



DataSpeak

**Vitally Important: Improving the
Timeliness of Vital Statistics to
Advance MCH**

April 30, 2015

Today's Presenters

- **Patricia W. Potrzebowski, PhD**, Executive Director of the National Association for Public Health Statistics and Information Systems, will present on the importance and need for improving timeliness of vital records data. Dr. Potrzebowski will review a number of efforts underway to make vital statistics more current and thus more useful for public health program purposes.
- **Glenn Copeland, MBA**, State Registrar for the Michigan Department of Community Health, will present a summary of the work being done to provide more timely data on infant mortality in Michigan in order to better inform programs working to improve outcomes, with a focus on the Collaborative Improvement & Innovation Network (COIIN) to Reduce Infant Mortality.
- **John Paulson**, Data Center Supervisor at the Bureau of Vital Statistics, Ohio Department of Health, will discuss how Ohio compiles, augments, and uses the data in its public health data warehouse with a focus on using the State and Territorial Exchange of Vital Events (STEVE) System.

Previous Events

2014

- Effects of the Built Environment on Maternal and Child Health

2013

- Measuring the Return on Investment in Maternal and Child Health Programs
- Findings from the 2011-2012 National Survey of Children's Health
- From Theory to Data to Practice – Practical Applications of the Life Course Approach

Vital for a Reason

#Vital4AReason

Patricia W. Potrzebowski, Ph.D.
Executive Director

NAPHSIS

Protecting Personal Identity
Promoting Public Health



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Vital Records Represent People: Permanent Legal Records of Life Events

Birth

Death

Fetal Death

Marriage

Divorce



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Major Uses of Vital Records

Legal/administrative

Public health statistics



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Vital Records Improvements Require Resources

**MORE
BETTER
FASTER**

*Strategies for Improving the
Timeliness of Vital Statistics*

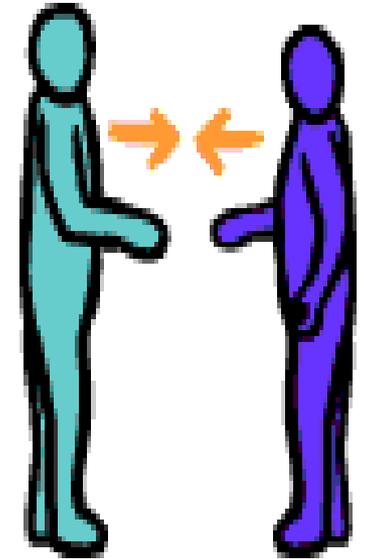
**NAPHSIS
APRIL 2013**



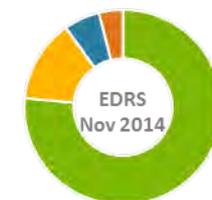
- Access to data (More)
STEVE
- Data quality (Better)
Feedback to data sources
Training data providers
- Timeliness (Faster)
Fully electronic systems
Physician adoption of
EDRS
Provisional vital statistics

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Introducing STEVE



- State and Territorial Exchange of Vital Events
- Point-to-Point messaging system
- All 50 states, DC, NYC, and 4 of 5 territories
- Secure exchange of vital records between jurisdictions and to NCHS
- Offers “mailboxes” for data partners to receive files



IN PRODUCTION (45)

IN DEVELOPMENT (3)

**PLANNING/
REQUIREMENTS STAGE (1)**

**USING STEVE-ER FOR DEATH
DATA ENTRY (2)**

CDC Surveillance Strategy

Performance Objective:

By 2016, 80% of death reports occurring in at least 25 states will be transmitted electronically to public health within 1 day of registration and to CDC/NCHS (i.e., cause of death) within 10 days of the event.



Provisional Infant Death Data

Recent Experiences and Accomplishments in Michigan

Glenn Copeland, State Registrar and Director
Division for Vital Records and Health Statistics
Michigan Department of Health and Human Services

Michigan's Status Quo in 2013

- Files finalized in June
- Statistics developed and released in August
- Timeliness took several hits
 - Vital records forms revisions
 - Debugging new birth and death systems
 - Automated systems initially trapped data
- Files and data release pushed into fall
 - 9 months from year end
 - Birth cohort infant death files delayed as well
 - trailed out to 20 months from birth year.

Impetus for Change

- Governor's score cards
 - Using national estimates based on projections
 - Strong interest in more timely data
 - Key health priority
 - Infant mortality reduction/disparity reduction
- CoIIN
 - HRSA funds to support comprehensive efforts
 - Builds on multiple public and private investments
 - Expects timely data on progress
 - MCH program sees as key opportunity
 - Addresses program goals and compliments Michigan approach

Measures Sought by COIIN

COIIN-Wide Aims

Decrease Infant Mortality Rate

Decrease Neonatal Mortality Rate

Decrease Postneonatal Mortality Rate

Decrease Preterm-related mortality rate

Decrease SUID mortality rate

Decrease Preterm birth

Data source: Provisional state vital statistics data reported quarterly (rolling averages)

What does timely data look like?

- Minimal needs
 - Rapid estimates of infant mortality
 - numbers and rates
 - Data by county/local health department
 - Need information by race/ethnicity
- Additional information
 - Information on birth characteristics
 - Birth weight, gestational age, prenatal care, maternal age
 - Requires linked birth and death files
 - Cause of death information

