



# **Development of a Vaccines For Children Data Quality Report Card**

**Assiatou Bah, MPH | August 15, 2018**

# Outline

- ❖ Background
- ❖ Developing the report card
- ❖ What we learned and improved
- ❖ Report card future

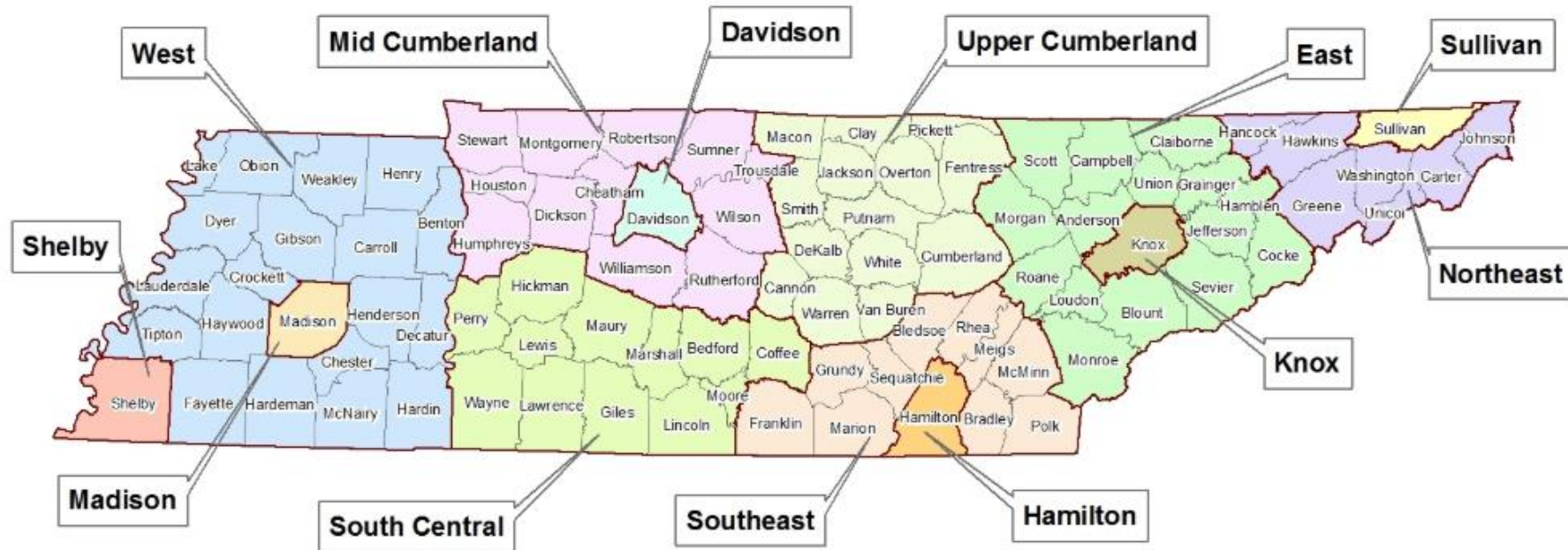


# TennIIS



# Tennessee VFC Program

- About 500 private provider sites
- About 130 health department sites
- Regional Immunization Representatives (RIR)



# VFC Program Reporting Requirement

**As of January 1, 2017, all VFC providers are required to record in TennIS every vaccine administered to all patients under 19 years of age, regardless of VFC status, within two weeks of administration date.**



# VFC Program Reporting Requirement



...evaluate?

...track?

...communicate?

...enforce?



