Forms Development and RAVE

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May 11th, 2017

Presentation Objectives

- Provide the Alliance high level process for developing forms (both paper and electronic)
- Provide a basic understanding for how the Data Capture System (Medidata Rave) functions
- Provide key elements in successful data collection
- Provide key elements in efficient Rave builds

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Forms Development Process

- Begins with a stable Protocol (draft #3)
  - Schema
  - Eligibility Criteria
  - Registration/Randomization
  - Treatment
  - Disease Evaluation
  - Study Calendar

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Forms Development Process

- Study Developer (SD) selects the appropriate paper CRF templates, and creates any study specific forms based on review of the protocol
  - Eligibility Checklist
  - On-Study Form
  - Treatment Form
  - AE Form
  - Patient Status Form
    - Treatment indicator
    - Disease/vital status
    - Indicators for the rollout of additional forms
  - Off Treatment
  - Withdrawal of consent
  - Lost to follow-up
  - New Primary

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Forms Development Process

- Study team reviews the initial draft, answers SD questions and provides feedback to ensure the CRF content is consistent with the protocol endpoints and meets data collection needs
  - Study Team Members
    - PI: Principal Investigator
    - Stat: Statistician
    - SPA: Statistical Programmer Analyst
    - DM: Data Manager
    - PC: Protocol Coordinator
- SD updates the pCRFs based on study team feedback
- Study team provides final approval (documented via the Statistician)
- Forms sent for curation (check that NCI standards are being used)
- pCRFs are frozen and eCRF build begins

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eCRF Development

- Alliance Navigation Philosophy
  - Add folders one visit/cycle at a time based on data entered for the current visit/cycle
  - Five phases of data collection
    - Baseline
    - Treatment
    - Off Treatment
    - Clinical Follow-up: more rigorous data collection, typically collecting AE and Measurement data
    - Survival Follow-up: less rigorous data collection, primarily capturing late AE, progression, new primary and vital status

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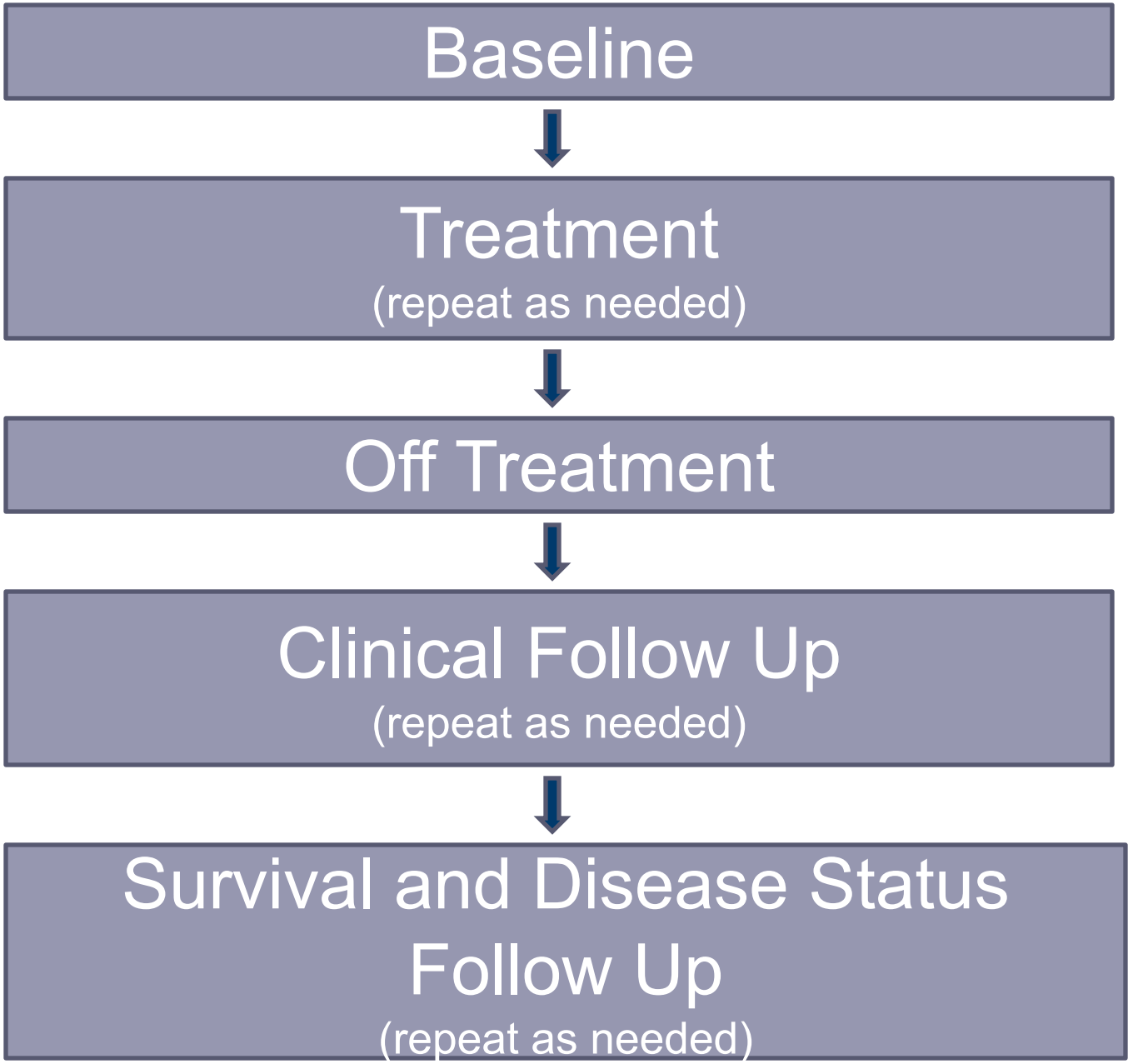
General navigation