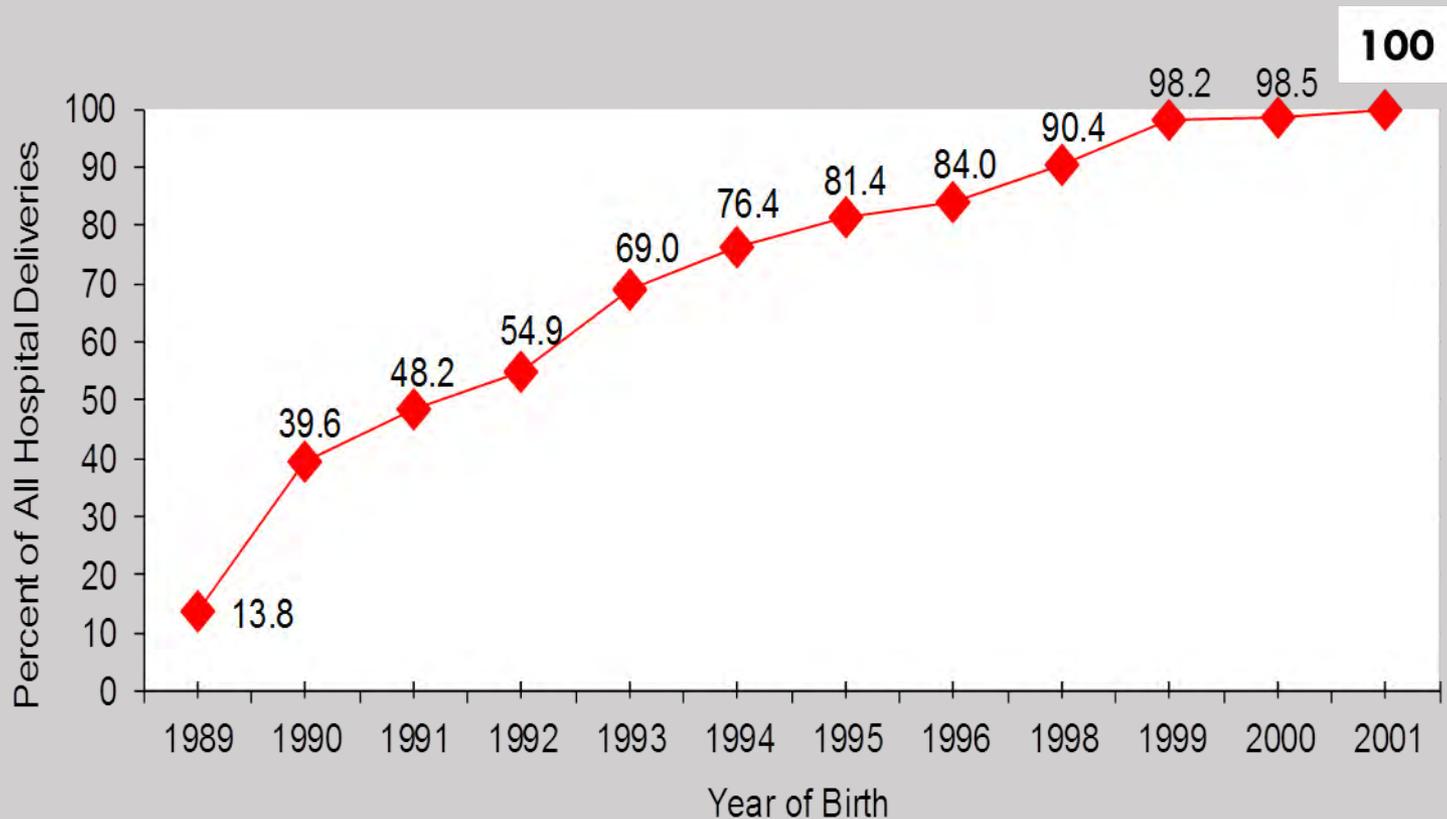
Existing Barriers

- Delays associated with paper filings
- Inability to extract death data from new EDR
 - Delays birth/death matching
 - Slows location of infant deaths
- Lack of timely interstate exchange
 - STEVE implementation is pending
- Problems with cause of death
 - Assignment errors and delays through NCHS

How to Get from *Here* to There

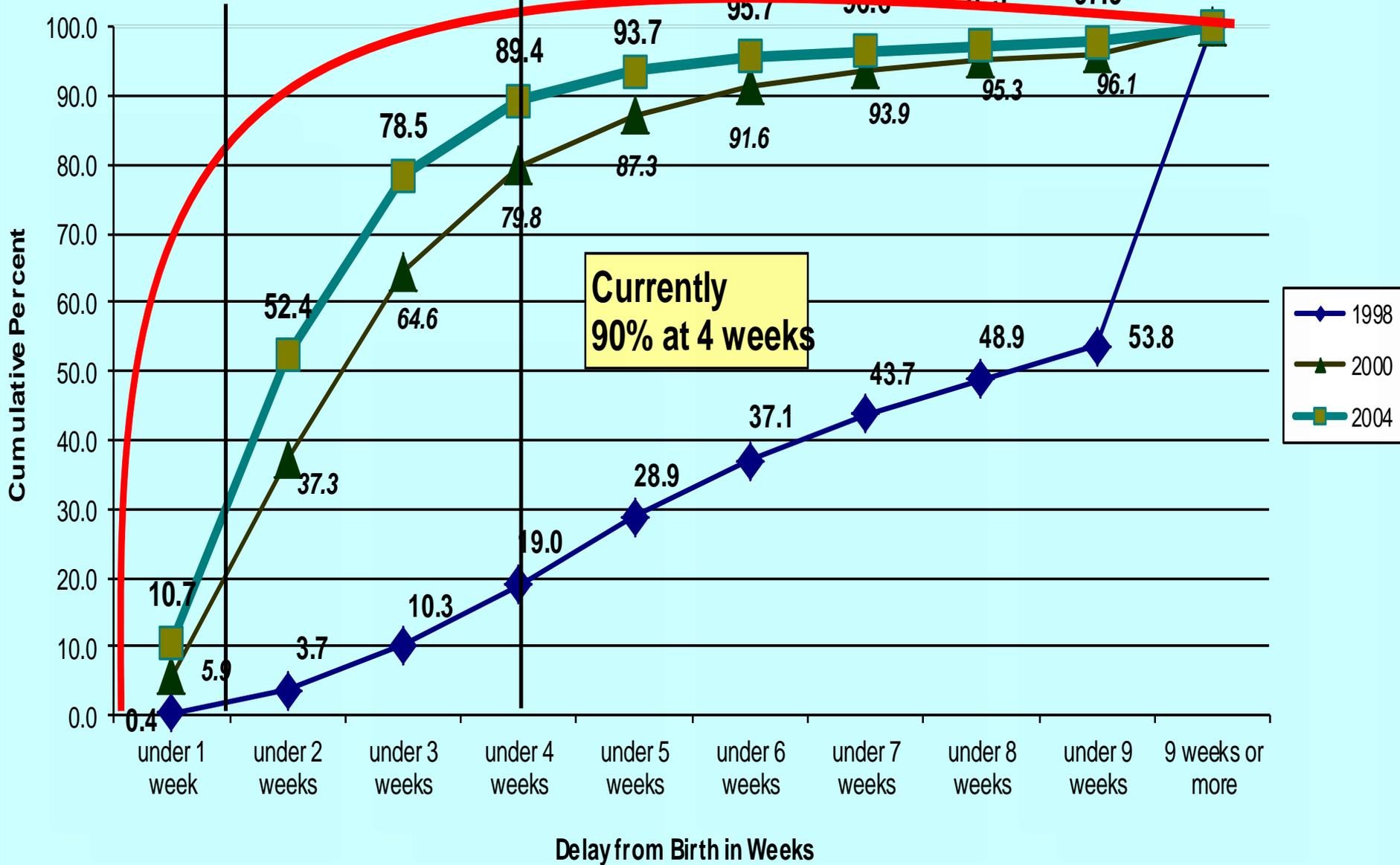
- Birth system is very reliable and timely
 - Files nearly complete within 60 days
 - Data very clean
 - Lacking only out of state resident deliveries
- SUID Surveillance
 - Already manually locating all infant deaths
- EDR continues to accelerate data
 - Reducing paper filings
- Trained nosologist on staff

