Project Team: Data Utilization Project
Timeline: December 2014 – January 2015

SOLVE

1. Starting Point

(What is the need (e.g. outcome) or gap that caused this project to be considered in the first place? Who is establishing the need? How is the need being measured and is it possible for this project to make an impact on that measure? What data or analysis was used to establish that this project will make a key impact?)

Data is an important part of helping State and Local health departments achieve better health outcomes for their constituencies. Currently there appear to be gaps in the timeliness, accuracy, and usability of data provided to local health departments which hampers effectiveness in its use. Additionally, some do not have the infrastructure to manage available data. State departments also often have to provide significant labor to acquire, collate and screen data for accuracy.

Data defining need is currently unknown at this time. However, data is anecdotally characterized as the following:

- Not always accurate requiring additional scrubbing or being dismissed as inaccurate
- Long lead times from a local HD request for data to its receipt; often delayed, for instance some vital statistics may take a year prior to release for use.
- Inability to directly access data by the local HD
- Often lots of data, but it does not directly serve the department's needs. Some of the data is not broken down to the correct county or area, therefore HD is not able to confidently know and use the data provided.
- Reportable diseases data requirements vary from state to state.
- Data received in a format that makes it difficult for the local HD to analyze further and use either because of format or system incompatibilities.
- Common data terms & definitions tend to be fairly consistent within the state, but may vary from state to state.

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- A lack of clarity as to the types of data most needed for local HD decision making.

What scope (e.g. geographic, organization, customer) are you expected to impact?

Scope:

Start: Local health department registers the death record.

End: Statewide preliminary data available.

What conditions are being placed on this project? *(Leadership requirements or boundaries)*

- Comply with regulations.
- No IT investment.

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2. Vision (What do you want to achieve in the long range (i.e. 10 years) and without any restrictions? *Generate a picture or description of your ideal condition.* How will it look for the customers, our team, and for the taxpayers/funding sources?)

LPH has timely and accurate death data to make informed decisions and actions.

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3. Current State (Description of how the process and organization is operating now; Quantitative if possible, always factual and based on observation)

Stakeholder	Description	How do you know? (Data if available)
Customers	• There is a demand from Epidemiologists for more timely and accurate death data. • There is a lack of trust with existing data. • The data is not fully usable in the current format. It needs to be manipulated. • Lack of capacity to manage available data.	• Preliminary data is ~ 6 months old • NC Local HDs may not know data is available from the state
Financial	• Excessive labor hours to prepare and use the data (both state and LPH).	• # of certificates & books spread throughout the registration and data filing process
Kaizen Team	• Currently takes NC > 6 months after a death is registered to share the data with LPH.	• 2014 backlog

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4. Goal or Target Condition (What is the objective? Which piece of the gap are you addressing?)

TO: Improve the availability of timely identifiable death data from a state to local health departments.

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5. Customers and Beneficiaries (Who benefits from achieving the goal? What populations are targeted?)

FOR:

- State & Local health departments
  - EPIs
  - Program areas
  - Vital Records and vital statistics teams
- NCHS

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6. Benefit (What are the benefits from achieving the goal?)

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SO THAT:

- State and local HDs have data for surveillance, program planning and evaluation, making informed decisions, guiding programs, and ultimately improving health outcomes;
- Vital records and vital statistics tasks are more efficient and require less labor;
- State and local employee relationships are improved; and
- HDs benefit in meeting PHAB standards & accreditation.

7. Measures and Targets (STANDARDS (How will you measure success; Measure and Target? What quantitatively will be achieved?)

Beneficiaries	What Measured	How Measured	Target		
			How Much	By When	Actual
Process staff, LHDs	Cycle time	Number of days between the date of death registration and the date it is placed on the SFTP server.	From: 120-150 days To: <60 days	June 2015	Jan 15: 99 days May 1, 2015: 43 days - - **57% reduction**
Process staff, NCHS	Cycle time	Number of days between date of death registration and the date records are submitted to NCHS. *NOTE: 2014 introduced new & expanded death registration form*	From: 0% of data <= 25 days To: >= 80% of data <= 25 days	June 2015	Jan 15: 0%
Process staff, NCHS, LHDs	Units processed	Certificates registered	From: 1634 per week (est) To: 1750 per week	June 2015	Feb 21, 2015: 1466 May 21, 2015: 2729 - - **53% increase**
Process staff, LHDs	Data accuracy	Percent of counties receiving correction reports per mailing.	From: To:	June 2015	Trending

8. Conditions ((What process or team member requirements or limitations exist? What do you need to be successful?)

- Assure customer participation from the Kaizen state.
- Comply with data collection regulations/statutory requirements; HIPAA
- ***Comply*** with state law and not attempt to standardize legal requirements from state to state
- This improvement activity is in sync and does not interfere with other data improvement activities (e.g. PH informatics)
- Limited or no IT/system investment in this project.

9. Team Members and Roles (Who is directly involved and How? Training Needs?)

Name	Role	Project, QI skills
Eleanor Howell	Team Member/Process Owner	Flexible. Able to respond. Loves numbers. SAS programmer. Good at looking at larger picture, as well as details.
Stephanie Lenartz	QI Team Leader	QI/Kaizen facilitation, training and consultation skills. Experienced with performance measurement.

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Name	Role	Project, QI skills
Trish Potrzebowski	Team Member – National (NAPHSIS)	Good at connecting people.
Aurimar Ayala	Team Member – Local (AZ)	Good with problem solving. Brings local perspective, as well as NACCHO. Good at developing protocols & processes.
Steve Schwartz	Team Member – National (NY)	Former President of MAPHSIS. 22 yrs. experience in vital records. Brings national perspective.
Molly Crawford	Team Member – National (MN)	Good at asking clarifying questions. Good at communicating.
Tung Nguyen	Team Member – Local (CT)	Good EPI skills.
Tamma Hill	Field Services – NC	SME
Jeanette Hunter	VRIS – NC	SME
Janet Bell	Demographic Data Entry – NC	SME
Yolanda WIlliams	Demographic Data Entry - NC	SME
Vickie Pearce	Vital Records - NC	SME
Doris Salgado-Somo	Vital Records - NC	SME
Lisa Freeman	Coding - NC	SME
Sharon Montour	Medical Data Entry - NC	SME
Matt Avery	Vital Statistics - NC	SME
Toni Lawrence	Corrections - NC	SME
Sponsors: ASTHO; NAPHSIS; RWJF; NC Vital Records & Statistics		
SME's: Other state vital records offices; NCHS; NC NCHS: Karen Knight; NC IT people; Locals: in NC; Local registrars; Funeral homes		

10. Project Schedule (How will you achieve the result? What is the basic approach, activities to go about solving the problem?)

DATE	ACTIVITY/TASK/APPROACH
1-5-15	Focus the team. Understand the current process. Complete the current state map.
1-6-15	Go to the Gemba – observe the process. Prioritize issues by impact and frequency. Complete a root cause analysis.
1-7-15	Continue root cause analysis. Begin brainstorming solutions. Prioritize solutions by impact and speed & cost.
1-8-15	Review and discuss waste analysis on sub process map. Continue to develop solutions. Begin testing.
1-9-15	Create the new process. Develop job aids. Test the new process. Conduct Report Out. Finalize Action Items.
2-2-15	Implement new process.
Jan.- May 2015	Measure success.

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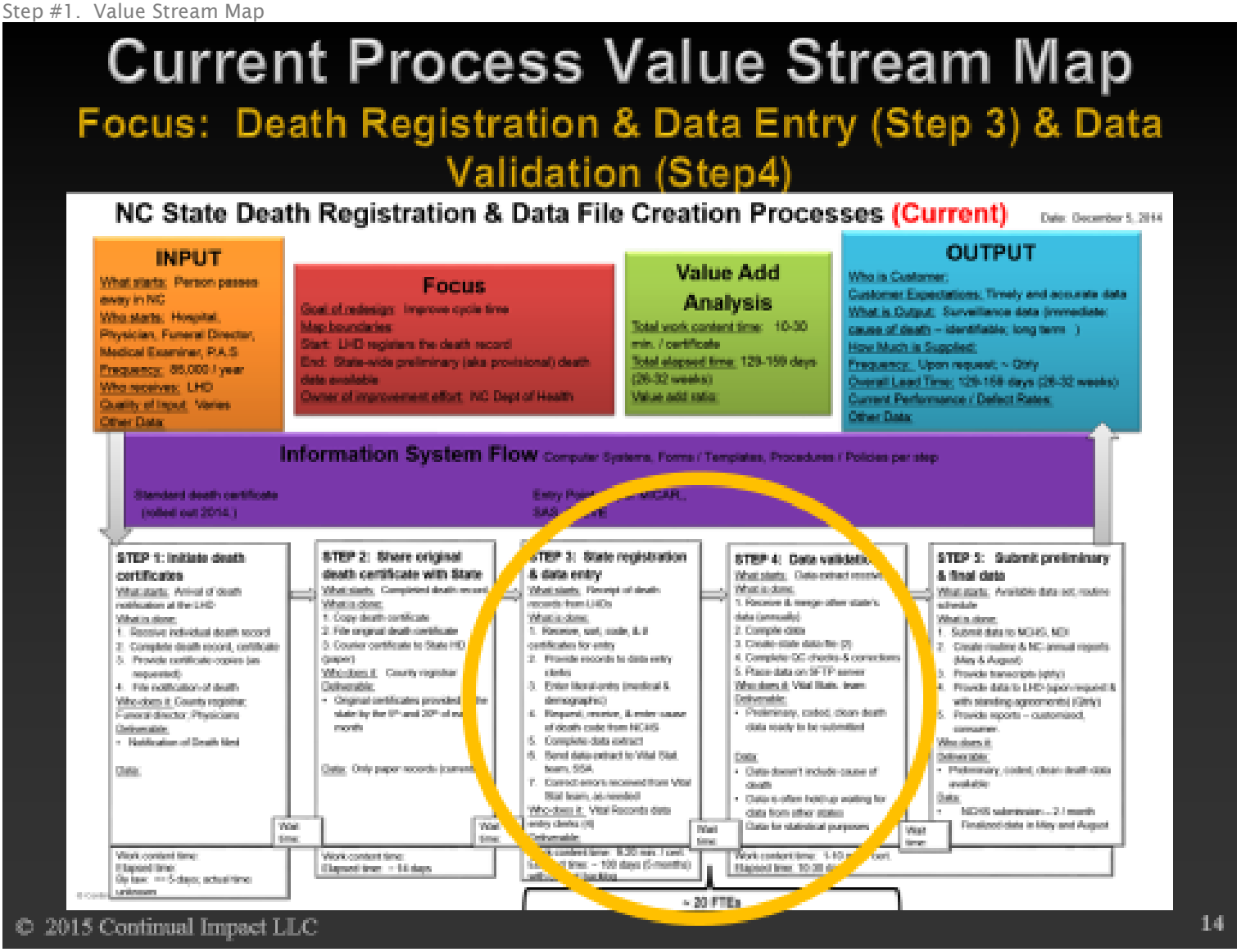
11. Observe and Document Current Process (Generate a Process Map)

