60,500	33.9%
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%
Revised estimate when school enrollment data inform determination of denominator	28,400	22.9%

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