Percent of Michigan Hospital Births Reported Electronically by Birth Year

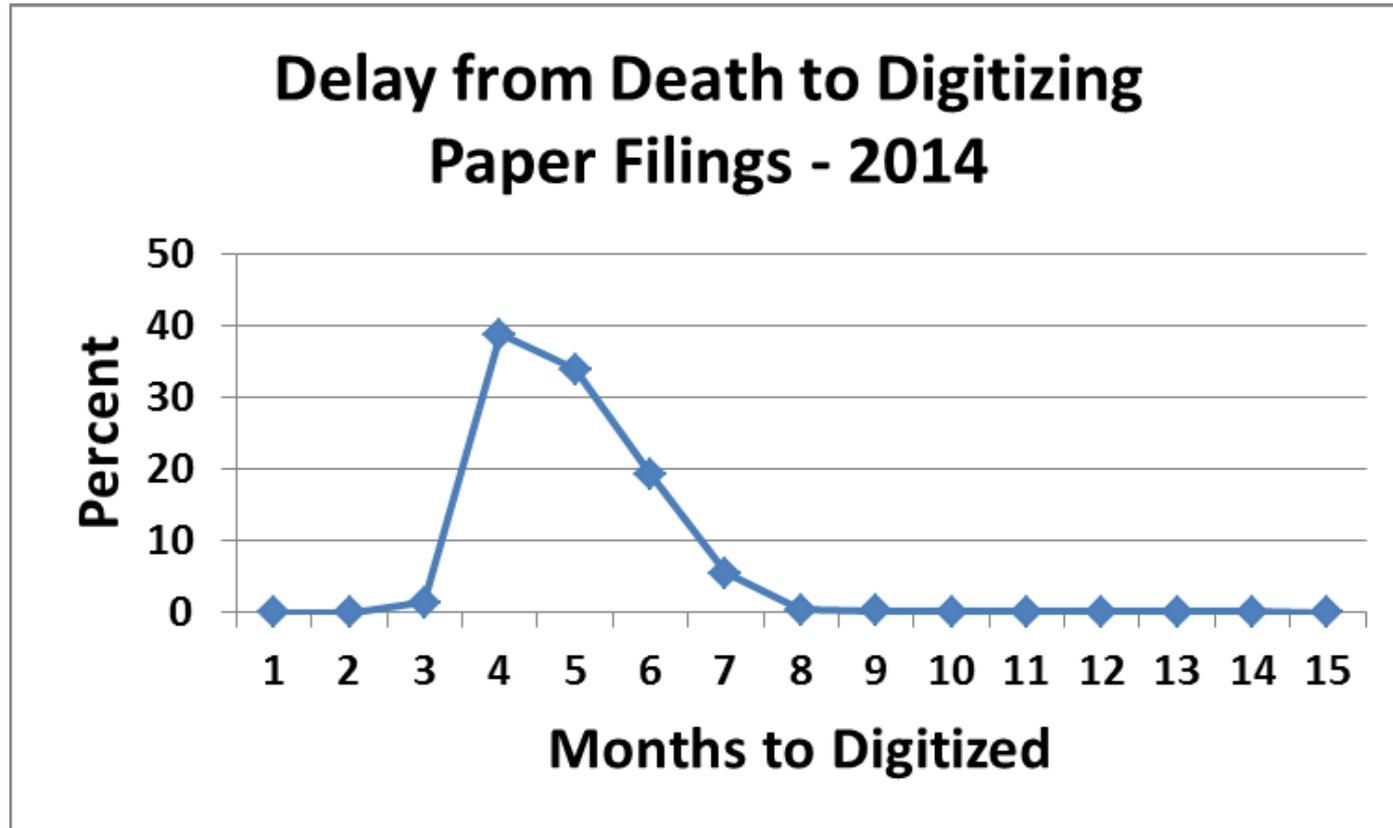


Potential for 80% in 7 days

Timeline to Birth Data Availability by Birth Year



Death data timeliness graph



Average Timeliness in Days Paper vs. EDR

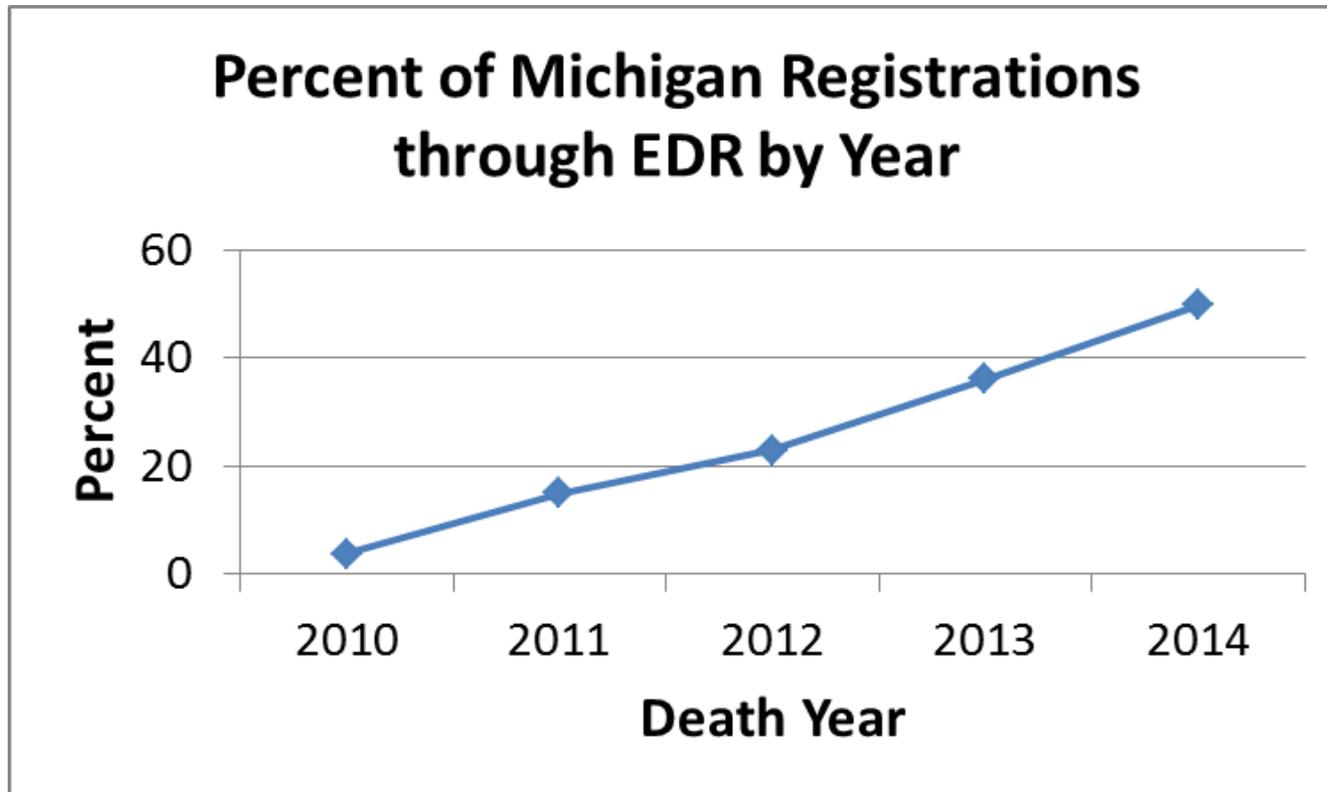
2013

- Paper – 178 days
- EDR – 6.1 days

2013

- Paper – 134 days
- EDR – 5.9 days

Death system use graph



Approach

- Leverage birth data
 - Estimate out of state resident delivery numbers
 - Use prior year(s) data
 - Get denominator data in 70 days by county
- Use brute force on infant deaths
 - Route infant deaths for manual coding/keying
 - Capture subset of death data to meet specific needs
 - Add manually coded cause of death
 - Estimate out of state resident deaths
 - Use prior year(s) data

Status

- State/County infant mortality rates for 2013
 - Released in April 2014
 - Released data through March 2014 in June
 - *Significant issues* with first attempt
 - Planning to develop a time series approach
 - Predict completeness more accurately
 - Identify irregularities more easily
- 2014 Data release in 2 weeks

Aims going forward

- Preparing for quarterly release of fresh data
 - Data would be out at 90 day intervals
 - Plan to provide 12 month cumulative figures
 - State and county level data
- Plan to provide more detail at 120 days
 - Birth characteristics for the death cohort
 - Death characteristics data
 - Age at death numbers and rates
 - Rates by birth weight/prematurity
 - Cause of death – focus on key conditions

Summary

- You don't need a final file
 - If you can just focus
 - Isolate what pieces of information are critical
 - Don't need to wait on the last variable in the last record
 - You can provide decision support much sooner
 - Leverage what you have in place as best you can
 - Introduces error and a grain of salt
 - Much more valuable to be close than to be precise
- Potential for greater efficiencies are there

Vitally Important: Improving the Timeliness of Vital Statistics to Advance MCH: Ohio