# Developing the Report Card

# Developing the Report Card

STEP 1: Research if a solution already exists

STEP 2: Series of brainstorming sessions with:

- VFC Enrollment Team
- VFC Quality Team
- Vaccine Ordering and Management System (VOMS)
- TennIIS Registration Team
- TennIIS Clinical Team
- Immunization Program Leadership:
  - Director, Manager, TennIIS Manager, CDC Public Health Advisor

STEP 3: Write code and figure out distribution logistics

STEP 4: Pilot cards with VFC providers and RIR



## Vaccines for Children TennIS Report Card - PILOT EDITION

VFC FACILITY NAME, PIN 000000

2018 Quarter 2: April 01 - June 30



### VFC Provider Site Information

Primary Contact: First Last Name, first.last@facility.org  
Secondary Contact: First Last Name, first.last@facility.org  
Facility Contact: First Last Name, first.last@facility.org  
Lead Medical Contact: First Last Name, first.last@facility.org

VFC Provider Agreement Renewal Deadline: 01/01/2019  
IIS Reporting Method: Electronic Message Transfer  
Site Type: Private - Group HMO

### Quantity & Quality of Vaccine Records

1,000 vaccine doses administered at this site were reported to TennIS during this 3-month period.

How they were entered:

- 750 (75%) were sent by your Electronic Health Record System (EHR)
- 250 (25%) were entered by a user at your facility through the TennIS website

Completeness of vaccine information (target = 100%)

- 1,000 (100%) Included VFC eligibility status
- 1,000 (100%) Included lot number
- 900 (90%) Included manufacturer

Please note this report card only evaluates vaccinations **entered** or **added as administered doses** by your facility.

### Patient Profile & Vaccine Coverage Rates

VFC enrollment patient profile (self-reported):

- 10,000 total patients under 19 years of age
- 7,500 of total are VFC eligible

Looks wrong? Contact us to update your patient profile.

Patients under 19 years linked to this site ("owned") in TennIS\*:

- 10,000

Key vaccination coverage rates for your patients in TennIS:

- 1 or more **influenza** vaccine since July 1, 2017:  
9500/9500(100%) of patients 6 months and up (target: 70%)
- HPV** vaccine aged 12 through 18 years:
  - At least one dose: 5000/5000(100%)
  - Complete: 4000/5000(80%) (target: 80%)
- 4<sup>th</sup> DTaP**: 900/1000(90%) of 12-24 month-olds (target: 90%)

\*TennIS automatically assigns a person to your site after you report administering a vaccine to the person. This is called "ownership."

### VFC Program TennIS Reporting Compliance

The VFC Program requires that each vaccine administered to patients under 19 years, regardless of VFC status, be reported to TennIS within two weeks of administration.

During this 3-month period:

- VOMS inventory reconciliation indicated 750 dose(s) of VFC vaccines were administered. *This number will not equal the doses reported on patient TennIS records.*
- Patient TennIS records: 750 VFC vaccines reported  
*VFC eligibility is based on the reported vaccine information*
- 1,000 (100%) of all vaccines reported were submitted within two weeks of administration

### Contact Us & Helpful Information

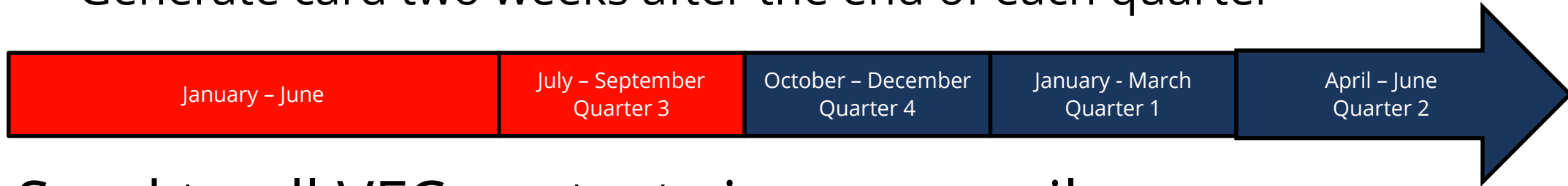
- Contact your EHR Vendor regarding your electronic submissions. If they cannot resolve the issue please contact [TennIS.MU@tn.gov](mailto:TennIS.MU@tn.gov) and put "VFC Report Card" in the subject.
- [VFC.Enrollment@tn.gov](mailto:VFC.Enrollment@tn.gov) regarding provider agreement contacts and enrollment numbers.
- [TennIS.Training@tn.gov](mailto:TennIS.Training@tn.gov) to learn how to run reports in TennIS to track your progress.
- Tennessee Immunization Program phone (800) 342-1813

Sites experiencing difficulties with reporting may be contacted by VFC Program staff to offer assistance.