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eCRF Development

- Patient Pathway Diagram (PPD)
  - Study team communication tool and specifications used for database design
  - Visual picture of patient pathways for data submission
    - Includes all pathways not just the expected path
  - Necessary for:
    - Folder and form roll-out
    - Tracking (folder target and overdue dates)

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eCRF Development

- Forms Tracking
  - Target dates are set indicating when forms within the folder are expected based on data entry and trial requirements.
    - The timeframes* for designating forms overdue
      - Baseline: 15 days from target date
      - Treatment: 15 days from target date
      - Follow-up: 30 days from target date

*NCI Standards for NCTN trials

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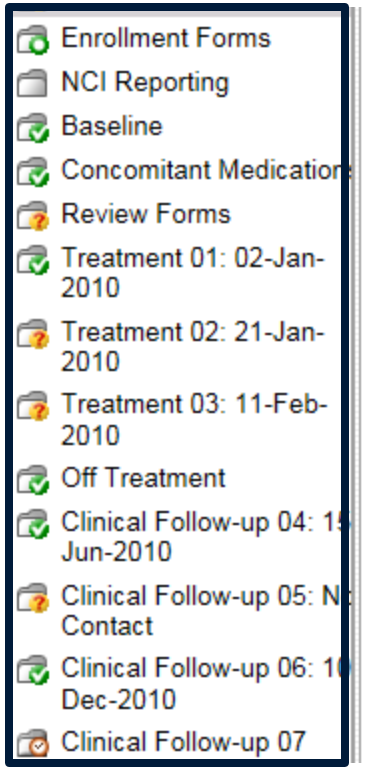
Display of Folders in Rave