April 30, 2015

John Paulson

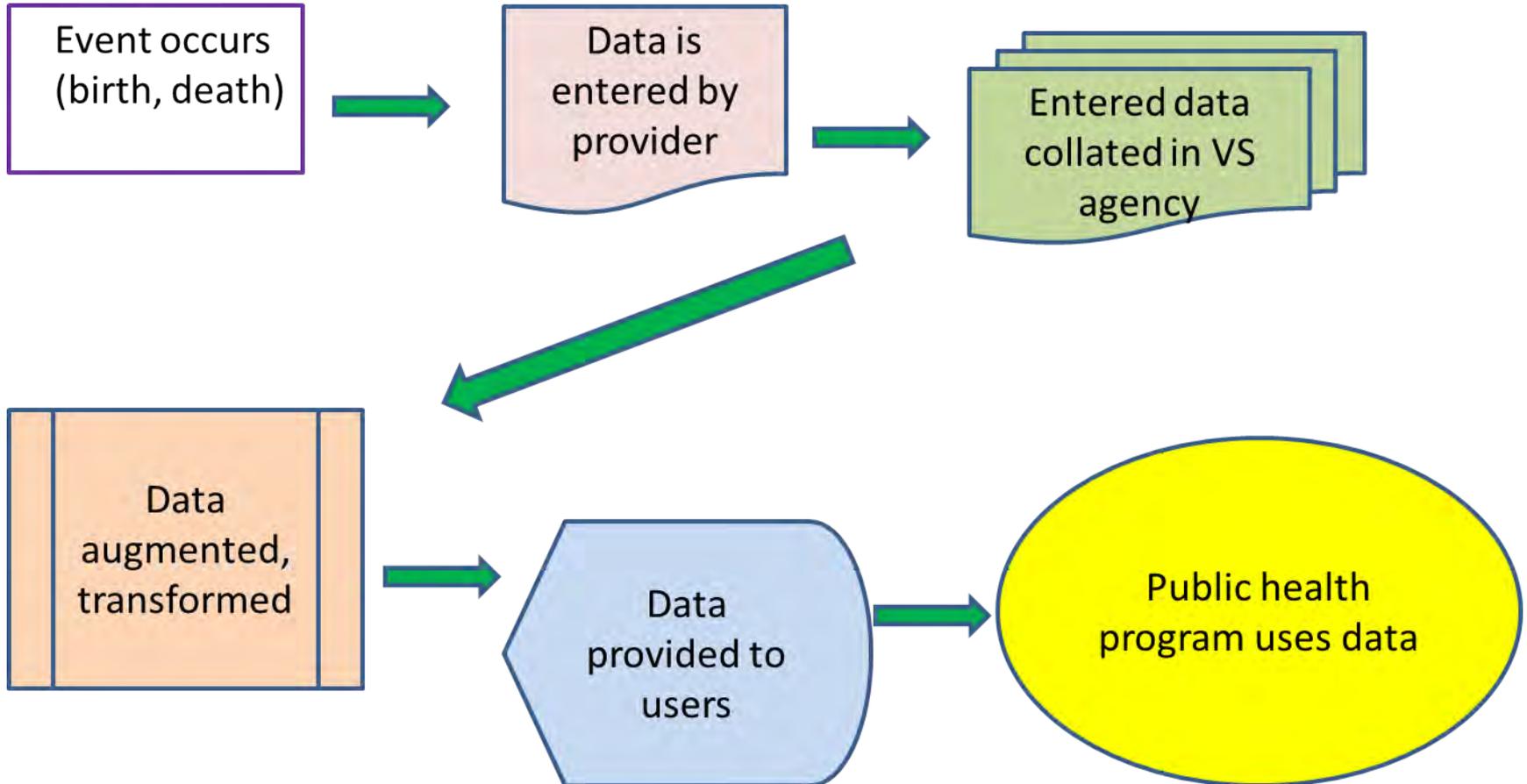
Ohio Department of Health
Bureau of Vital Statistics



Objectives

- Brief overview of VS data collection system in Ohio
- Explain how Ohio collates VS data and transforms it into useful public health data
- Describe our data warehouse where we display and disseminate the VS data to public health and other users