# Distributing the Report Card

- Quarterly starting with Q3 of 2017
  - Generate card two weeks after the end of each quarter



- Send to all VFC contacts in one email
- Post Excel spreadsheets and PDFs with RIR on Sharepoint

# Provider and Site Information

## VFC Provider Site Information

Primary Contact: **Jane Doe, jane@doe.org**  
Secondary Contact: **Julie Doe, julie@doe.org**  
Facility Contact: **Jessica Doe, jessica@doe.org**  
Lead Medical Contact: **Judith Doe, judith@doe.org**  
VFC Provider Agreement Renewal Deadline: **04/01/2019**  
IIS Reporting Method: **Direct Data Entry** Site Type: **Private - Group HMO**

---

# Quantity and Quality of Records

## Quantity & Quality of Vaccine Records

**1,000** vaccine doses administered at this site were reported to TennHIS during this 3-month period.

How they were entered:

- **750 (75%)** were sent by your Electronic Health Record System (EHR)
- **250 (25%)** were entered by a user at your facility through the TennHIS website

Completeness of vaccine information (target = 100%)

- **1,000 (100%)** included VFC eligibility status
- **1,000 (100%)** included lot number
- **900 (90%)** included manufacturer

*Please note this report card only evaluates vaccinations **entered** or **added as administered doses** by your facility.*



# Patient Profile and Coverage Rates

## Patient Profile & Vaccine Coverage Rates

VFC enrollment patient profile (self-reported):

- **10,000** total patients under 19 years of age
- **7,500** of total are VFC eligible

*Looks wrong? Contact us to update your patient profile.*

Patients under 19 years linked to this site ("owned") in TennIIS\*.

- **10,000**

Key vaccination coverage rates for your patients in TennIIS:

- 1 or more **influenza** vaccine since July 1, 2017:  
**9500/9500(100%)** of patients 6 months and up (target: 70%)
- **HPV** vaccine aged 12 through 18 years:
  - At least one dose: **5000/5000(100%)**
  - Complete: **4000/5000(80%)** (target: 80%)
- **4<sup>th</sup> DTaP: 900/1000(90%)** of 12-24 month-olds (target: 90%)

*\*TennIIS automatically assigns a person to your site after you report administering a vaccine to the person. This is called "ownership."*

# VFC Reporting Compliance

## VFC Program TennIIS Reporting Compliance

The VFC Program requires that each vaccine administered to patients under 19 years, regardless of VFC status, be reported to TennIIS within two weeks of administration.

During this 3-month period:

- VOMS inventory reconciliation indicated **750** dose(s) of VFC vaccines were administered. *This number will not equal the doses reported on patient TennIIS records.*
- Patient TennIIS records: **750** VFC vaccines reported  
*VFC eligibility is based on the reported vaccine information*
- **1,000 (100%)** of all vaccines reported were submitted within two weeks of administration

# Additional Information

## Contact Us & Helpful Information

- Contact your EHR Vendor regarding your electronic submissions. If they cannot resolve the issue please contact [TennIIS.MU@tn.gov](mailto:TennIIS.MU@tn.gov) and put “VFC Report Card” in the subject.
- [VFC.Enrollment@tn.gov](mailto:VFC.Enrollment@tn.gov) regarding provider agreement contacts and enrollment numbers.
- [TennIIS.Training@tn.gov](mailto:TennIIS.Training@tn.gov) to learn how to run reports in TennIIS to track your progress.
- Tennessee Immunization Program phone (800) 342-1813

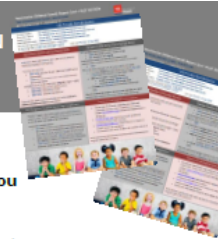
Sites experiencing difficulties with reporting may be contacted by VFC Program staff to offer assistance.