Step #1. Value Stream Map



Step #2. Current State Swim Lane Map (Sub-Process)

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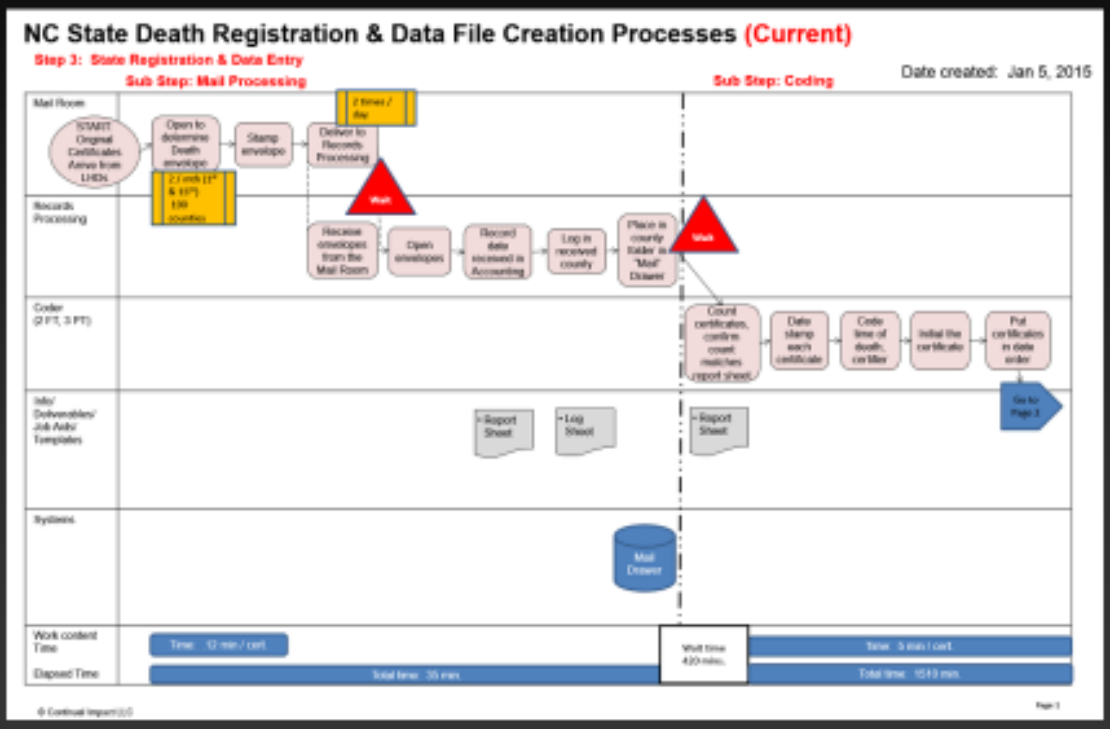
Current Process: Mail Processing & Certificate Coding



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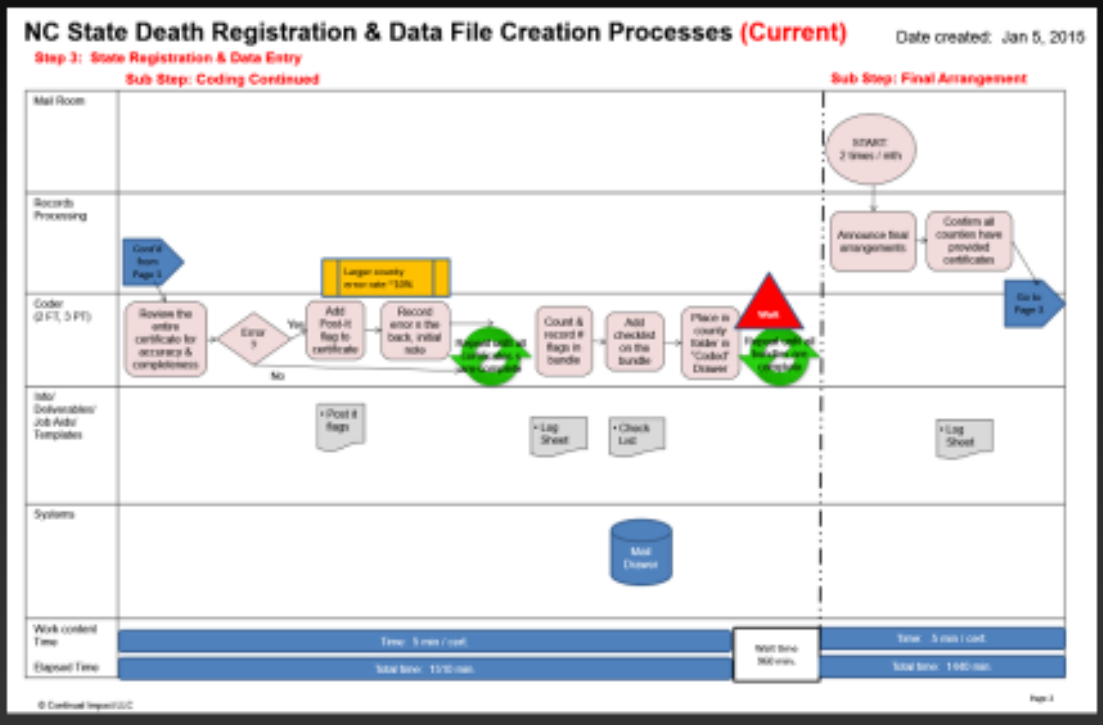
Current Process: Certificate Coding Cont'd. & Final Arrangement



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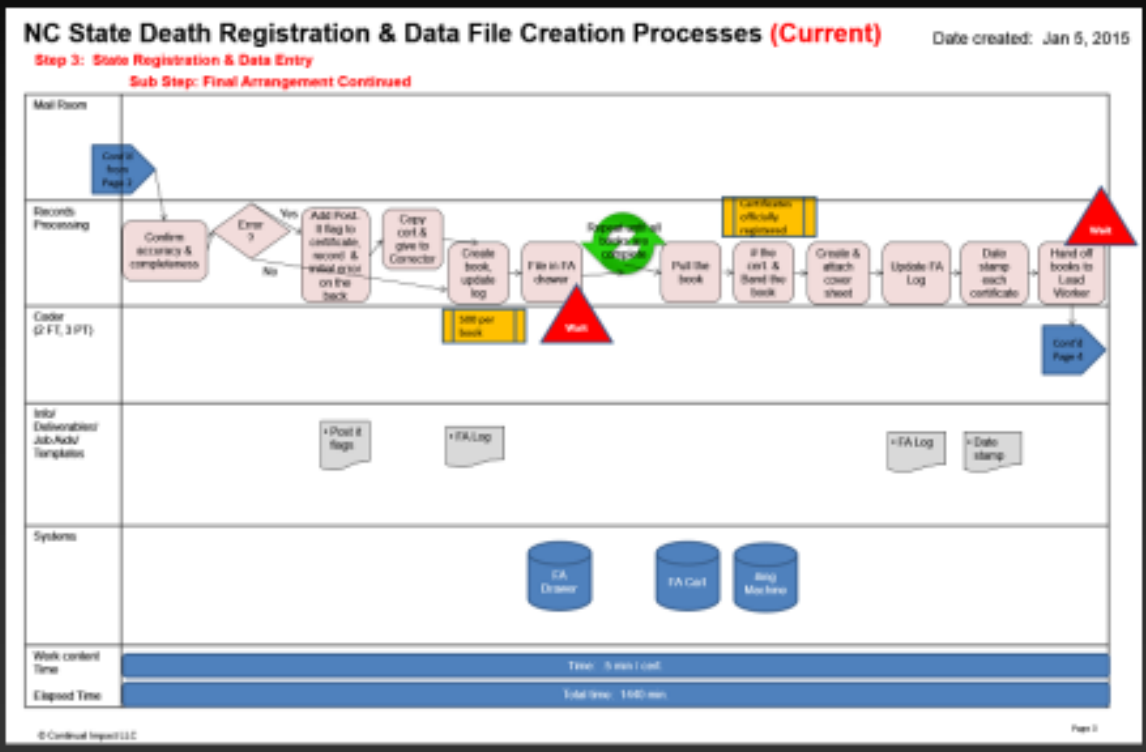
Current Process: Final Arrangement



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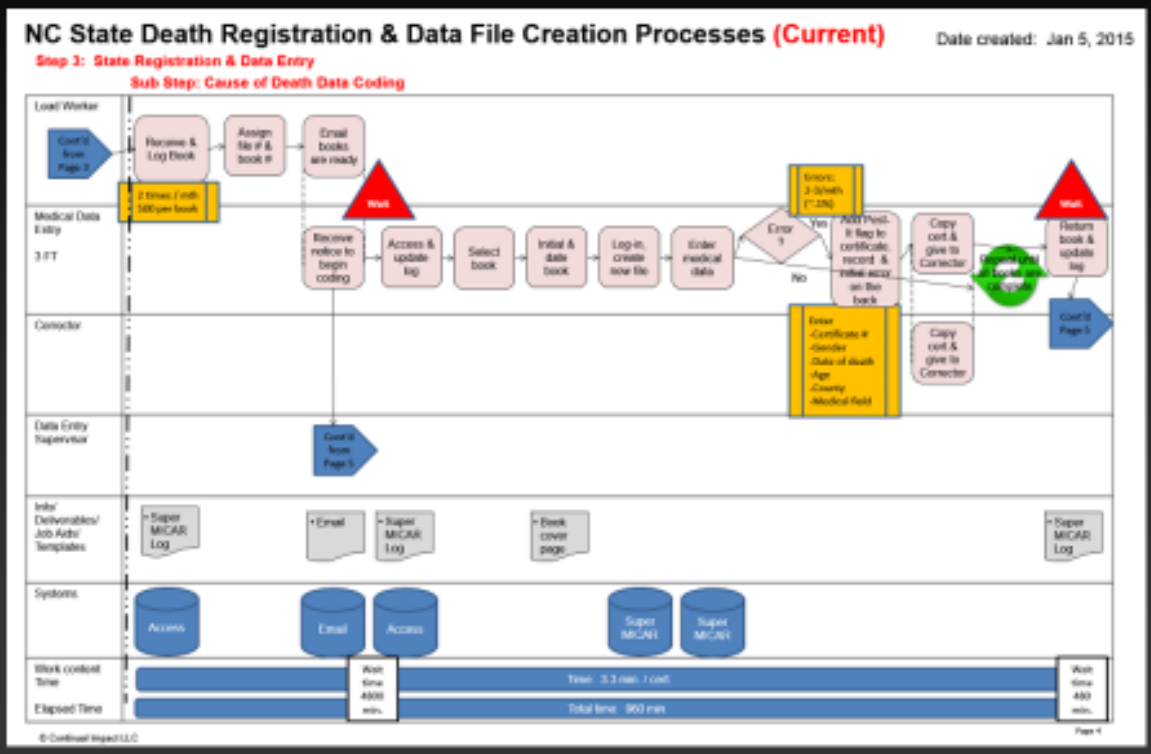
Current Process: Cause of Death Coding