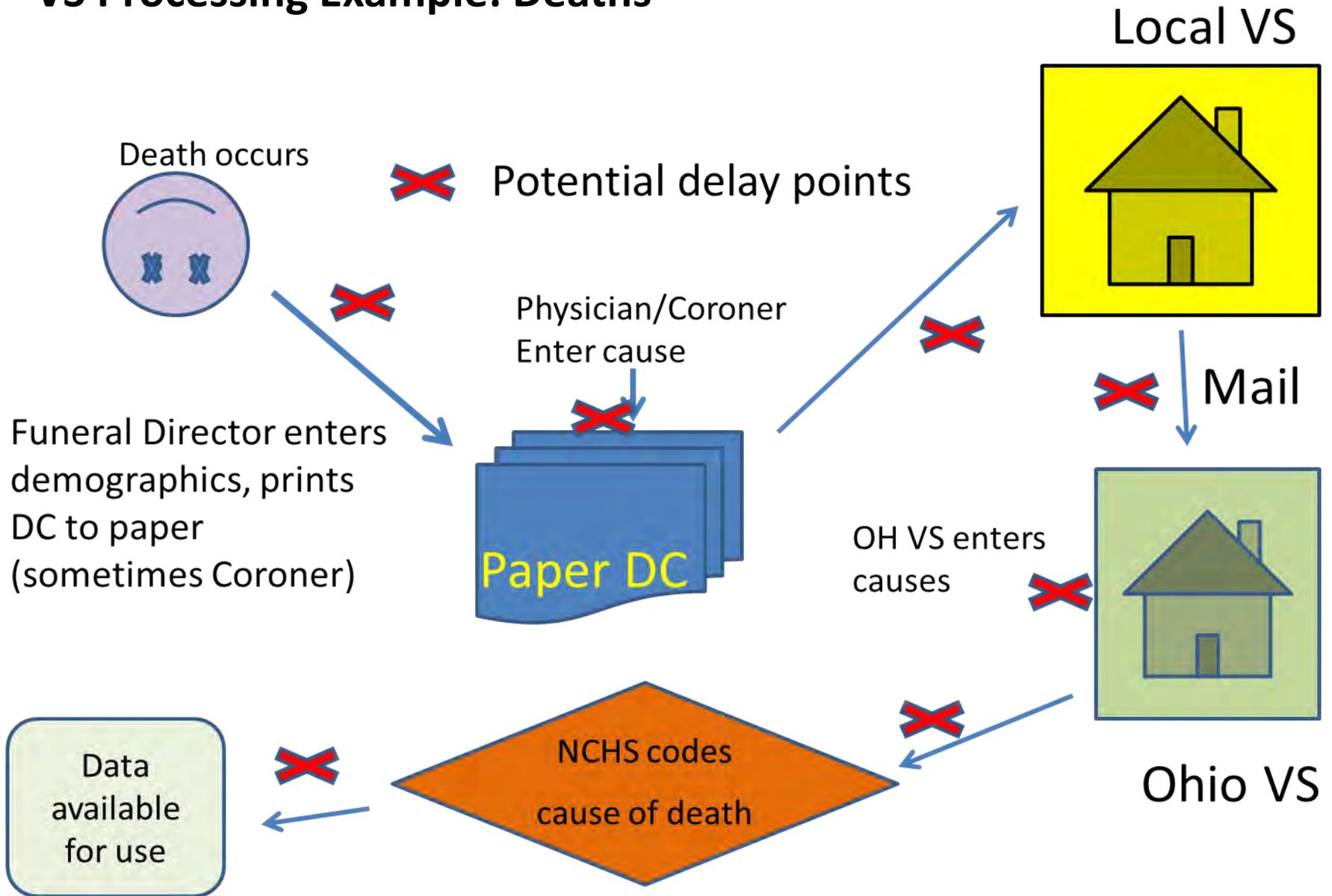
VS Data Flow: From Event to Use



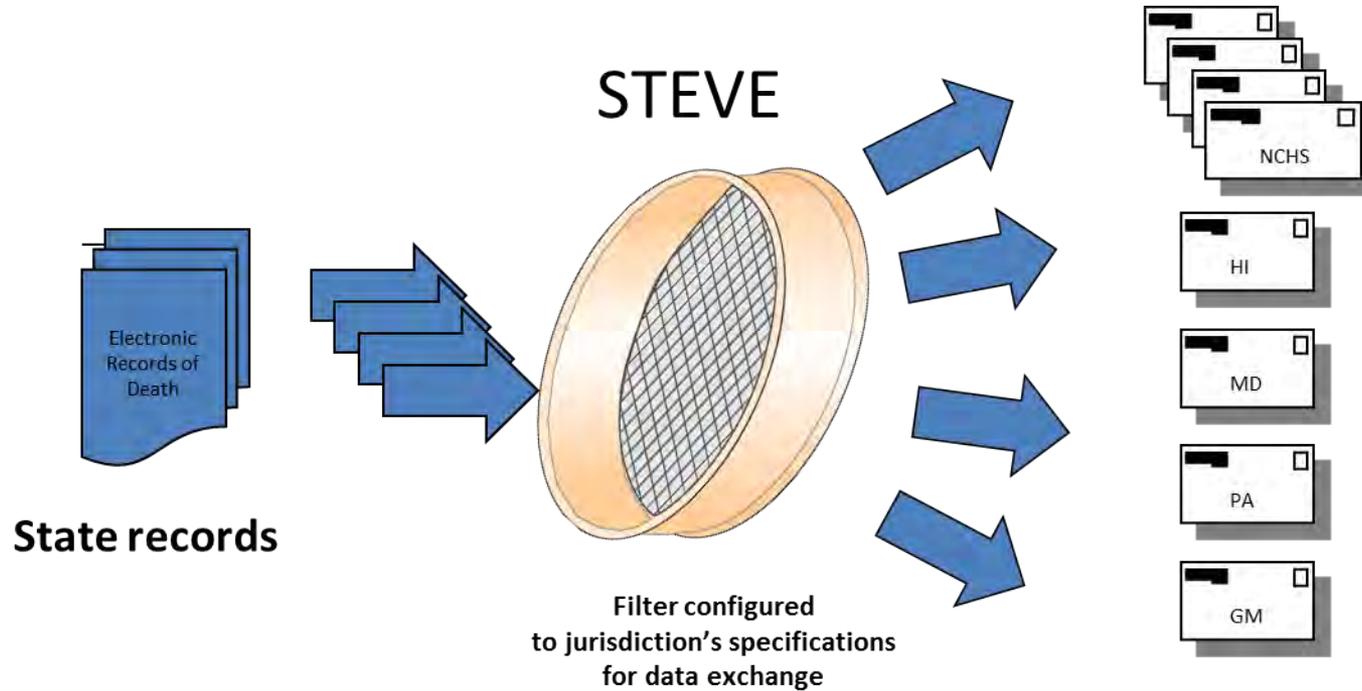
VS event to public health time lags

Type of event	Faster	Slower
Births occurring in OH	Quickest to completion	
Deaths occurring in OH		Several paper processes Wait for cause of death codes
Fetal deaths occurring in OH		Completely via paper copy Wait for cause of death codes
OH resident events that occurred outside OH	States who are sending data via STEVE	States not yet on STEVE

VS Processing Example: Deaths



States can share resident VS records with other states via STEVE



STEVE dissemination of VS data to public health programs

- Child Health Registries/Surveillance
- Infant/Child Death Reviews
- Child Support Enforcement
- Healthy Start Programs
- Disease Registries
- State Eligibility Programs
- PRAMS
- NVDRS
- Voter Registration

Ohio Public Health Data Warehouse

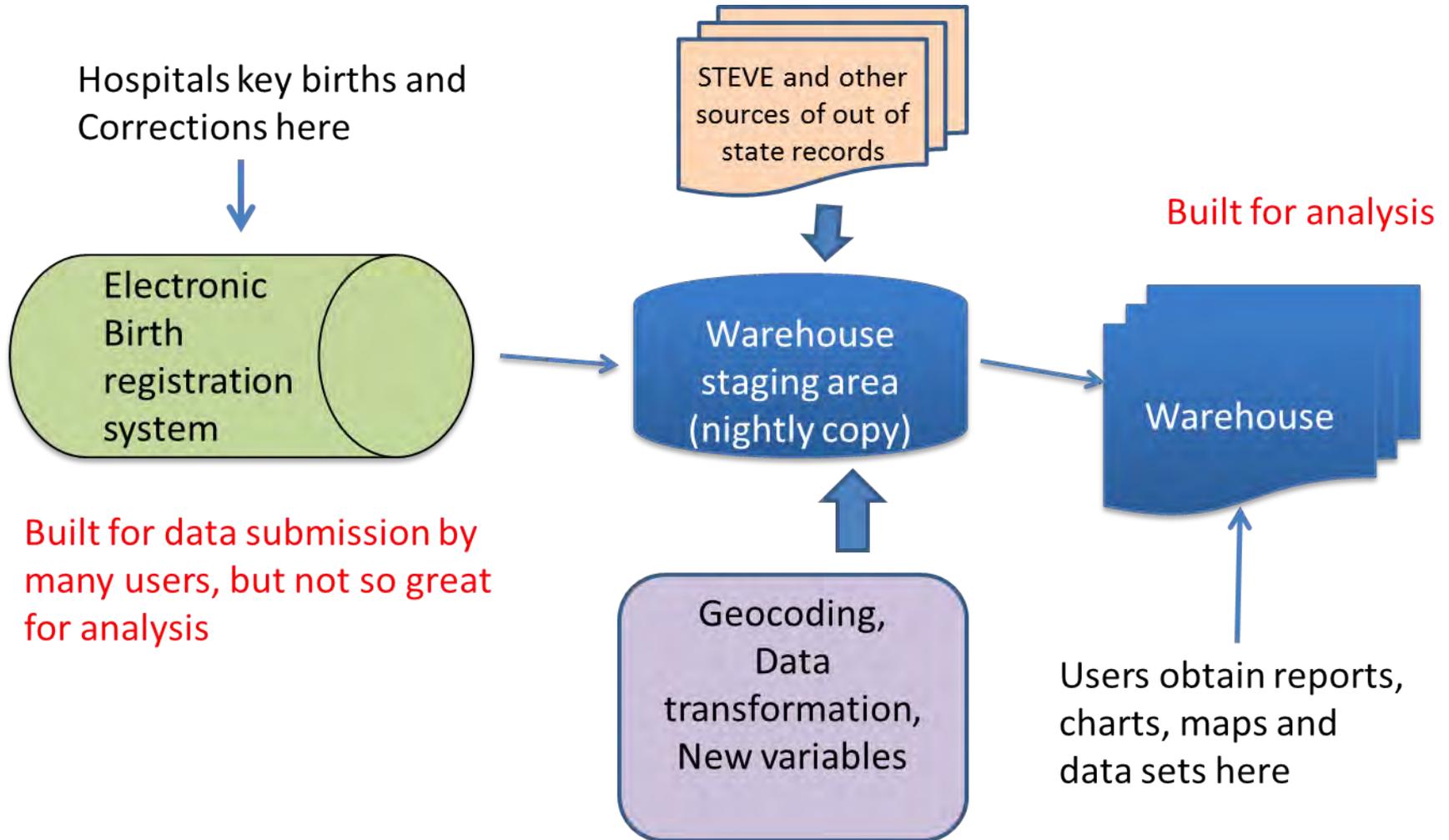
Why We Built it

- Our partners needed timely data delivered on demand (no wait)
- We needed to automate statistical file processing/delivery (free up staff time)
- We needed a stable single portal through which to disseminate health statistics

There are over 100 Ohio birthing hospitals



Data Warehouse Data Sourcing



Data Augmentations/Transformations: Examples

- Geocode residence, location of death, location of injury
- Supplement the very rich multi-race data with a single race view
- Group deaths into meaningful cause categories based on ICD-10 codes
- Augment with indicators: e.g., LBW/VLBW, Neonate/Postneonate, induced births w/o medical indications

Features of Ohio's Public Health Data Warehouse

- Public version (no authorization required)
- Secure version (requires user-specific authorization by data steward, and adherence to disclosure limitation policies)
- Development supported by various funds, including SSDI
- One warehouse for multiple public health datasets
 - Data stewards control access to each dataset
 - Cross-fertilization of datasets is possible (e.g., births + deaths to get infant mortality dataset)



Ohio Public Health Information Warehouse

The Ohio Public Health Information Warehouse application stores large volumes of public health data to support on-going activities such as surveillance, investigations, assessments, grant writing, and evaluations. The application improves the efficiency and quality of ODH's dissemination practices; facilitates the availability of "raw data extracts" and creates timely decision support and analytic tools (i.e geo-spatial, etc.).

Citation:

Please use the following citation in any publication or release which uses or references data from the Warehouse: *"These data were provided by the Ohio Department of Health. The Department specifically disclaims responsibility for any analyses, interpretations or conclusions".*

Data Sets:

Two types of data sets are available. Downloads are open-format data sets presented in CSV, XML or other downloadable formats. Interactive data sets can be manipulated on the web. You may search by keyword, category, data source and date published. New data sets are being added regularly.



Download



Interactive

Recently Published	
Mortality	5/5/2014
Behavioral Risk Factor Surveillance System (BRFSS) 2000-2012	12/19/2012
Cancer De-Identified Incidence Data (1996-2011)	1/18/2012
Cancer De-Identified Incidence Data (1996-Present)	1/18/2012

 Stay Updated

Select one or more filter criteria (optional) or browse the list of data feeds below. Choosing more than one filter criteria will result in an "AND" operator being applied to the search terms.