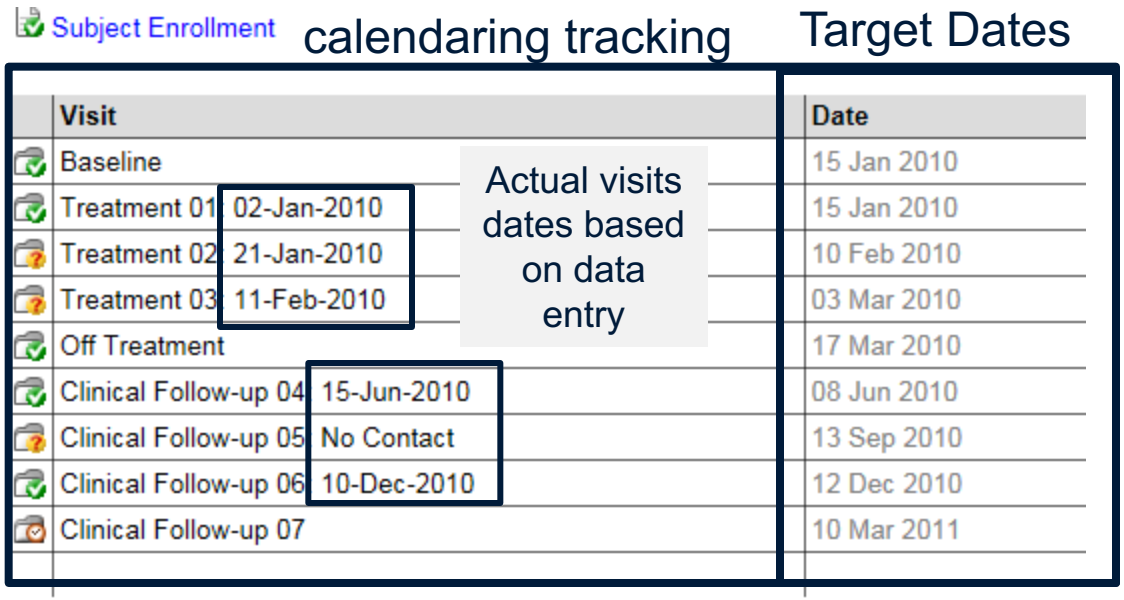
Example of Rave subject homepage

List of all folders



Visit folders with calendaring tracking

Target Dates



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eCRF Devlopment
Study Build Team & Process

High Level Process for Developing a Trial in Rave

	Planning	Building	Testing	Production
Tasks	Project Planning: request project setup, identify timelines and team members Requirements Gathering: includes pCRF review, PPD, and DSS development	Build/Copy/Install and Unit Test: eCRFs, reusable edit checks and custom functions, and study specific data validations	Validate, test and verify the build	Activation of trial in Rave including Rave readiness signoff
Study Team	PI, Stat, SPA, DM PC, CRA*	Stat, SPA, DM	Stat, SPA, DM, DMS, CM	Stat, SPA, PC, DM
Rave Build Team	SD	SD	SD	SD

**optional members*

Rave Feature: Role Specific Task Summary

Data Manager Role

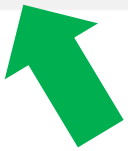
Task Summary: Site	Subjects
Requiring Signature	7
NonConformant Data	1
Requiring Coding	0
Requiring Translation	0
Open Queries	0
Answered Queries	0
Sticky Notes	0
Requiring Review	5
Requiring Verification	5
Overdue Data	0
Ready for Entry Lock	7
Ready for Data Lock	7
Cancel Queries	0

Site role

Task Summary: Site	Subjects
NonConformant Data	0
Open Queries	2
Sticky Notes	0
Overdue Data	0

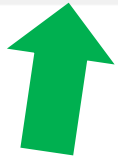
Rave Feature: Full Audit Trail

Audit	User	Time
User entered 'Yes (1)' reason for change: Entry Error	Kristina Laumann	02 Aug 2011 09:41:15
User closed query 'Data is required.' (Site from System).	System	02 Aug 2011 09:22:43
Query 'Data is required.' answered by data change (Site from System).	System	02 Aug 2011 09:22:43
User entered 'No (2)' reason for change: Entry Error	Kristina Laumann	02 Aug 2011 09:22:43
User opened query 'Data is required.' (Site from System).	System	01 Aug 2011 11:42:16
User entered empty.	Kristina Laumann	01 Aug 2011 11:42:16



Most current events are on the top

User responsible for event



Date and time of event

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Rave Feature: Forms Tracking

- Overdue forms are displayed in the Rave Task Summary by the clock icon 

  - All target and overdue data is configurable at the study level
- Expected and overdue material (forms & queries) reports available to sites on Alliance website

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Rave Feature: Forms Tracking

- Example Overdue Material Report

Patient, Initials, Date on, Last contact	Material	Item	Target Date	Overdue Date	Days Overdue
111111 Hospital USA FML 1/1/2015 4/12/2017					
	Rave Query	Treatment 20: 07-Jan-2017, RECIST Measurements	02/24/2017	03/10/2017	38
	Rave Query	Treatment 20: 07-Jan-2017, RECIST Measurements	02/24/2017	03/10/2017	38

Patient, Initials, Date on, Last contact	Material	Item	Target Date	Overdue Date	Days Overdue
222222 Oncology USA FML 1/31/2011 12/24/2016	Rave Form	Clinical Follow-Up 11: 21-Dec-2016, Supporting Documentation	12/27/2016	01/26/2017	81

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Rave Feature
Queries

- Rave allows for both system-generated and manual-generated queries
  - System-generated queries fire at the time a form is saved (system field edits and configurable edits)
  - Manual queries are created by selected roles and can be done at any time
    - Data Manager
    - Central Monitor

