IMPROVING THE SUCCESS AND TIMELINESS OF IIS PROJECT COMPLETION IN NORTH DAKOTA

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NDIIS MANAGER

BACKGROUND

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- **The North Dakota Immunization Information System (NDIIS) is a confidential, population-based, computerized information system that attempts to collect vaccination data for all North Dakotans.**
  - Lifespan system that includes infants/children, adolescents and adults
    - Have approximately 89% of adults in the IIS
- **Established in 1988 as a modem, dial-up system**
- **The NDIIS is a grantee-developed (i.e. homegrown) IIS.**
  - The NDDoH contracted with Noridian Mutual Insurance Company (NMIC), formally Blue Cross/Blue Shield of North Dakota, in 1996 to develop the current web-based system.
  - NMIC is still currently hosted and supported by NMIC
  - In May 2013, the NDIIS went through a major technical upgrade that moved the system to .NET technology.

BACKGROUND

- **ND Century Code requires North Dakota providers enter all childhood (under 18 years of age) immunizations into the NDIIS.**
  - Have 105% of kids younger than 18 with 2 or more doses in the IIS
- **95% of immunization data is entered into the NDIIS within one month of administration.**
  - Includes 73% of doses entered within 1 day of administration
- **There are 1,205,138 active client records in the NDIIS.**
- **There are 11,505,080 dose records in the NDIIS.**

PREVIOUS PROCESS & LESSONS LEARNED

PREVIOUS PROCESS

- **Quick turn-around time for project estimates**
  - When grant funding becomes available, the NDDoH needs a “quick and dirty” estimate of cost to complete any NDIIS changes or enhancements.
    - Estimate is based off short conversation and/or written description of proposed enhancement.
    - NMIC would build some “risk” into estimate to account for changes after grant awarded.

PREVIOUS PROCESS CONTINUED…

- **If grant was awarded, met with NMIC development team to discuss project**
  - Go into more detail about the enhancement/changes and what we would like to have as the end-product
- **Development team would take details from meeting and design, develop and deploy (to test environment) new functionality and/or changes.**

PREVIOUS PROCESS CONTINUED…

- **Immunization Program and/or NDIIS staff would see final product during pre-UAT demo.**
  - This was our first opportunity to provide feedback on the design of the functionality.
- **Any desired changes to design or basic functions of the enhancement/change would be included in UAT feedback along with any technical issues discovered.**

HOW DID THAT WORK OUT?

Not well…

- Because UAT was the first time the Immunization Program was able to provide feedback on the actual design it led to:
  - long delays in production deployment.
  - additional development time not originally anticipated in the cost estimate to re-do a lot of work that had been done.

WHAT DID WE LEARN?

- **We were spending a lot of time making changes during the later steps of the development lifecycle.**
  - NDDoH was receiving functionality that didn't fully meet our needs or expectations.
  - NMIC was having to spend more time making changes and re-doing their work.
- **The process was causing a lot of stress and frustration for all of our team members.**

NEW PROCESS & PROJECT SUCCESSES

WHAT DID WE DO ABOUT IT?

- **In late 2013, we knew we had a couple major projects coming up and didn't want to repeat the same frustrating process.**
- **NMIC development team and NDIIS staff reviewed our process and had a conversation about what we really wanted to do differently.**
  - NMIC team expressed need for detailed business requirements from NDDoH.
  - Agreed that we all needed to spend more time and effort on the front end (i.e. planning and design) of the project to avoid wasting time making changes on the back end.

NEW PROCESS

- **In early 2014, the NDIIS Manager developed a template for formal business requirements.**
  - Template for requirements was reviewed and agreed upon by both the NDDoH and NMIC team members.
  - Requirements would be completed
    1. after funding was secured for project
    2. and before any development work was started.
  - Gather input from key stakeholders during drafting of requirements.

NEW PROCESS CONTINUED...

Requirements Document:

- Tracks revisions
- Includes 6 detailed chapters
  1. General Information
  2. Current System Summary
  3. Proposed Methods and Procedures
  4. Detailed Characteristics
  5. Design Considerations
  6. Security

REQUIREMENTS DOCUMENT

Chapter 1:

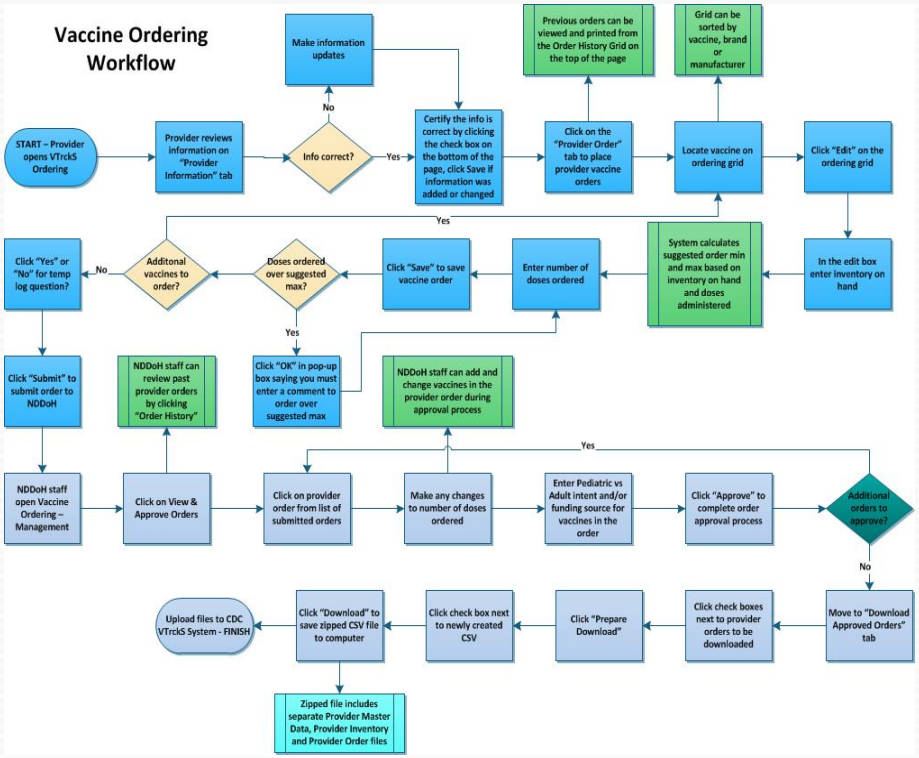
- Scope
- Project References
  - Any documents that the development team may need to review and/or refer to prior or during project development

    Example = VTrckS ExIS Specifications
- Acronyms and Abbreviations
- Points of Contact
  - Includes key stakeholders and others who may have provided input on requirements

REQUIREMENTS CONTINUED…

Chapter 2:

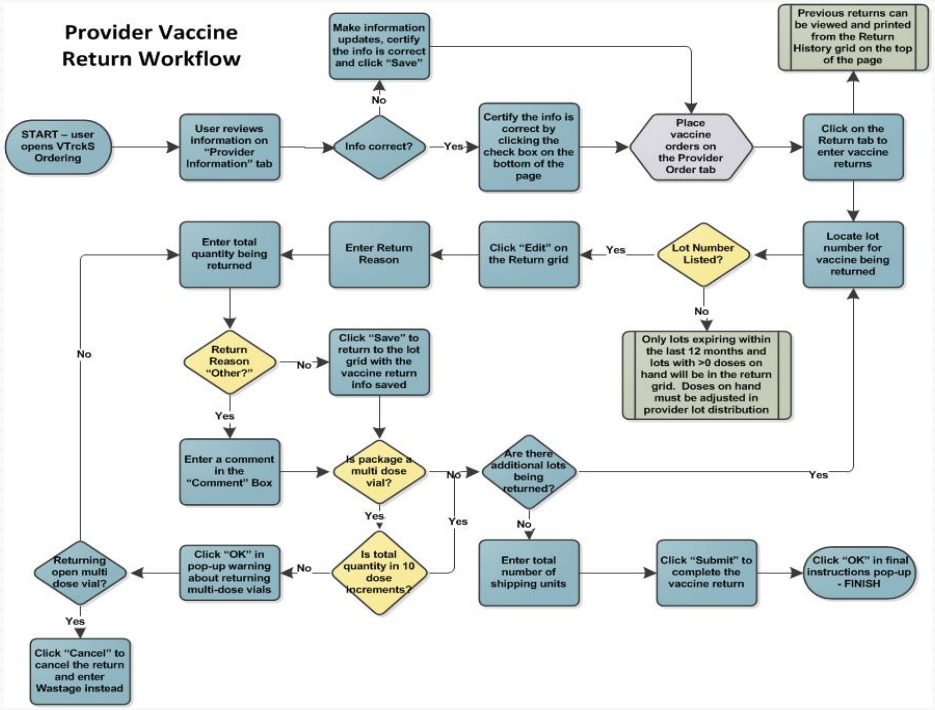
- Background
  - Reasons for enhancements/changes
- Current system functionality
  - Details on how current process works
- Current methods and procedures
  - Flow diagram of current workflow



REQUIREMENTS CONTINUED…

Chapter 3:

- Summary of Improvements/Enhancements
  - Short overview of project
- Functional Improvements
  - Details about project requirements
  - Flow diagram of new workflow after enhancements
- Summary of Impacts