Category

- Birth Data
- Cancer Data
- Death Data
- Population
- Risk Factors

Data Source

- BRFSS
- Cancer
- Chronic Diseases
- Infectious Diseases
- Maternal & Child Health

Last Updated Date

From

To

Keywords

Data sets currently offered in secure warehouse

Birth Data BRFSS
 Cancer Data Cancer
 Death Data Chronic Diseases
 Population Infectious Diseases
 Risk Factors Maternal & Child Health
 Vital Statistics

Last Updated Date
 From: To:
Keywords

NAME	TYPE	CATEGORY	DATA SOURCE	LAST UPDATED
Ohio Occurrence Live Births (2012-Present) Ohio Occurrence Live Births (2012-Present)	 	Birth Data	Vital Statistics	02/02/2015
Ohio Resident Live Births (2006-Present) Ohio Resident Live Births (2006-present)	 	Birth Data	Vital Statistics	02/02/2015
Restricted Access Ohio Resident Live Births (2006-Present) Restricted Access Ohio Resident Live Births (2006-present)	 	Birth Data	Vital Statistics	02/02/2015
Cancer De-Identified Incidence Data (1996-2011) Official End of Year File	 	Cancer Data	Chronic Diseases	01/09/2014
Cancer De-Identified Incidence Data (1996-Present) Current Cancer Data as of Last Updated Date	 	Cancer Data	Chronic Diseases	12/05/2014
Cancer Identified Incidence Data (1996-2011) Official End of Year File	 	Cancer Data	Chronic Diseases	01/09/2014
Cancer Identified Incidence Data (1996-Present) Current Cancer Data as of Last Updated Date	 	Cancer Data	Chronic Diseases	12/05/2014
Mortality Ohio Resident Mortality Data (2007-2014)		Death Data	Vital Statistics	01/20/2015
Behavioral Risk Factor Surveillance System (BRFSS) 2000-2012 Behavioral Risk Factor Surveillance System (BRFSS) 2000-2012		Risk Factors	BRFSS	02/05/2014

 Items per Page:

Secure Ohio Public Health Information Warehouse
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Ohio Public Health Information Warehouse

Ohio.gov | Department of Health

Ohio Public Health Information Warehouse

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Ohio Resident Live Births (2006-Present)

Category: Birth Data
Latest Update: 2/2/2015
Description: Ohio Resident Live Births (2006-present)
Contact Email: John.Paulson@odh.ohio.gov

1.3 million birth records

Details | **Data View** | Map View | Charts / Graphs | Reports | Downloads

Functionality offered

Query Builder

Data Feed: [https://odhgateway.odh.ohio.gov/EDWS/Feeds/Birth/v1/BirthData/OhioLiveBirths?\\$filter=\(BirthYear eq 2015\)](https://odhgateway.odh.ohio.gov/EDWS/Feeds/Birth/v1/BirthData/OhioLiveBirths?$filter=(BirthYear eq 2015)) Export As: CSV Export

Birth Year	Birth Month	Residence County	Sex	Mother's Race Category	Mother's Ethnicity	Mothers Education	Mother's Age	Mother's Age Group	Birth Weight	OEI J
2015	01	Allen	Female	African American (Black)	Non-Hispanic	High School graduate or GED completed	40	40 to 44	496g	Other
2015	01	Greene	Male	White	Non-Hispanic	Master's degree	30	30 to 34	3359g	Other
2015	01	Lorain	Male	White	Non-Hispanic	Master's degree	31	30 to 34	3008g	Other
2015	01	Miami	Male	White	Non-Hispanic	Some college credit, but no degree	25	25 to 29	2806g	Other
2015	01	Cuyahoga	Male	White	Non-Hispanic	9th through 12th grade - no diploma	34	30 to 34	3130g	Clevel
2015	01	Stark	Female	White	Non-Hispanic	Some college credit, but no degree	30	30 to 34	3365g	Other
2015	01	Stark	Female	White	Non-Hispanic	Associate degree	24	20 to 24	3355g	Other
2015	01	Darke	Female	White	Non-Hispanic	High School graduate or GED completed	25	25 to 29	3230g	Other
2015	01	Morrow	Female	White	Non-Hispanic	Some college credit, but no degree	23	20 to 24	3374g	Other
2015	01	Richland	Male	White	Non-Hispanic	Some college credit, but no degree	28	25 to 29	4593g	Other
2015	01	Cuyahoga	Male	White	Non-Hispanic	High School graduate or GED completed	24	20 to 24	3560g	Clevel
2015	01	Cuyahoga	Male	African American (Black)	Hispanic	Some college credit, but no degree	30	30 to 34	3980g	Clevel

NOTE: Multiple comparisons between variables are always performed using the "AND" operator.

Use filters to narrow down data

Filters:

Birth Year [v] Equals [v] 2012 2013 2014 2015 [x]

Mother's Age Group [v] Equals [v] Unknown Less than 15 15 to 17 18 to 19 [x]

+ - Add an additional filter
x - Delete an existing filter

+
Filter

This query returns 133 births with mother's age of 15-17 So far in 2015

Data Feed: https://odhgateway.odh.ohio.gov/EDWS/Feeds/Birth/v1/BirthData/OhioLiveBirths?filter=(BirthYear eq 2015) and (MothersAgeGroupCode eq '2') Export As: CSV Export

Birth Year	Birth Month	Residence County	Sex	Mother's Race Category	Mother's Ethnicity	Mothers Education	Mother's Age	Mother's Age Group	Birth Weight	OEI Jurisdiction
2015	01	Trumbull	Female	African American (Black)	Non-Hispanic	9th through 12th grade - no diploma	17	15 to 17	485g	Other Ohio C
2015	01	Lucas	Male	White	Non-Hispanic	9th through 12th grade - no diploma	15	15 to 17	4321g	Toledo City
2015	01	Van Wert	Male	White	Non-Hispanic	9th through 12th grade - no diploma	15	15 to 17	3023g	Other Ohio C
2015	01	Hamilton	Male	White	Non-Hispanic	9th through 12th grade - no diploma	17	15 to 17	3949g	Other Ohio C
2015	01	Clark	Female	White	Non-Hispanic	9th through 12th grade - no diploma	17	15 to 17	3025g	Other Ohio C
2015	01	Jackson	Female	White	Non-Hispanic	9th through 12th grade - no diploma	16	15 to 17	4130g	Other Ohio C
2015	01	Hamilton	Male	African American (Black)	Non-Hispanic	9th through 12th grade - no diploma	17	15 to 17	3620g	Cincinnati C
2015	01	Erie	Female	White	Non-Hispanic	9th through 12th grade - no diploma	16	15 to 17	2750g	Other Ohio C

6 of 6 Go to Page: [] Go Items per Page: 25 Records Found: 133

Download .csv file



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Ohio Public Health Information Warehouse

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Ohio Resident Live Births (2006-Present)

Category: Birth Data
Latest Update: 4/19/2015
Description: Ohio Resident Live Births (2006-present)
Contact Email: John.Paulson@odh.ohio.gov

[Details](#)
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[Map View](#)
[Charts / Graphs](#)
[Reports](#)
[Downloads](#)



Query Builder

Data Feed: https://odhgateway.odh.ohio.gov/EDWS/Feeds/Birth/v1/BirthData/OhioLiveBirths