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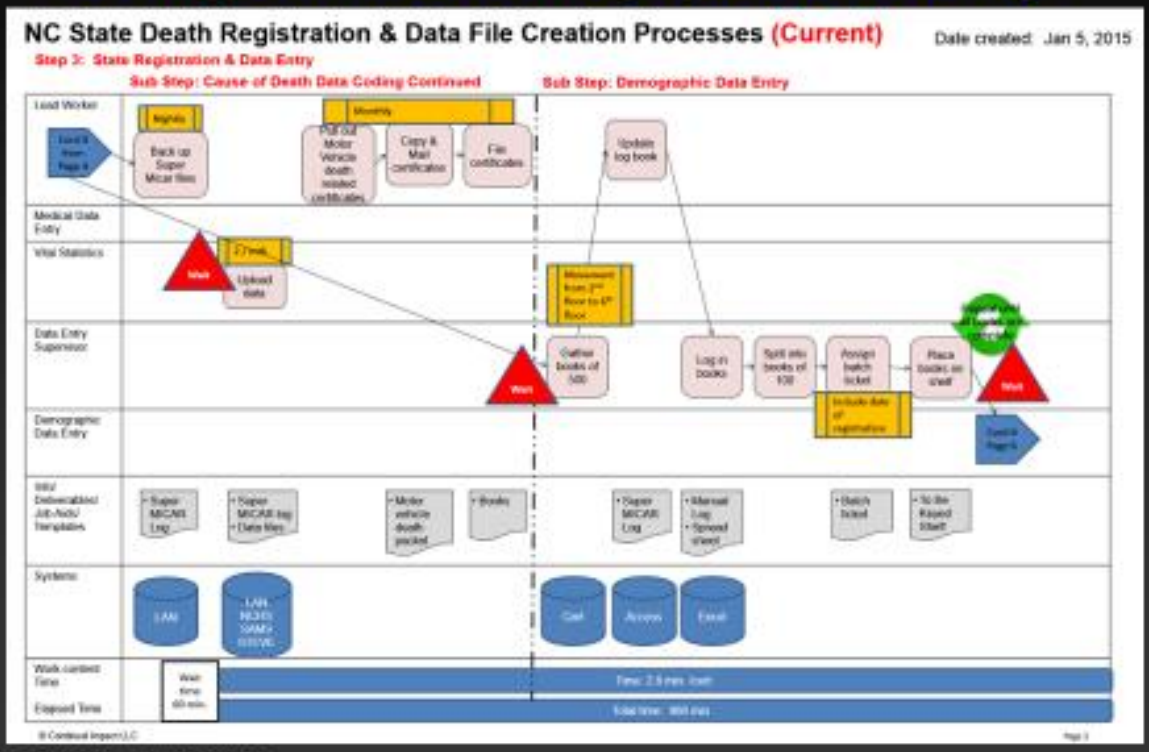
Current Process: Cause of Death Coding Cont'd. & Demographic Data Entry



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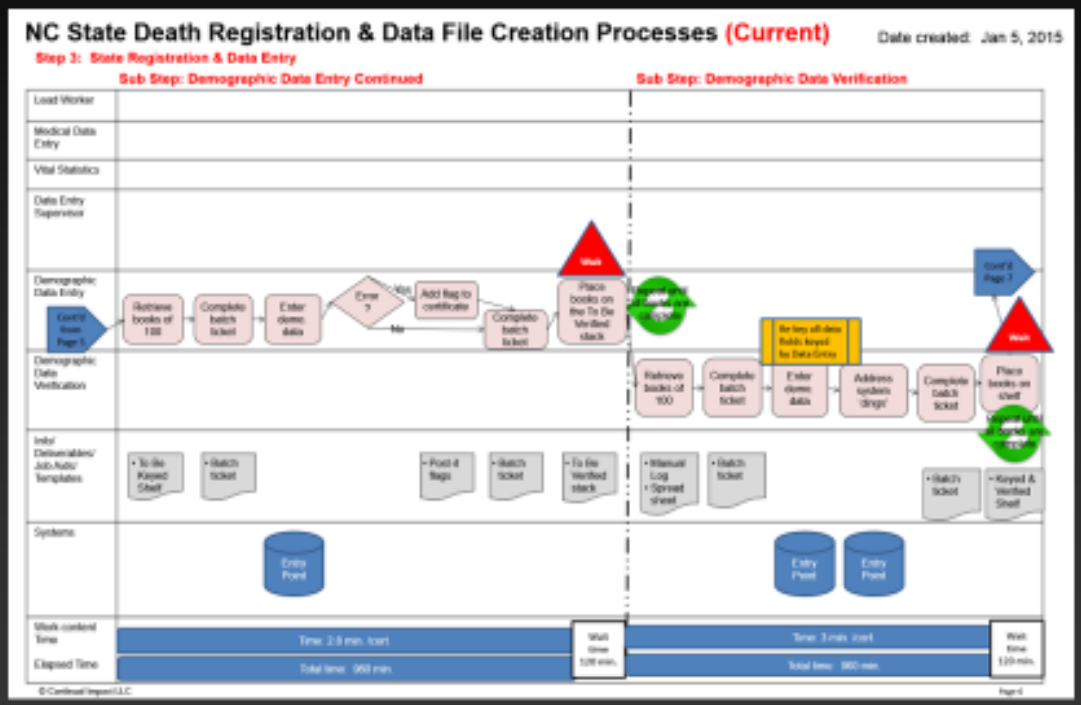
Current Process: Demographic Data Entry & Data Verification



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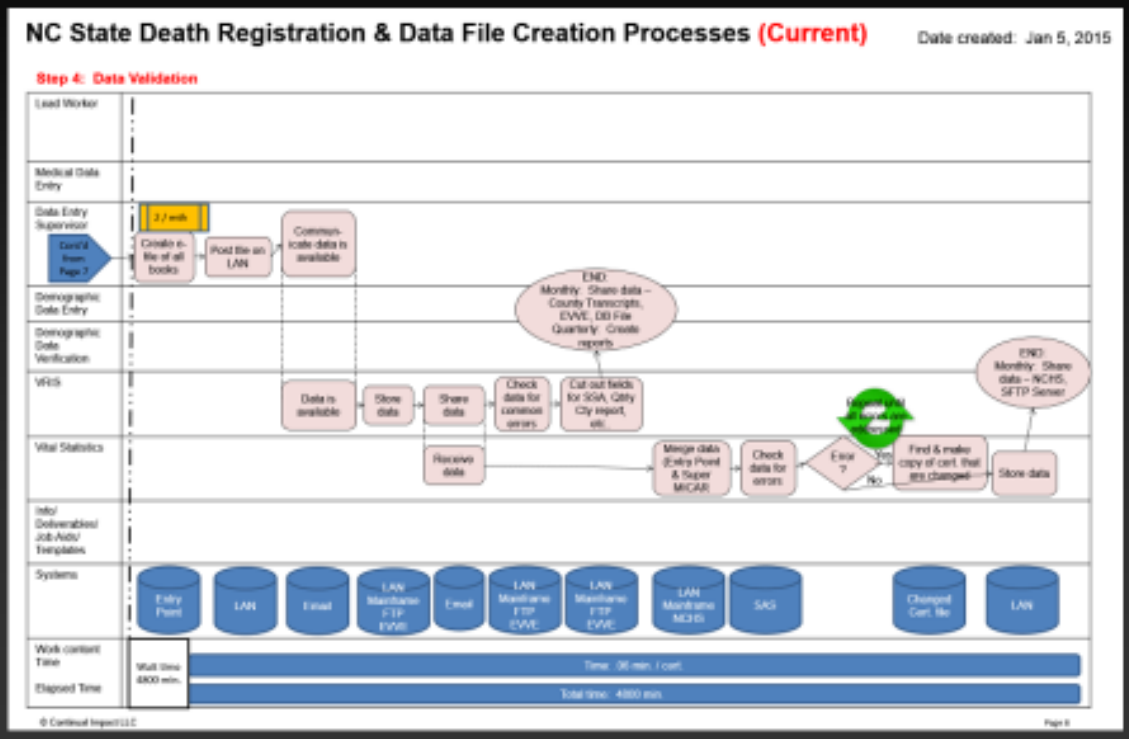
Current Process: Data Validation