# Interpretation Card

## Vaccines for Children TennNIS Report Card - INTERPRETATION

FACILITY NAME, PIN

2018 Quarter 2: April 1, June 30



VFC providers are required to record in TennNIS every vaccine dose administered to patients <19 years of age, regardless of VFC status, within two weeks of administration. This report is intended to help you understand how to interpret your VFC Report Card numbers.

For the past quarter, we compared the number of vaccine doses reconciled as administered in VOMS and the number of vaccine doses reported in TennNIS as administered at your facility to a VFC eligible patient:

According to VOMS, it appears your facility has been using significantly more VFC doses than have been reported as administered on TennNIS patient records. Please review and adjust your workflow to ensure your practice staff or EHR is submitting all doses administered as required. Also check the number of historical records being reported (see below). Contact your regional immunization representative with questions or if there is anything we can do to help.

For the past quarter, we calculated the percentage of doses your facility reported to TennNIS within two weeks of administration:

It appears fewer than 80% of your shots were entered within two weeks of administration. Missing vaccines can result in unnecessary extra doses. Please review and adjust your workflow to ensure your practice staff or EHR is submitting all doses administered promptly. Contact your regional immunization representative with questions or if there is anything we can do to help.

### Information about two other important vaccine data quality measures:

#### Proportion of Historical Doses

Sometimes a person enters vaccines they actually administered as "historical" records. More than 20% of vaccines reported by your facility in TennNIS were recorded as historical. If your VOMS reconciliation numbers show the facility has given significantly more doses than patient TennNIS records indicate, someone may be reporting administered doses as historical ones. Inform staff and adjust practices as needed. Your regional immunization representative or TennNIS Help can assist you as needed.

#### VFC/ Private Vaccine Eligibility Field

Fewer than 90% of vaccines administered in TennNIS have the VFC eligibility field populated. If you are an Electronic Trading Partner, talk to your EHR vendor to see if they are submitting this information. If you enter vaccine records through the website, please remind staff to complete the vaccination eligibility field when entering data into TennNIS.



# Quick Reference Guide for Providers

## Tennessee Immunization Information System (TennIIS) Quick Reference Guide VFC TennIIS Report Card: Running Your Own Reports

### What is included in this guide?

1. [Provider site information](#)
2. [How many administered vaccines were reported to TennIIS](#)
3. [How your vaccines were entered](#)
4. [Completeness of vaccine information](#)
5. [Patients under 19 owned by your site in TennIIS](#)
6. [VFC vaccines reported based on VOMS reconciliation and decrementing](#)

### Who is this Quick Reference Guide for?

- This guide is meant for VFC providers who want to learn how to recreate the data generated from their quarterly VFC TennIIS Report Card.

### Disclaimer

- Note: some of the data in the VFC TennIIS Report Card (e.g. vaccine coverage rates) are not currently possible to replicate using canned reports in TennIIS. As functionality is added in TennIIS, this quick reference guide will be updated.

### Why do you care about running your own reports?

- Running your own reports allows you to continuously check on your data quality.
- While working on strategies to improve your data in TennIIS, you can see if they are effective by running your own reports.

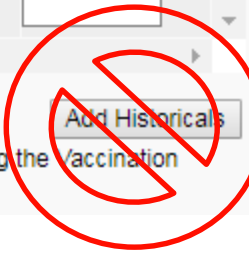
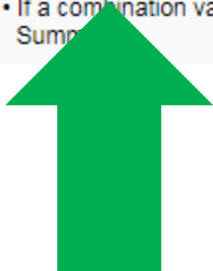


**What we learned and  
improved**

# Providers entering shots as historical

Tdap (Adacel® / Boostrix®)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
varicella (Varivax®)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
--select--	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

• If a combination vaccine is marked with a 'X', please verify which components of the vaccine are outside the ACIP schedule by viewing the Vaccination Summary