Export As: CSV Export

Birth Year	Birth Month	Residence County	Sex	Mother's Race Category	Mother's Ethnicity	Mothers Education	Mother's Age	Mother's Age Group	Birth Weight	OEI Jurisdiction
2006	01	Carroll	Male	White	Non-Hispanic	High School graduate or GED completed	27	25 to 29	2948g	Other
2006	01	Montgomery	Male	White	Non-Hispanic	Bachelor's degree	31	30 to 34	3070g	Other
2006	01	Montgomery	Male	White	Non-Hispanic	High School graduate or GED completed	27	25 to 29	2960g	Other
2006	01	Montgomery	Male	White	Non-Hispanic	High School graduate or GED completed	22	20 to 24	3005g	Dayto
2006	01	Montgomery	Male	White	Non-Hispanic	High School graduate or GED completed	35	35 to 39	3000g	Dayto
2006	01	Miami	Male	White	Non-Hispanic	High School graduate or GED completed	28	25 to 29	3015g	Other
2006	01	Montgomery	Female	White	Non-Hispanic	Some college credit, but no degree	32	30 to 34	2690g	Dayto
2006	01	Montgomery	Female	African American (Black)	Non-Hispanic	High School graduate or GED completed	21	20 to 24	3715g	Other
2006	01	Clark	Female	White	Non-Hispanic	Some college credit, but no degree	29	25 to 29	4160g	Other
2006	01	Montgomery	Male	White	Non-Hispanic	High School graduate or GED completed	22	20 to 24	3485g	Dayto
2006	01	Warren	Male	White	Non-Hispanic	High School graduate or GED completed	25	25 to 29	2620g	Other
2006	01	Jackson	Female	White	Non-Hispanic	High School graduate or GED completed	23	20 to 24	3374g	Other
2006	01	Stark	Female	African American (Black)	Non-Hispanic	Some college credit, but no degree	24	20 to 24	3827g	Canto
2006	01	Stark	Female	White	Non-Hispanic	Some college credit, but no degree	28	25 to 29	2968g	Other
2006	01	Montgomery	Female	African American (Black)	Non-Hispanic	Bachelor's degree	35	35 to 39	3525g	Other

Download Tab in Warehouse

https://odhgateway.odh.ohio.gov/EDIWS/DataBrowser/Browser/OhioLiveBirths Ohio Public Health Informa... x

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Ohio Resident Live Births (2006-Present)

Category: Birth Data
Latest Update: 2/2/2015
Description: Ohio Resident Live Births (2006-present)
Contact Email: John.Paulson@odh.ohio.gov

Details | Data View | Map View | Charts / Graphs | Reports | **Downloads**

Downloads...

- Documentation
- File Layouts
- Data Files

Birth Statistical File - 2006	Download
Birth Statistical File - 2007	Download
Birth Statistical File - 2008	Download
Birth Statistical File - 2009	Download
Birth Statistical File - 2010	Download
Birth Statistical File - 2011	Download
Birth Statistical File - 2012	Download
Birth Statistical File - 2013 (Preliminary)	Download
Birth Statistical File - 2014 (Preliminary)	Download
Birth Statistical File - 2015 (Preliminary)	Download

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Report Output

1 of 1 100% Find | Next

Custom Report

by Low Birth Weight, Year

Year	Low birth weight (<2500g)		Normal birth weight (2500g+)		Total	
	Birth Count	Birth Count %	Birth Count	Birth Count %	Birth Count	Birth Count %
2006	13,190	8.8	137,112	91.2	150,302	100.0
2007	13,167	8.7	137,400	91.3	150,567	100.0
2008	12,757	8.6	135,616	91.4	148,373	100.0
2009	12,330	8.5	132,055	91.5	144,385	100.0
2010	11,878	8.6	126,989	91.4	138,867	100.0
2011	11,855	8.6	125,499	91.4	137,354	100.0
2012	11,805	8.6	126,084	91.4	137,889	100.0
2013 **	11,590	8.5	124,761	91.5	136,351	100.0
2014 **	11,388	8.4	123,693	91.6	135,081	100.0
Total	109,960	8.6	1,169,209	91.4	1,279,169	100.0

Excludes 2326 Birth Count records with unknown/missing data.

** - Indicates preliminary data that may change.

Ohio Department of Health: Center for Public Health Statistics and Informatics

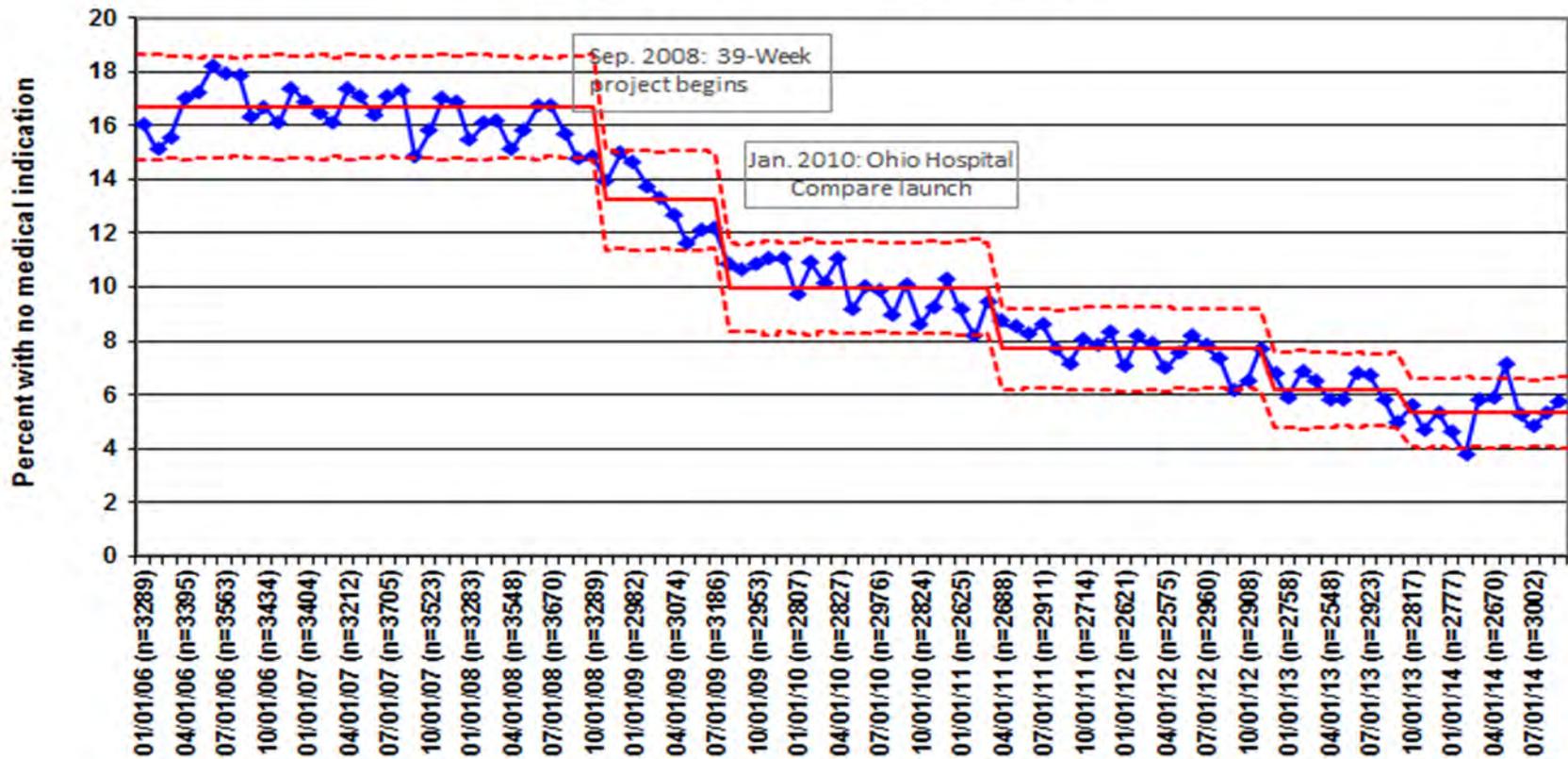
Report compiled in secure OPHIW on 2/2/2015 5:09 PM.

Re-release of tabulations disclosing identifiable birth data is prohibited.