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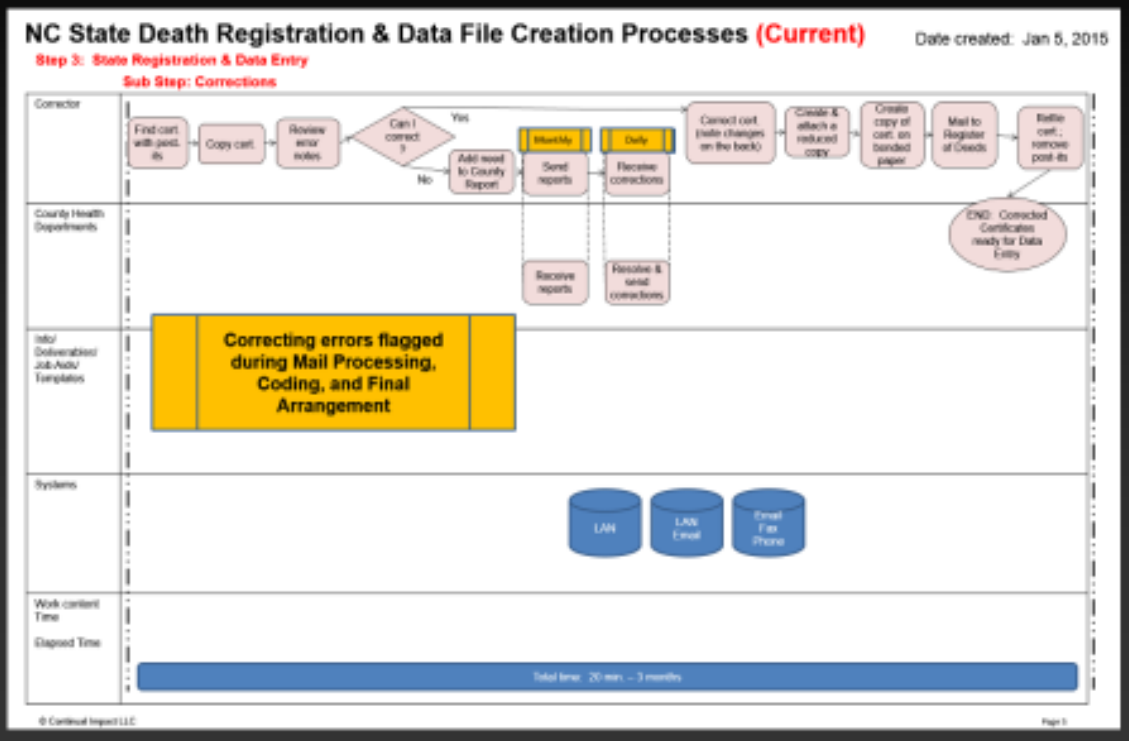
Current Process: Certification Correction



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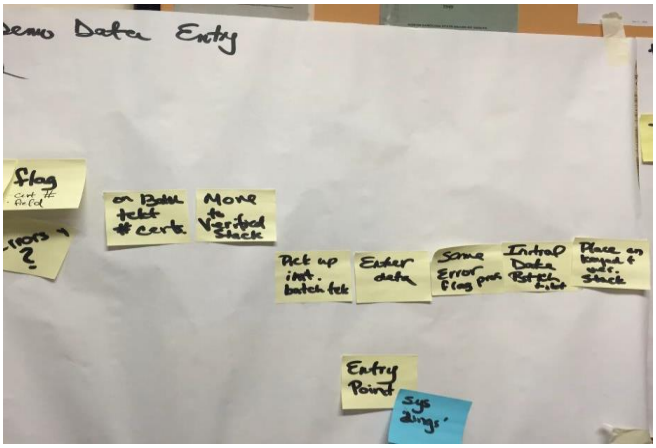

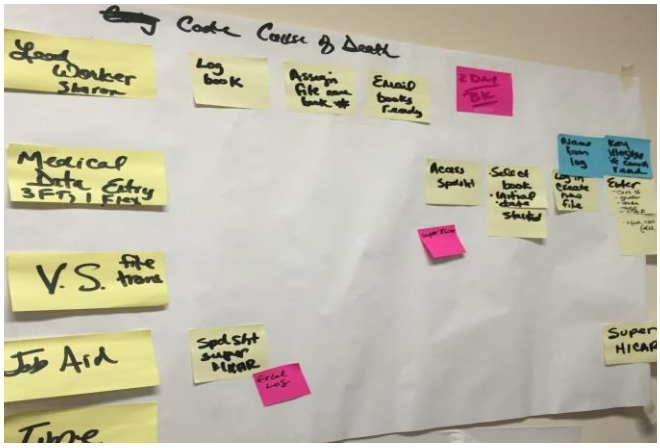

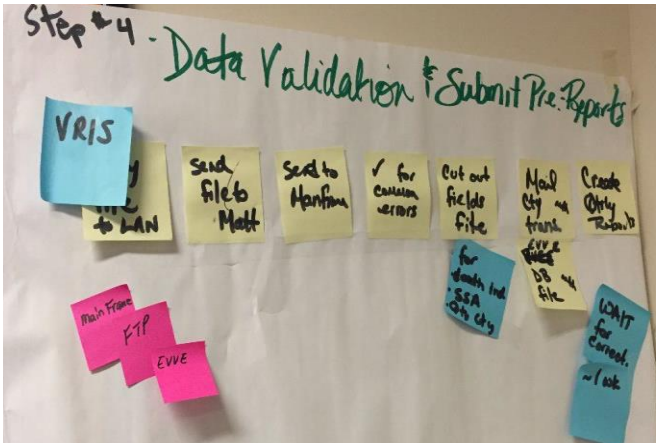

Issue PrioritizationStep #3. Issue Prioritization

High Impact Low	▪ **Replicating NCHS corrections** ▪ Is there a way to eliminate repetitive requests for missing data? ▪ Why two files – Matt's files and VR file for corrections? ▪ All corrections to NCHS (ALL TYPES)	▪ **Data entry – why batched?** ▪ **Searching on cart** ▪ **Stack/pile management** ▪ **Too many log sheets** ▪ **Add mode – not fixing errors – leaving for verification** ▪ **Date stamp each certificate. Is it necessary?** ▪ **Inspecting each certificate in the final arrangement.** ▪ **State makes locals batch the certificates 1st and 15th of month?/Changing the filing times for receiving the certificates.** ▪ **Mouse and tabbing interrupts flow.** ▪ **Medical data entry – quality check certificates for data issues – only 2-3 out of a book of 500 – is it worth the time?** ▪ **Why do medical data entry people also review the demographic data?**

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	▪ FA: Moving back to get final group put together – give to Sharon book at time. ▪ Coding: Extra moving back to get coded for final grouping. ▪ Rubber bands for keeping together. ▪ Searching for work to do by county in cabinets. ▪ Copy file name on certificate for SuperMICAR electronically. ▪ Entry fields allow some data points to be missed/skipped. ▪ Not clear or standard process for flagging issue on original certificate. ▪ DV fixes too many errors. ▪ Date of death files late after book finalized. How do you know where to find a certificate to issue it later? ▪ Outside down issues ITS./LAN serve issues ▪ Searching for uncoded batch on the cart. ▪ Redundancy: same info initials – date in log on computer as on piece of paper (cover sheet)	▪ **Final: moving back for group to get all final together in cabinet of 500 each.** ▪ Movement between work desk and cabinet. ▪ Movement of certificates. ▪ County corrections delayed by infrequent monthly reports.
	Low **Frequency** **High**	

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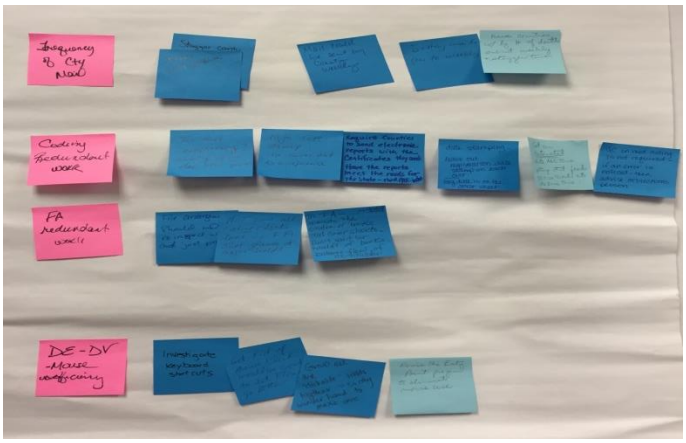
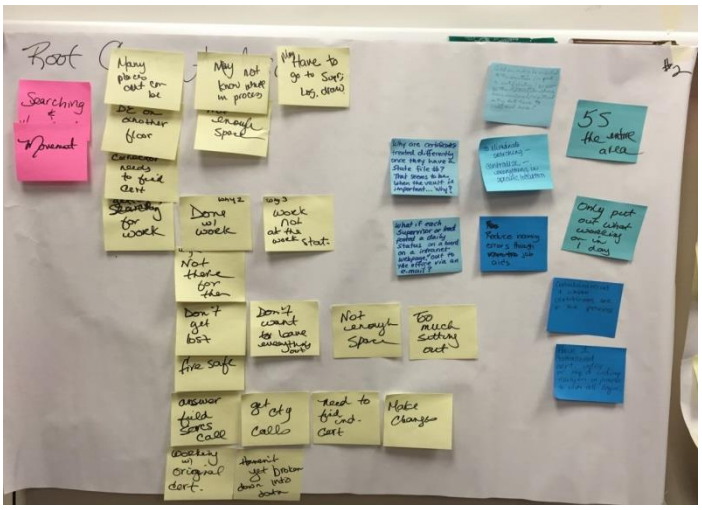
12. Conduct Cause and Effect Analysis (Priority issues and solutions from Cause and Effect Analysis)

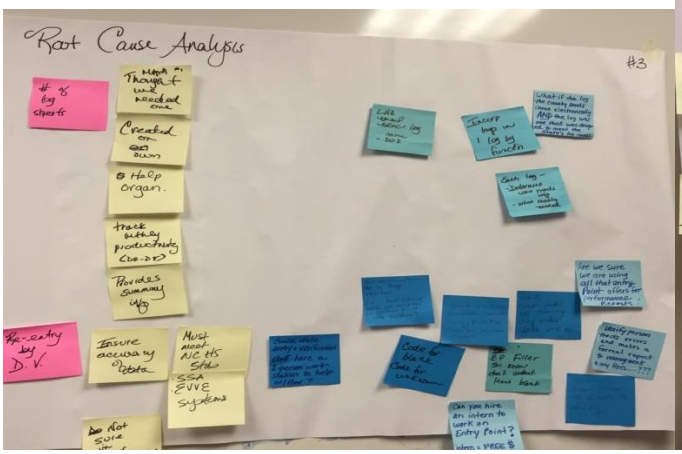
Root Cause Analysis:

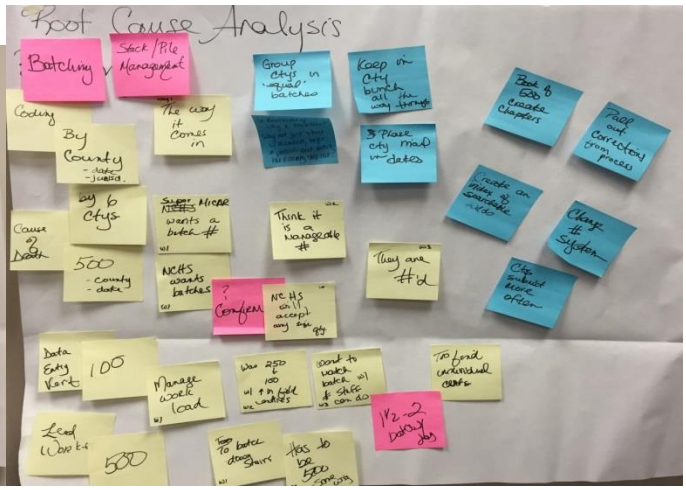




Root Causes:

- Batching –County -> 500 -> 500 -> 100 -> 500
- Searching for certificates
- Stack/pile management
- Too many log sheets
- Time to rekey in Data Verification
- Too many initialing & date stamping each certificate
- Too many inspection of each certificate
- State receive certificates in varying quantities





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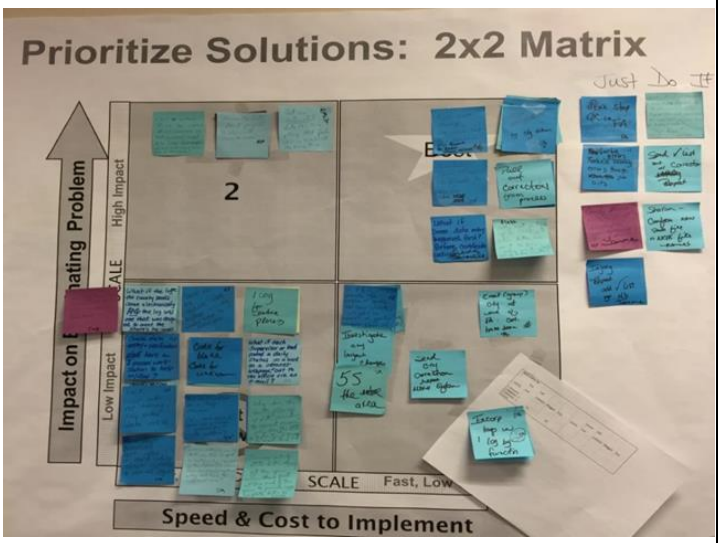
Solutions Prioritization

Impact		
High	▪ Get automated date and time stamp ▪ Stop need for mousing/get rid of mouse clicks. ▪ Hire an intern to work on Entry Point. ▪ Can entry point be moved to all counties……?	▪ **Build a staggered mail-in schedule based on history (maybe weekly) for certificates from counties** ▪ **Eliminate date received stamp** ▪ **Only verify fields that are required by NCHS and SSA.** ▪ **Pull out corrections from process.** ▪ **Put file on SFTP site when data are sent to NCHS. Don't wait until the first of the month.** ▪ **What is demographic data is entered first?**
Low	▪ Require counties to send electronic requests with the certificates ▪ Locals email log ▪ Have one log for the entire process ▪ Could data entry and verification staff have a 2 person work station to help with flow? ▪ Code for blank and for unknown. ▪ Have verification person track error and makes a report to mgt. Track error rates (accuracy) not time. ▪ Have verification be a type free process – just review? ▪ What if each supervisor or lead posted a daily status on a board on intranet or webpage? Or out to the office via email? ▪ Could an index be crated for counties (or just a notification) as soon as their submissions have been numbered/registered so they don't have to call and ask ▪ Process out of state data throughout the year rather than just at the end of the year. ▪ Why doesn't state connect directly with provider instead of county? Or do on a selective basis? ▪ Can log (SuperMICAR) pre populate as information is sequential (data entry)	▪ **In FA, eliminate the creation of books and cover sheets. Don't wait for handoffs.** ▪ **Incorporate logs into one log by function (Lisa's area)** ▪ Investigate any layout changes ▪ 5S the entire area ▪ Email (group) county at end of month. Certificate # in FA. ▪ **Send county report more often than 30 days** 
	Slow/High	Speed and Cost Fast/Low

Just do its:
- Lisa stop QC checks during FA
- Investigate keyboard shortcuts
- Verify error data: Reduce incoming errors through job aids
- Send checklist to counties with monthly report
- Confirm new state file name an NHCS name. Can they be the same?
- County name on outside of envelope – save opening to get name….
- Injury report – add checklist

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13. Improvement Hypothesis (Summary of potential means to achieve goal)

Issue	Improvement	Expected Results
Waiting - stopping	If we…reduce the batch sizes going through the process: - increase the frequency of mailings from counties based on anticipated volume - make the movement of the certificates throughout the process more visual - modify the office layout to aid in certificate flow	Then…we will improve the speed of certificates going through the process, reduce the labor time required to process and improve the overall visibility of document location and status.
Defects	If we…pull the defective certificates offline and into a correction process, then the flow of the non-defective certificates won't be affected.	Then… we will improve the speed of certificates going through the process, reduce the labor time required to process and improve the overall visibility of document location and status.
More than needed – no value added	If we…design a more value added process: -Eliminate date received stamp - Only verify fields that are required by NCHS and SSA. - Enter demographic data first - before certificate coding.	Then… we will improve the speed of certificates going through the process and reduce the labor time required to process
Overproduction and searching	If we…consolidate logs	Then…we have less paper to manage, fewer places to search, a reduction in movement, and fewer opportunities for error.
Delay in processing	If we…put the file on the SFTP site when data are sent to NCHS. Don't wait until the first of the month.	Then…data is available for those who want it sooner.

TRY

14. Test Hypotheses (How will you test the potential solutions?)

Tests	How	When	Who	Successful if…
Test run of process using new cover sheet and logs.	Simulated steps from mail processing through book going to the vault.	Day 5	Entire team	Customers send in certificates weekly, new cover sheet and logs are used, and batching doesn't escalate over 100 units.
New coversheet	Conference walk through by each group	Day 5	Coding, Medical Data Entry, Demo. Data Entry, Data Verification	The new coversheet provides staff certificate book management and leadership the productivity tracking and other tracking logs can be simplified or eliminated.

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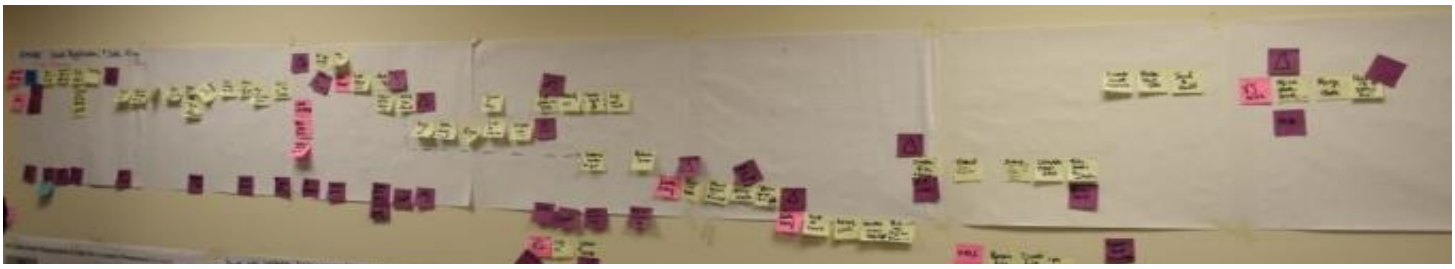
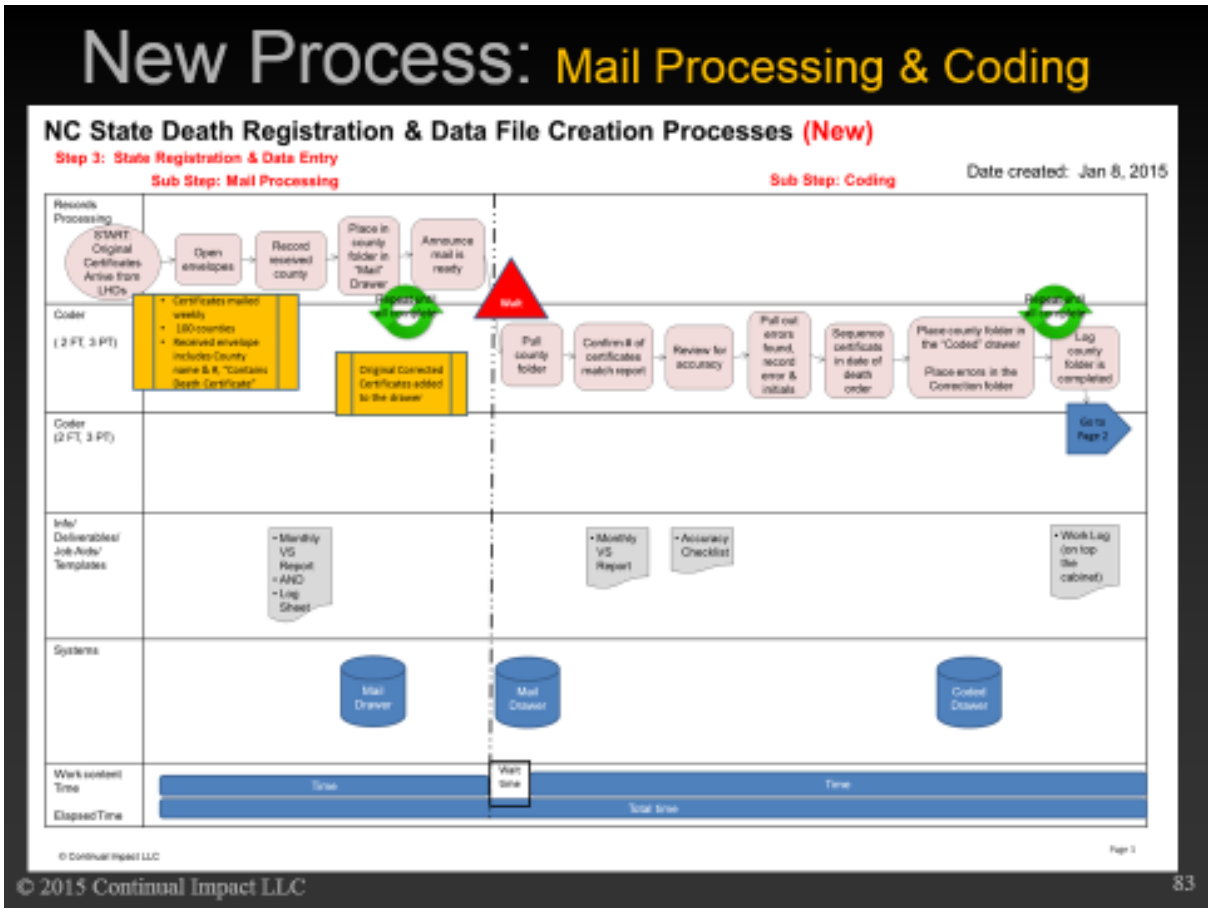
15. Results: paste graph/table of actual trial performance