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Rave Feature
Queries

- Answering Queries
  - Sites can respond to queries by:
    - Modifying the data in the field

    - Provide an explanation in the user response box (free-text) if data cannot be entered

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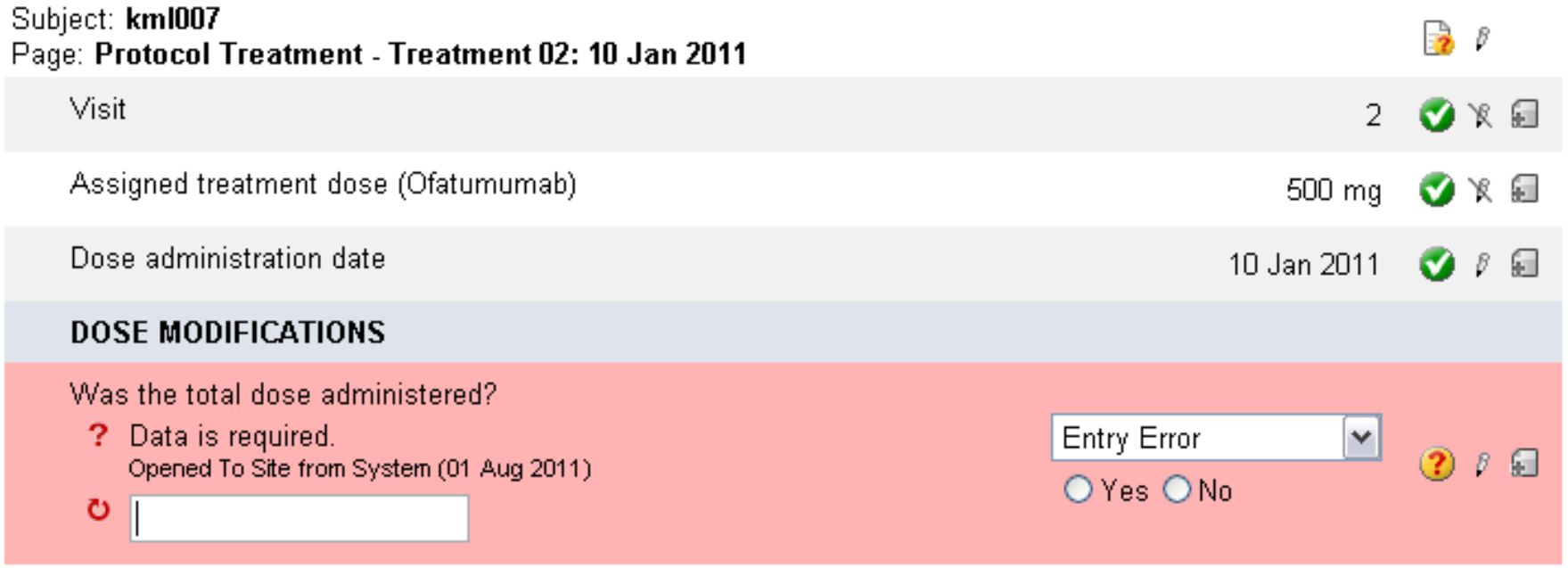
Database Design
Queries

Site gets immediate feedback (upon form save)



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Clinical Reviews Facilitated in Rave

- Eligibility Reviews
  - The DM will be flagged for eligibility review when all study identified forms are entered by the site

    For example:
    - On-study
    - Radiographic Imaging Assessment: Baseline
    - Supporting Documentation: Baseline
    - Patient Status: Baseline
  - The DM completes the eligibility review
  - DM notifies Study Chair in the case of questionable or ineligible patients via checkbox on the eligibility form and upload the necessary reports
  - Study Chair will review via Rave
    - If there is a disagreement, the DM is notified for arbitration