Asterisk indicates data are preliminary

Example of birth data use: Ohio Perinatal Quality Collaborative

Births induced at 37-38 weeks with no apparent medical indication for early delivery, by month, 2006-2014
Aggregate of Ohio maternity hospitals



Source: Ohio Department of Health, Vital Statistics

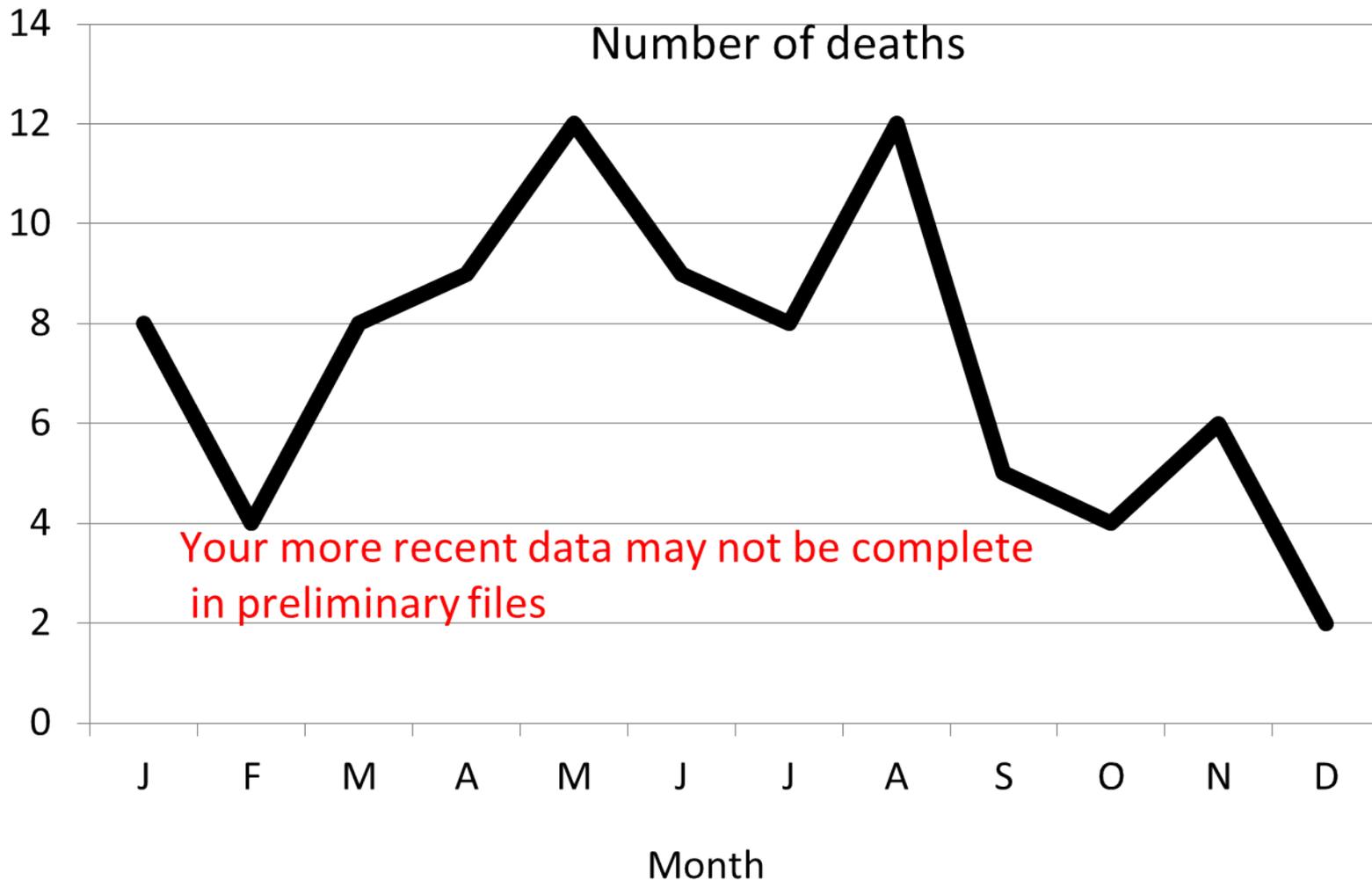
—●— Monthly Percent

— Baseline Average Percent

- - - Control Limits

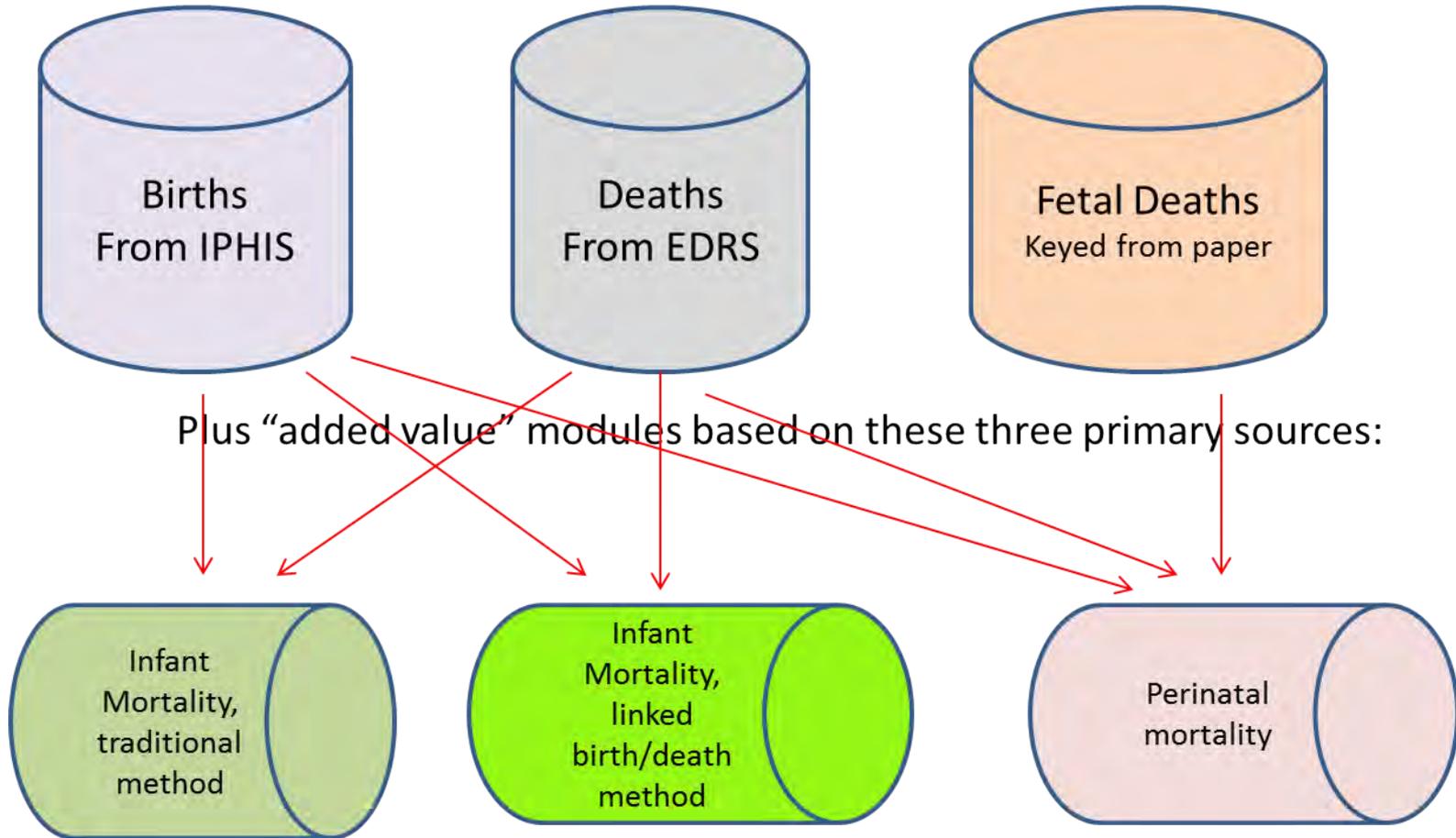
Unintentional Injury Deaths in Ohio Among 0 to 14-year-olds

Ohio Provisional 2014 VS Data



Vital Statistics Vision for OPHDW

A data warehouse containing three primary datasets:



Questions?

- John Paulson
- Ohio Department of Health
- Bureau of Vital Statistics
- John.paulson@odh.ohio.gov
- 614-644-8507

Thank You

**Please offer feedback on this
Vital Statistics DataSpeak program**

The link will open in a new window.

Additional questions?
dataspeak@altarum.org