New Process





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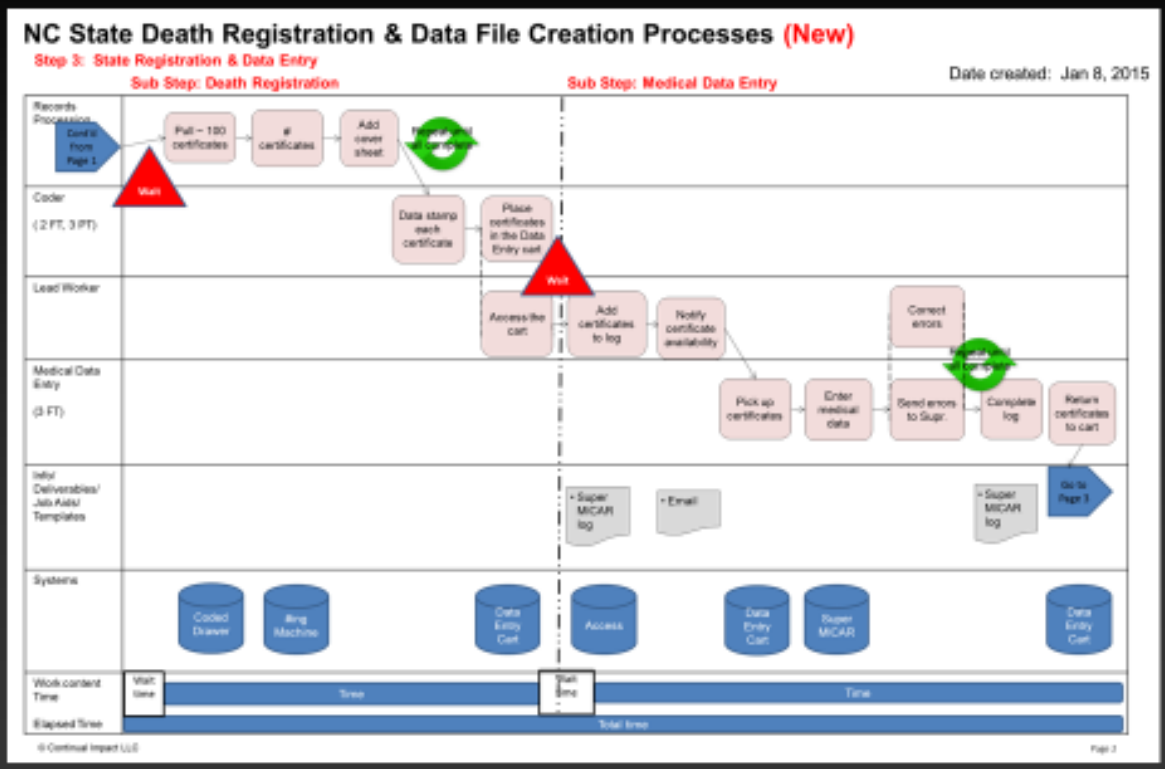
New Process: Death Registration & Medical Data Entry



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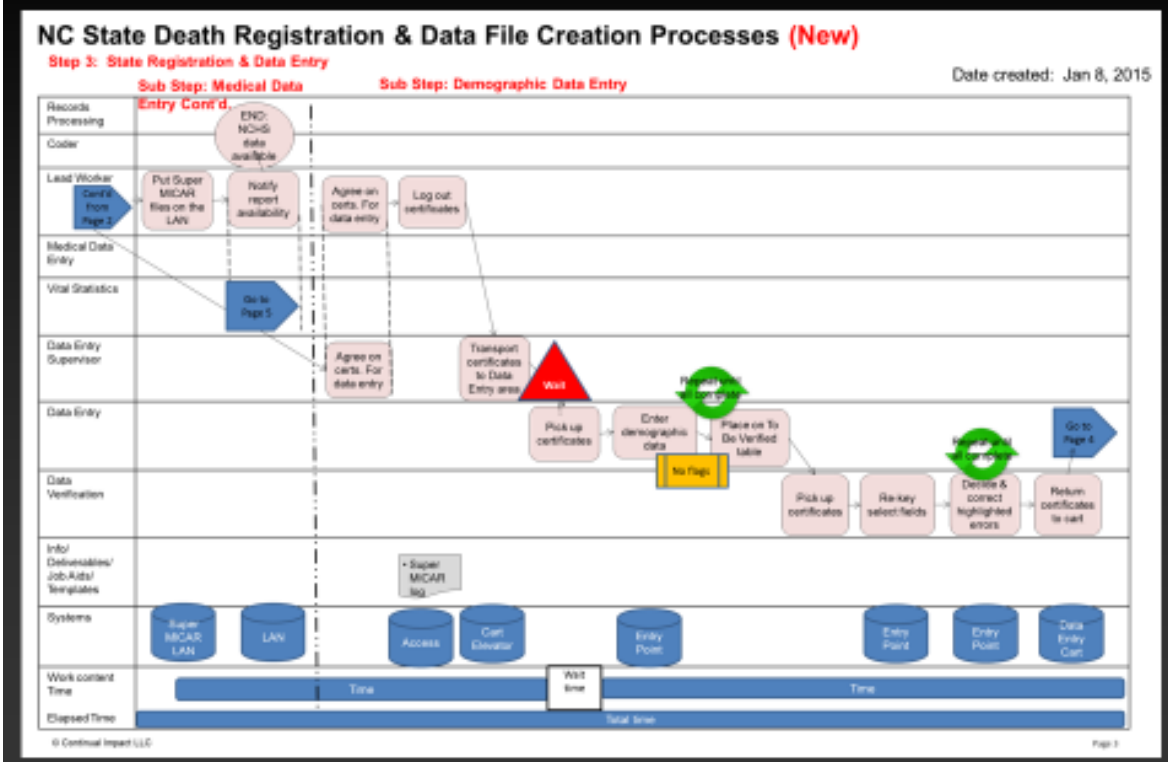
New Process: Demographic Data Entry & Verification



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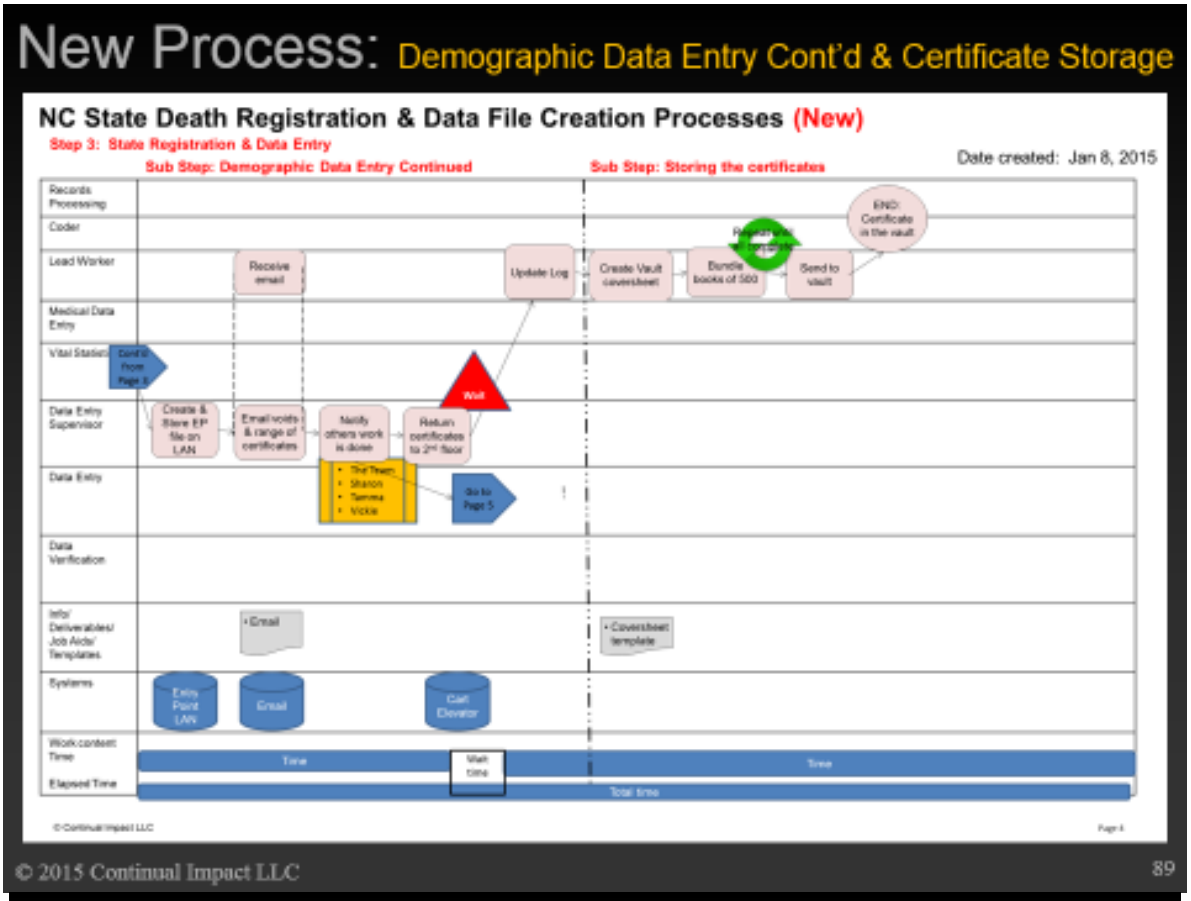