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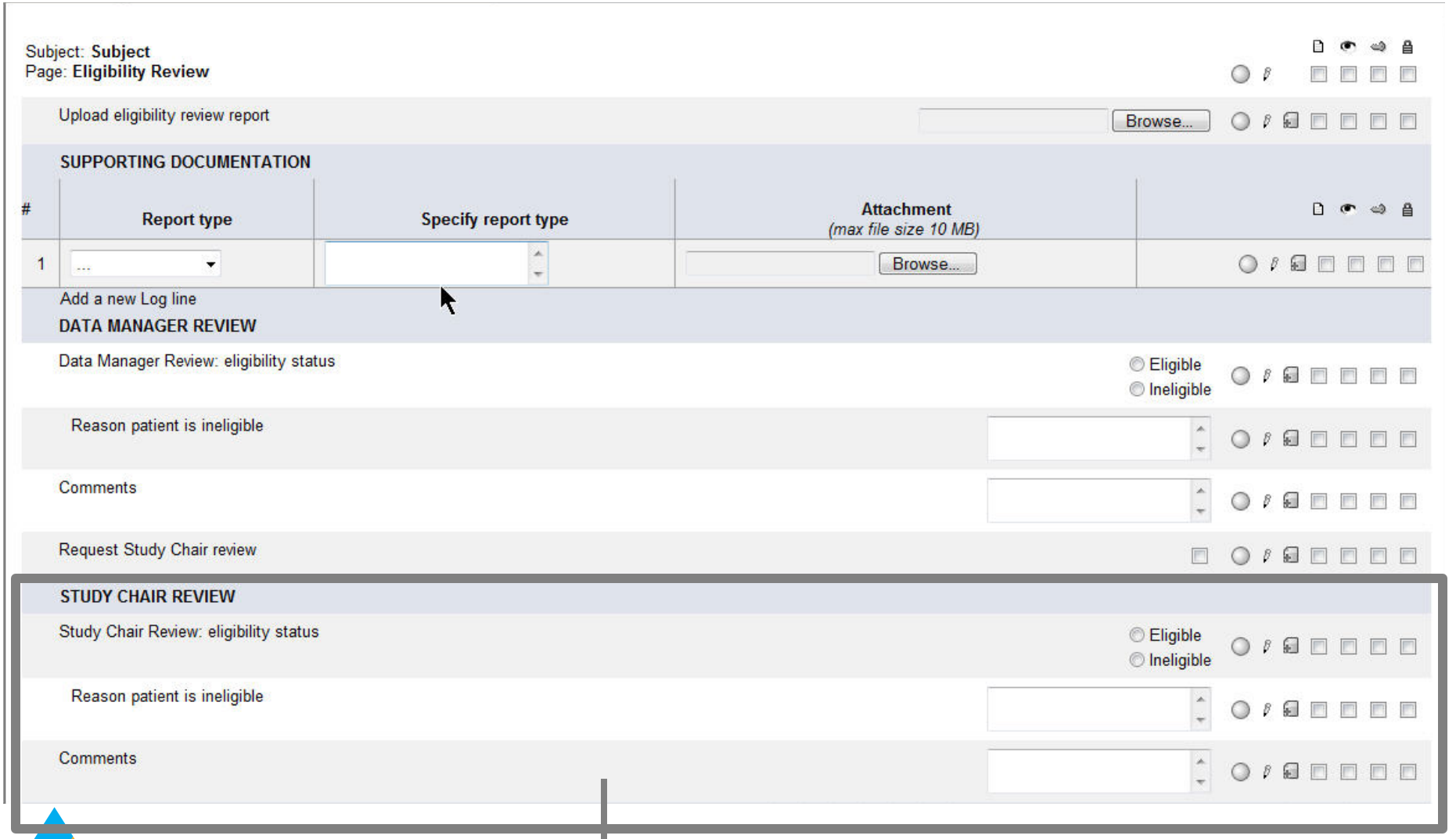
Eligibility Review Form



Completed by the Study Chair

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Clinical Review Facilitated in Rave

- Case Evaluation (endpoint) Review
  - Medical review of key clinical data conducted when a patient meets the primary study endpoint (study defined):

    For example
    - Progression
    - Death without progression
    - Follow-up completed without events above
    - Withdraw consent for all follow-up without events above
    - Confirmed lost to follow-up without events above

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Clinical Review Facilitated in Rave

- Case Evaluation Process
  - Data Manger (DM) is flagged to review within Rave
  - DM reviews data submitted for completeness & accuracy
  - DM runs the endpoint review report and attaches it to a form within Rave
  - DM sends cases to the Study Chair (SC) in Rave following Alliance Policy
    - First 100 pts, every 10 thereafter up to 300 and any problem cases
  - SC is flagged to their review via an e-mail and query
  - SC reviews data in Patient Summary Report and completes the Case Evaluation form (in Rave)
    - SC will have access to CRFs for Phase I or II trials
    - SC will not have access to CRFs for Phase III trials
  - DM reviews discrepancies or other problems noted by the SC and queries the site, if necessary
    - If there is a disagreement, the DM is notified for arbitration