# Providers entering shots as historical

**JUL – SEPT 2017**  
**Quarter 3**

**APR – JUN 2018**  
**Quarter 2**

**More than 50%  
historical**

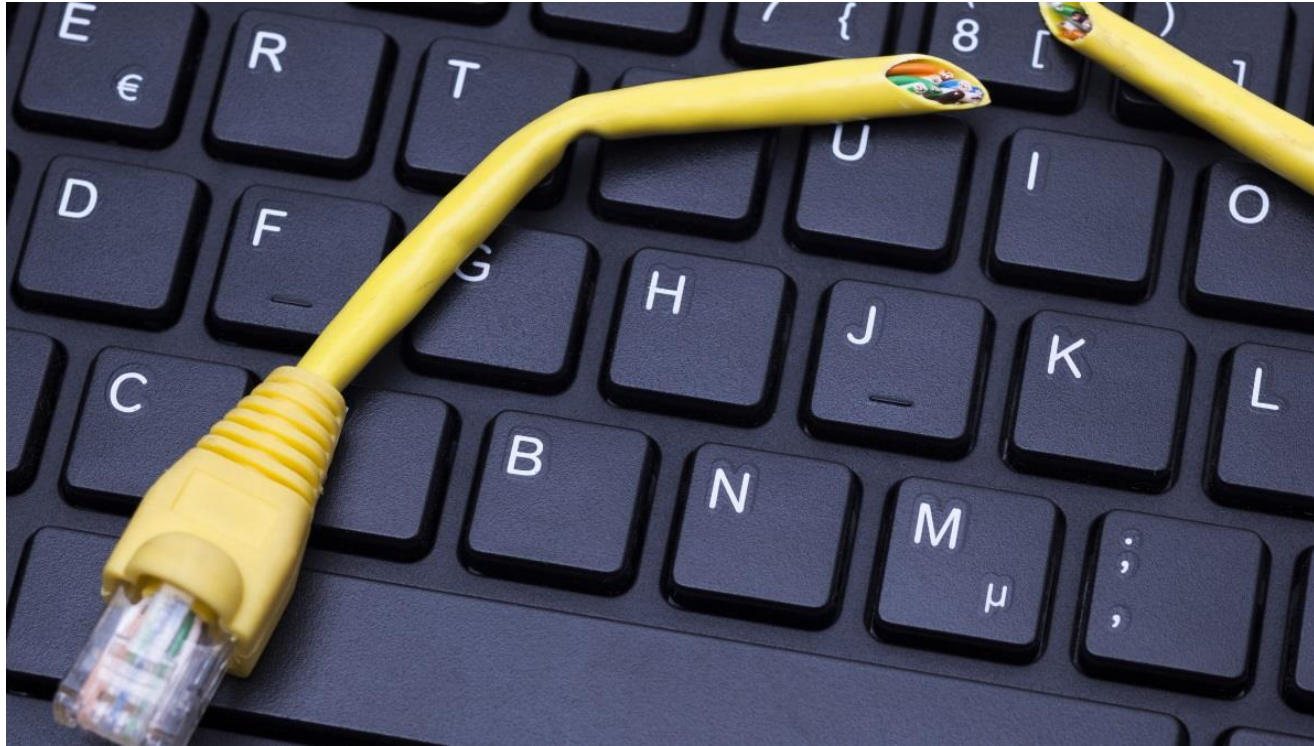
**98** → **55**

**100% historical**

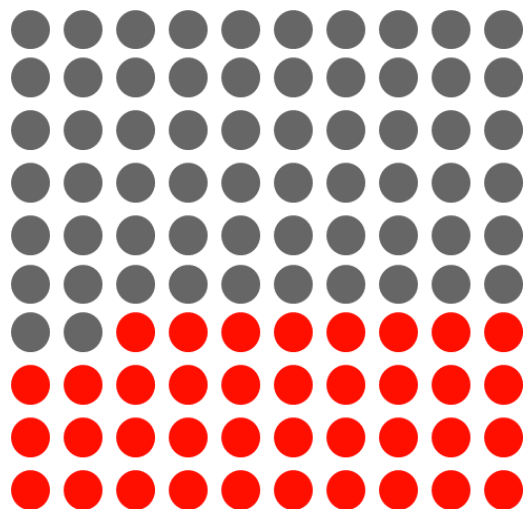
**49** → **15**



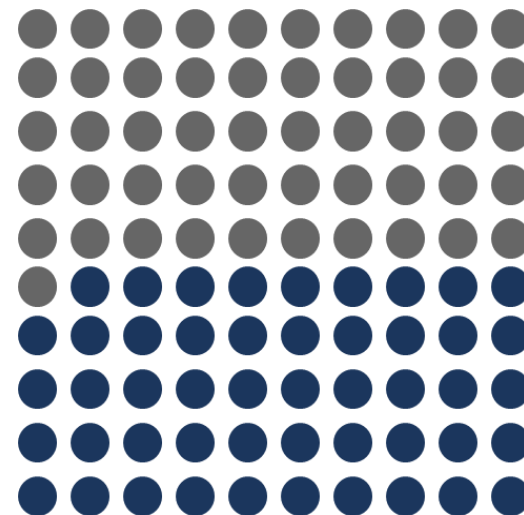
# EHR connection issues to TennHIS



# Increased number of EHR connections



**38%** of VFC providers submitted vaccinations from their EHR to TennIIS in **Quarter 3, 2017.**



**49%** of VFC providers submitted vaccinations from their EHR to TennIIS in **Quarter 2, 2018.**

# Increased number of EHR connections

50

Providers transitioned from **direct data entry** through the website in Quarter 3, 2017 to successful **electronic data transfer** to TennHIS in Quarter 2, 2018

# Correcting provider demographics

- Helpful in syncing active VFC provider spreadsheets
- Alerts enrollment team of provider contact changes
- Staff attempts to correct each email bounce back
  - 50 of 1,543 unique emails for the most recent report card



# RIRs

- Print report card and review at compliance visits
- Report card helps identify which providers are struggling
- Advocates for providers
  - Helped identify historical vs. administered issue
  - Invited on calls with clinic staff, EHRs vendors, and TennIIS HL7 team to resolve connection issues

# Providers

Some providers

# REALLY CARE

about their data in TennIIS.

Just need the tools to understand the system and to take ownership of their data.



**Report card future**

# Improving TennIS for providers

- Adding lot numbers on non-VFC vaccinations for direct entry