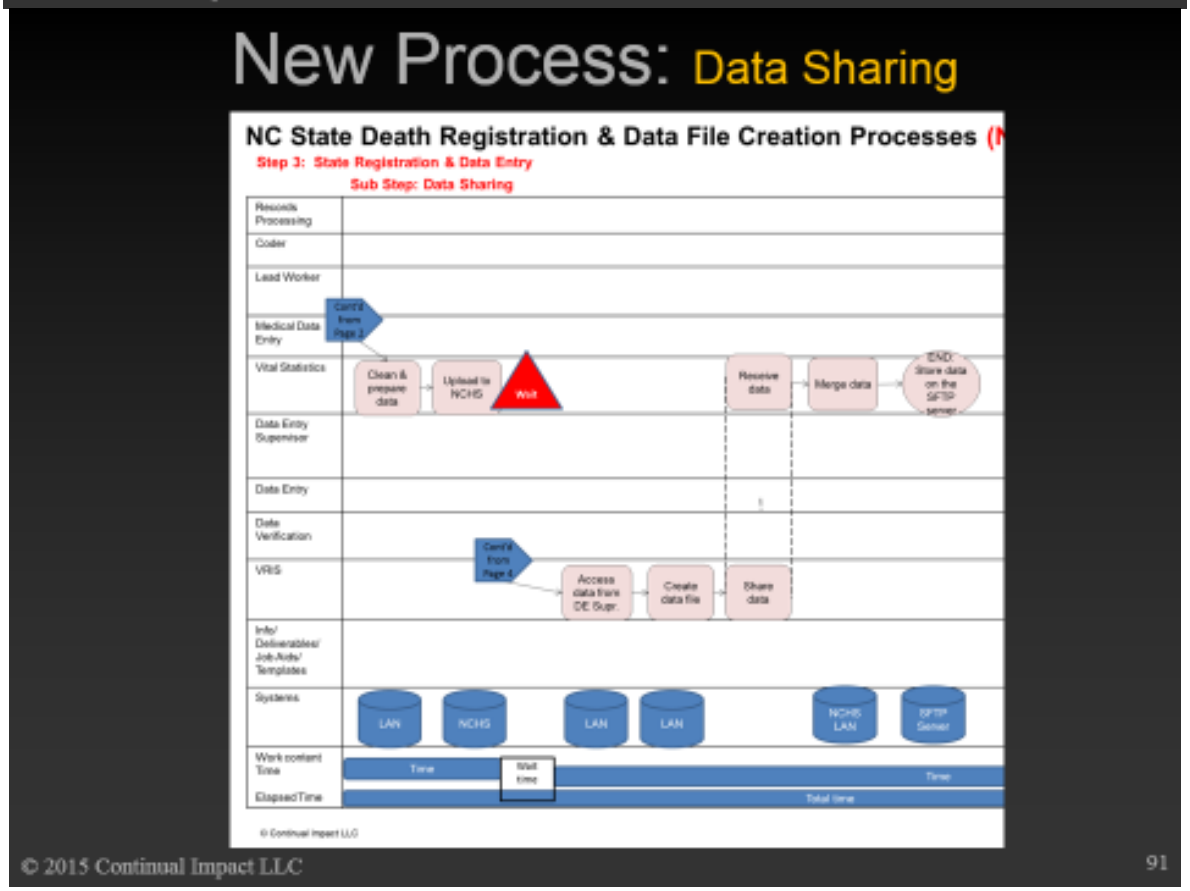

LEARN

16. Learning (For the trials, what worked and did not, why and what are you doing as a result? Is the result

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repeatable?)

Reasons	Learning: Why?	Direction: Actions to be taken
Staff agreed to remove certificates needing corrections earlier in the process.	Pulling out errors will help increase flow and not tie certificates up in a correction process at various stages.	Clarify and document corrections process.
Cross training and back ups are essential for process flow.	Mail processing will need have with coding, numbering and date stamping.	Develop back up (rotational) schedule for coverage.
Reduction of batch sized will reduce processing time.	Batch reduction reduced delays in waiting for stacks of 500 certificates.	Continue to experiment with batches of 100 certificates or less.
	May still have too much flagging, but not correcting…	Validate flagging benefits with Medical Data Entry Data
Smooth movement of certificates through the process	To decrease wait times between process activity smooth movement of certificates is needed	Further clarification of handoffs between teams needed Consider changing the physical layout to decrease wait and movement
	The Super MICAR log can be used by both the Medical and Demographic teams	Sharon to coordinate Read & Write log access

INSTALL

17. Installation Plan (Steps to operationalize the new process and make it stick. Attach new process map below.)

Installation of the new process will incorporate the following improvements:

- LHD to mail certificates weekly
- Corrections pulled out and given to Corrector (no copies)
- No formal Final Arrangement; #ing and data stamping will occur weekly
- Batch size is consistent for everyone ~ 100 certificates / batch
- Building books of 500 is after registration and data entry is complete
- New batch coversheet will be with the batch through the entire process
- Streamlined tracking logs
- Data Verification will NOT verify every field

Action Plan
See Continual Improvement System for open actions and additional improvement ideas

What	Who	By When
Begin weekly Continual Improvement meetings; Measure progress	Eleanor, Vickie	Weekly, every Thursday 3:30-4
Train the team	Vickie, Doris	Week of Jan 12th
Notify all Local Health Departments	Catherine, Eleanor	Jan 23rd
Begin working in this new way	Team	Week of Jan 12th

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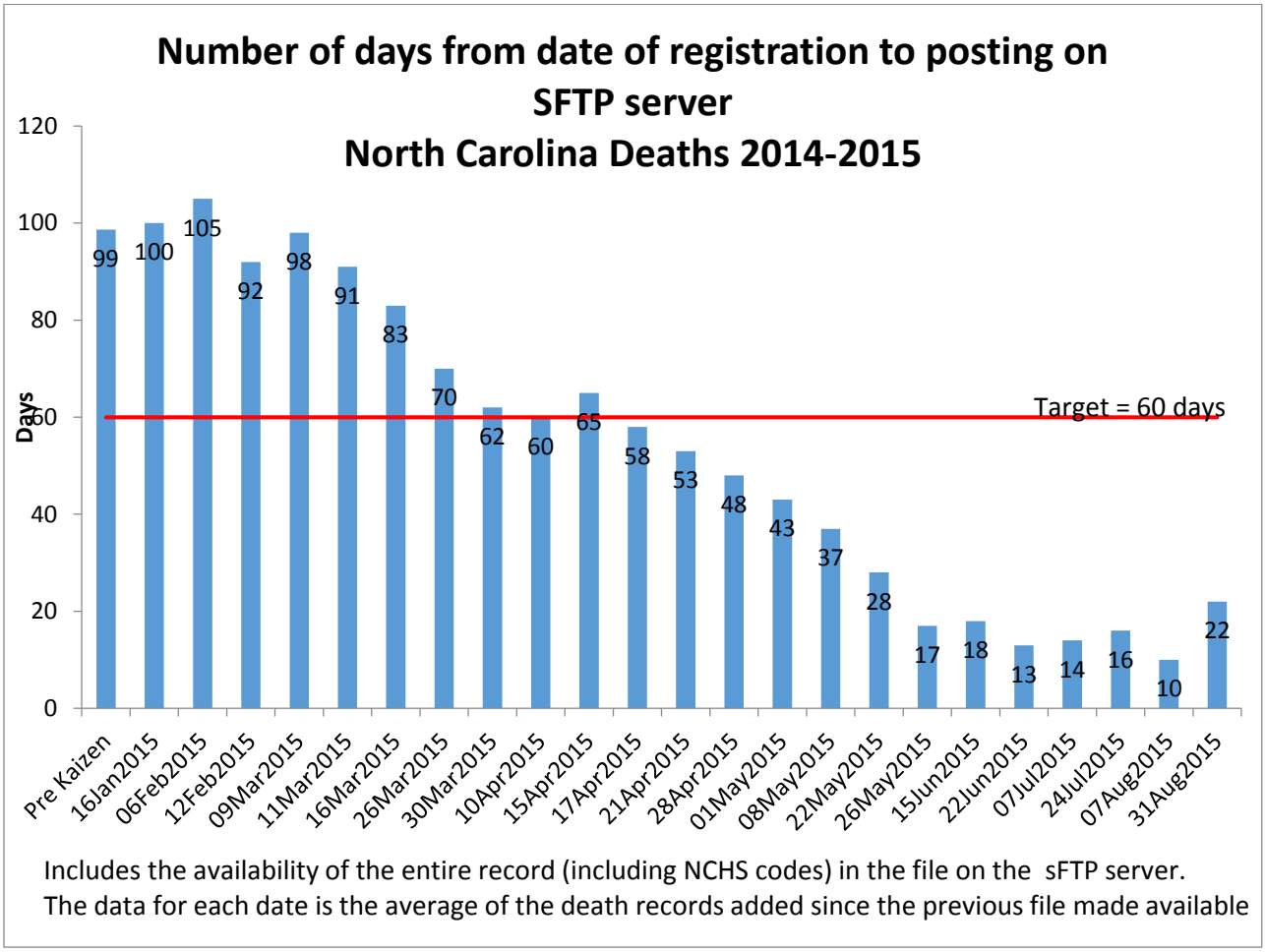
18. Measure Success

- Attach graph/table of installed performance measures
- Attach photo of current Continual Improvement System



Includes the availability of the entire record (including NCHS codes) in the file on the sFTP server.
The data for each date is the average of the death records added since the previous file made available