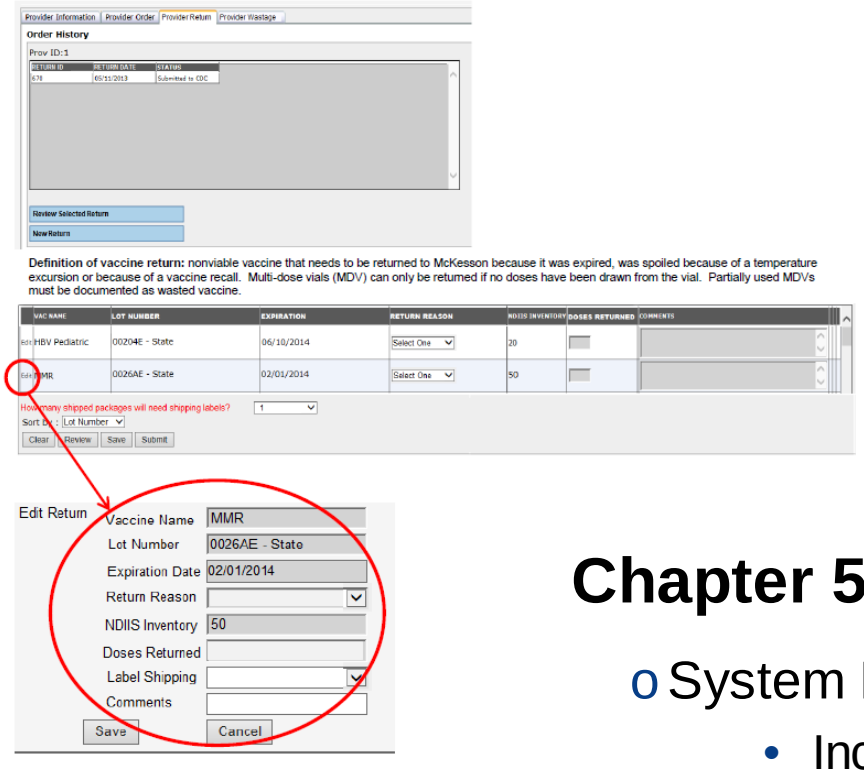


REQUIREMENTS CONTINUED...

Chapter 4:

- Detailed Characteristics (i.e. specific performance requirements)
  - Accuracy and validity checks needed in new functionality
  - Timing of functions
  - Capacity limitations or requirements
- System Functions
  - Including flow diagrams
- Input and Output Requirements

REQUIREMENTS CONTINUED…



Chapter 5:

- System Design
  - Includes screen mock-ups and descriptions of changes to current screens

REQUIREMENTS CONTINUED...

Chapter 6:

- Security Control Points
  - Input controls
  - Output controls
  - Process controls
- System Monitoring and Auditing
  - Considerations for logging, triggering criteria and identification information
  - Audit trail considerations

NEW PROCESS CONTINUED...

- **Completed requirements are sent to the development team.**
- **Developers and NMIC Project Manager review requirements.**
- **NDDoH and NMIC teams meet and discuss:**
  - any questions development team has and
  - any necessary changes are made to the requirements document.
- **NMIC provides NDDoH with a final cost estimate for project and complete timeline for completion of work.**

PROJECT SUCCESS

Pilot Project: VTrckS Returns and Wastages

- Needed to make enhancements to the NDIIS Vaccine Ordering module that would allow providers to enter returns and wastages that could be uploaded to CDC's VTrckS system.
- Planned to utilize development funds allocated in our base contract with NMIC.
- Had a strict timeline we wanted to follow to be able to interface with VTrckS as soon as the functionality was available.

PILOT PROJECT CONTINUED…

- **Followed our new process for project planning and requirements gathering.**
  - NDIIS Manager wrote Requirements Document.
    - Included reference to CDC VTrckS specifications
    - Gathered feedback from VFC program staff as the primary end-users of the new functionality
- **When project was passed to the NDDoH for UAT, there were:**
  - no major issues reported
  - no major changes requested
  - and deliverables met our needs and expectations.
- **Project was completed on time and within budget!**

FINAL CONCLUSIONS

❖Making an investment in planning stages of the project paid off!

- **Have continued this process with three other projects**
  - Pandemic Preparedness functionality: completed with no major changes requested or issues found during UAT.
    - Still had challenges with budget and timeline due to other circumstances outside of our set process.
  - Influenza Vaccine Pre-booking and Allocations Module
    - Used requirements document to determine final project effort, including cost.
      - Project has been tabled for now but will be ready to go if and when funding is available.
  - School Module
    - Draft requirements are written and we are gathering input from key stakeholders.

CONTACT INFORMATION

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NORTH DAKOTA DEPARTMENT of HEALTH

NDIIS
NORTH DAKOTA IMMUNIZATION INFORMATION SYSTEM