- Positioning of Add Historical versus Add Administered vaccines

The screenshot shows a vaccine entry form. It includes a table with vaccine components and their lot numbers. The components listed are Tdap (Adacel® / Boostrix®) and varicella (Varivax®). Below the table are two buttons: 'Add Administered' and 'Add Historicals'. A large orange double-headed arrow is positioned between these two buttons, indicating a choice or comparison between the two actions.

Tdap (Adacel® / Boostrix®)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
varicella (Varivax®)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
--select--	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

• If a combination vaccine is marked with a 'X', please verify which components of the vaccine are outside the ACIP schedule by viewing the Vaccination Summary .

# Future versions of Report Card

- + Looking back on past Quarter?
  - + Observe seasonality patterns
  - + Tableau dashboard
- + Adding wasted vaccine counts

# Improve provider follow up and tracking

- Develop REDCap solution for provider follow up
- Train RIRs and providers on priority data quality concerns and how to use TennHIS report to track progress



# Conclusion

The VFC Report Card is a very useful, low-cost quality improvement tool.

- Providers understand their data by “seeing what we see”
- Pushes TN toward more accurate facility-level coverage assessment
- Empowers RIRs to guide/help their providers in TennIIS
- Improves our data quality, contact information and our knowledge of how our IIS is being used



# Thank You!

Assiatou Bah, MPH

Assiatou.Bah@tn.gov

615-253-4088