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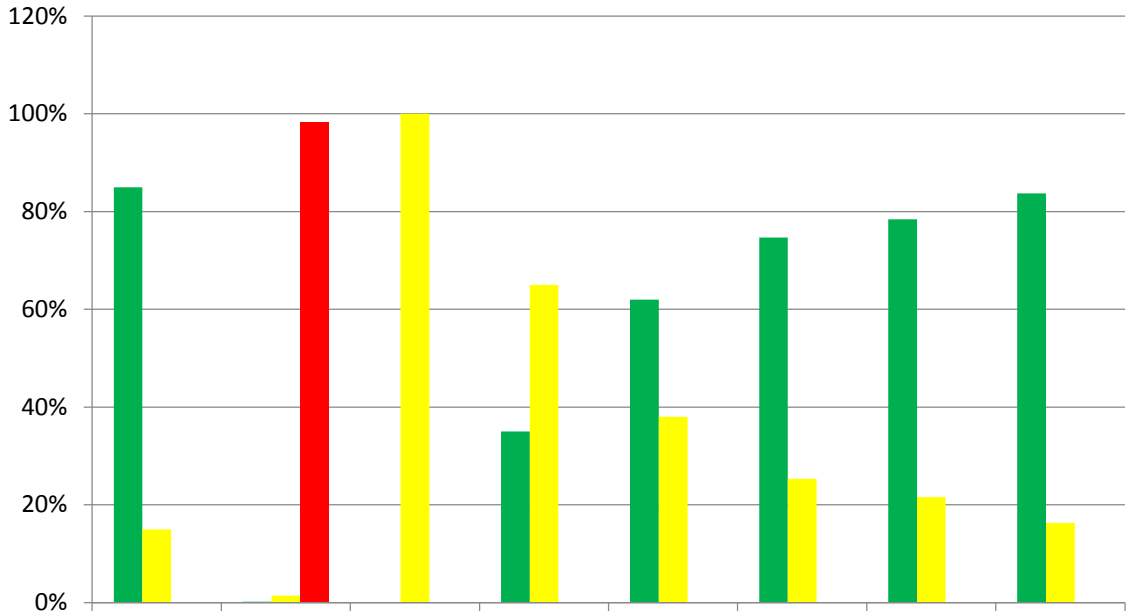
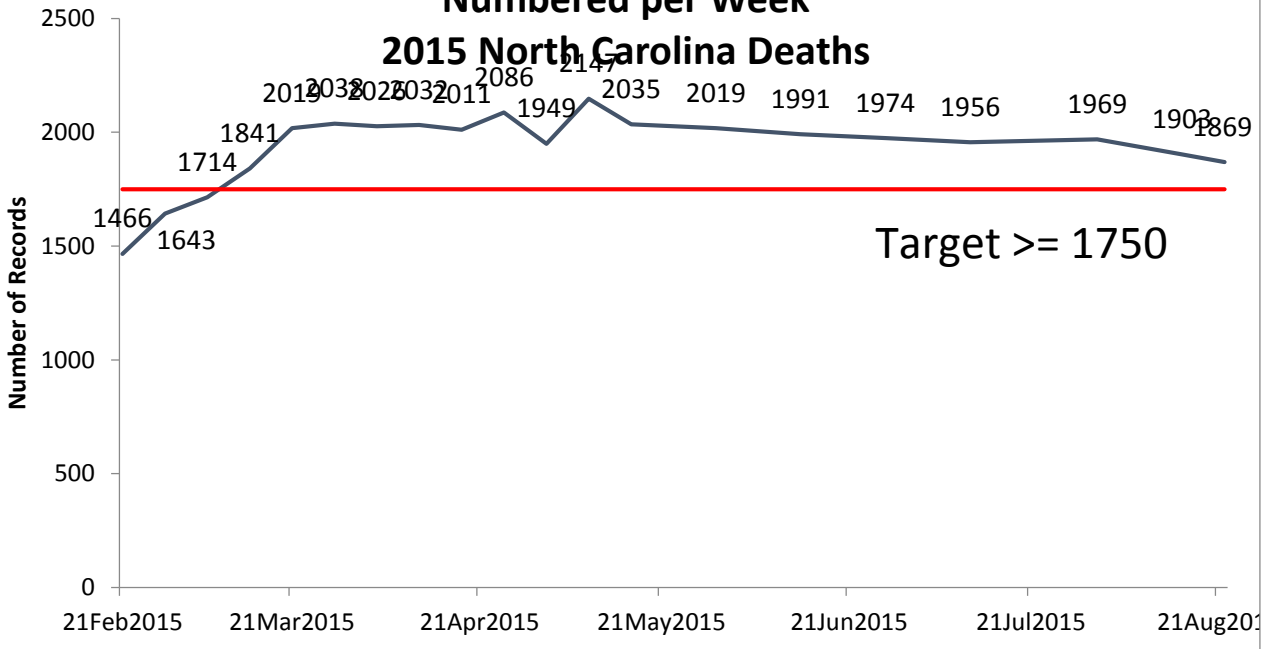
Death Records Submitted to NCHS within 25 days of the Date of Registration (Demographic & SuperMICAR)



	Target	2014	May 12 2015	May 19 2015	June 2 2015	June 23 2015	July 14 2014	Aug 25 2015
< 25 days	85%	0%	0%	35%	62%	75%	78%	84%
25 - 50 days	15%	1%	100%	65%	38%	25%	22%	16%
> 50 days	0%	98%	0%	0%	0%	0%	0%	0%

Cumulative Average Number of Death Certificates Numbered per Week 2015 North Carolina Deaths



As data was not submitted weekly until after February 1, the cumulative average begins with the week of February 21.

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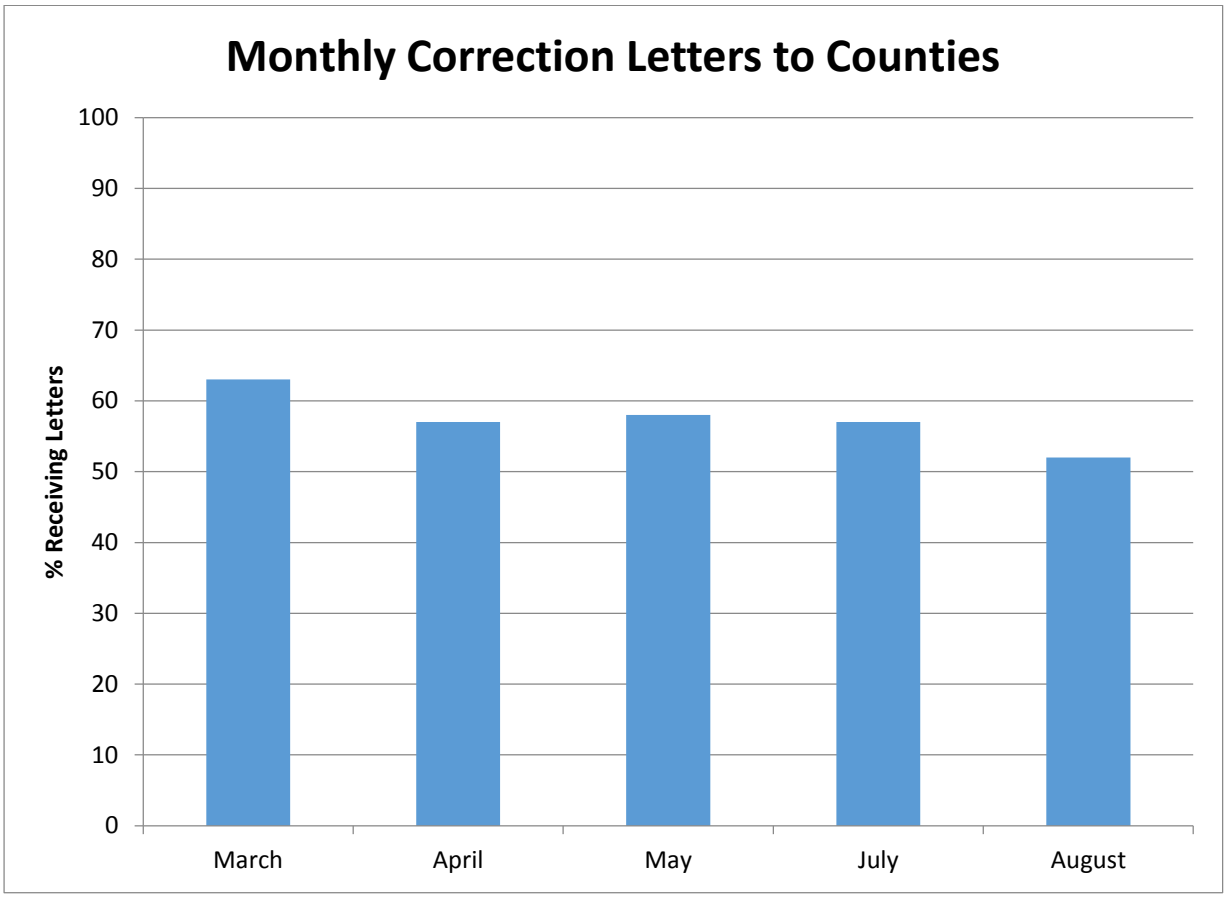

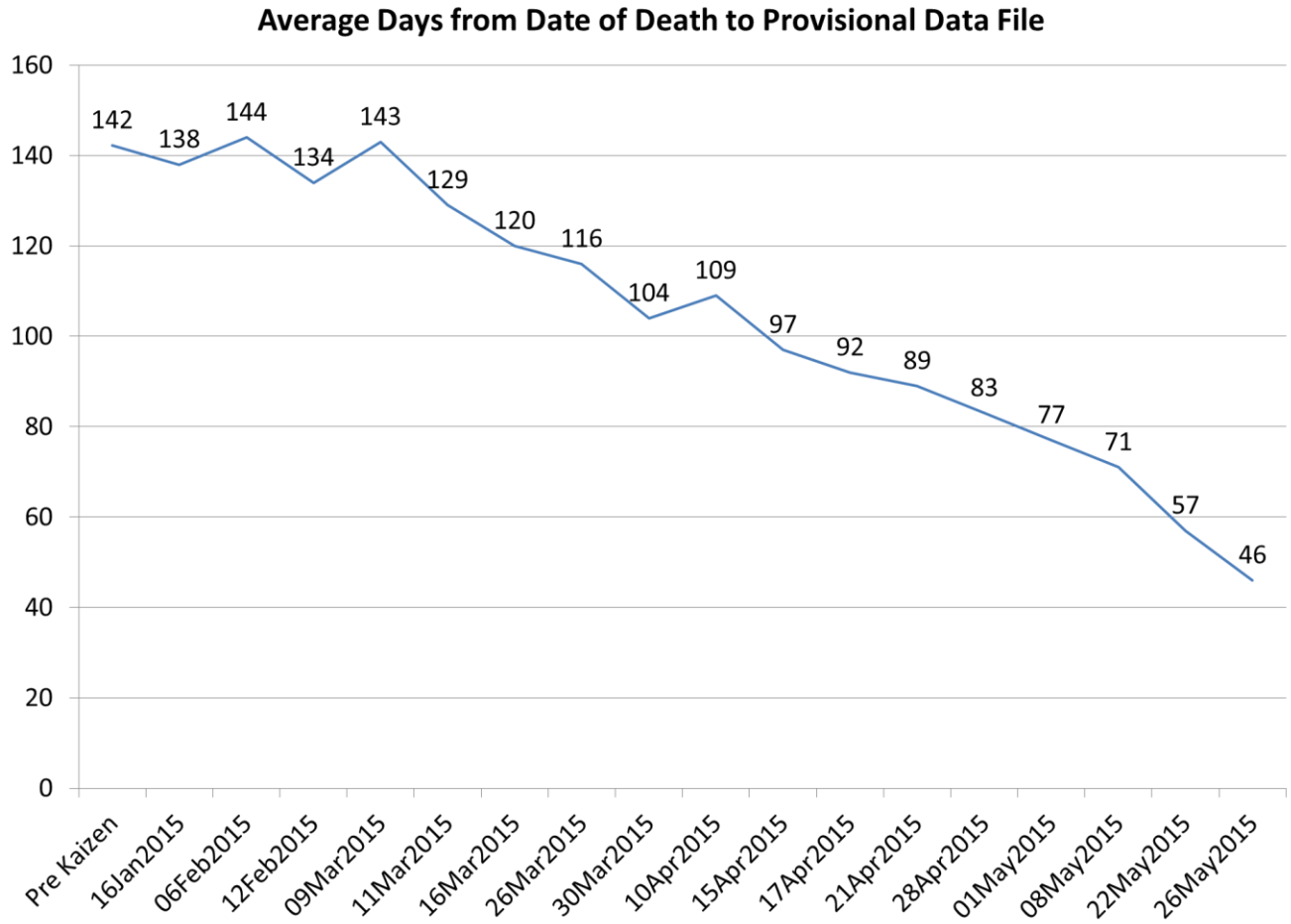

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