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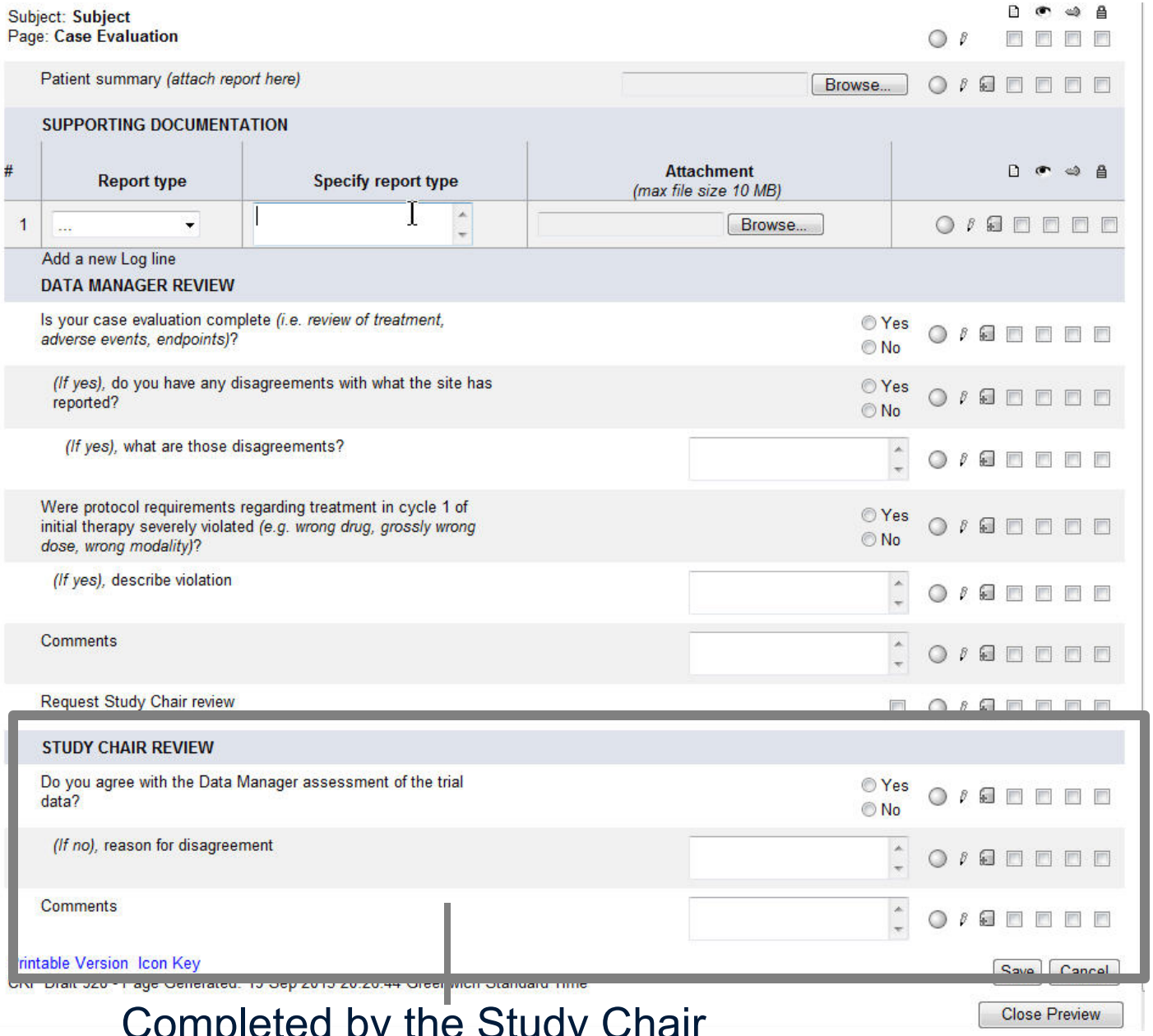
Case Evaluation Form



Completed by the Study Chair

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Keys Elements of Successful Data Collection

- Less is more
  - Data collection is costly
  - Collecting unnecessary data takes time and resources away from critical data elements
  - All data collected should be linked to a study aim
  - The number of solicited Adverse Events included significantly increases data collection and data management time. It also decreases the response time in Rave. Target < 10 whenever possible

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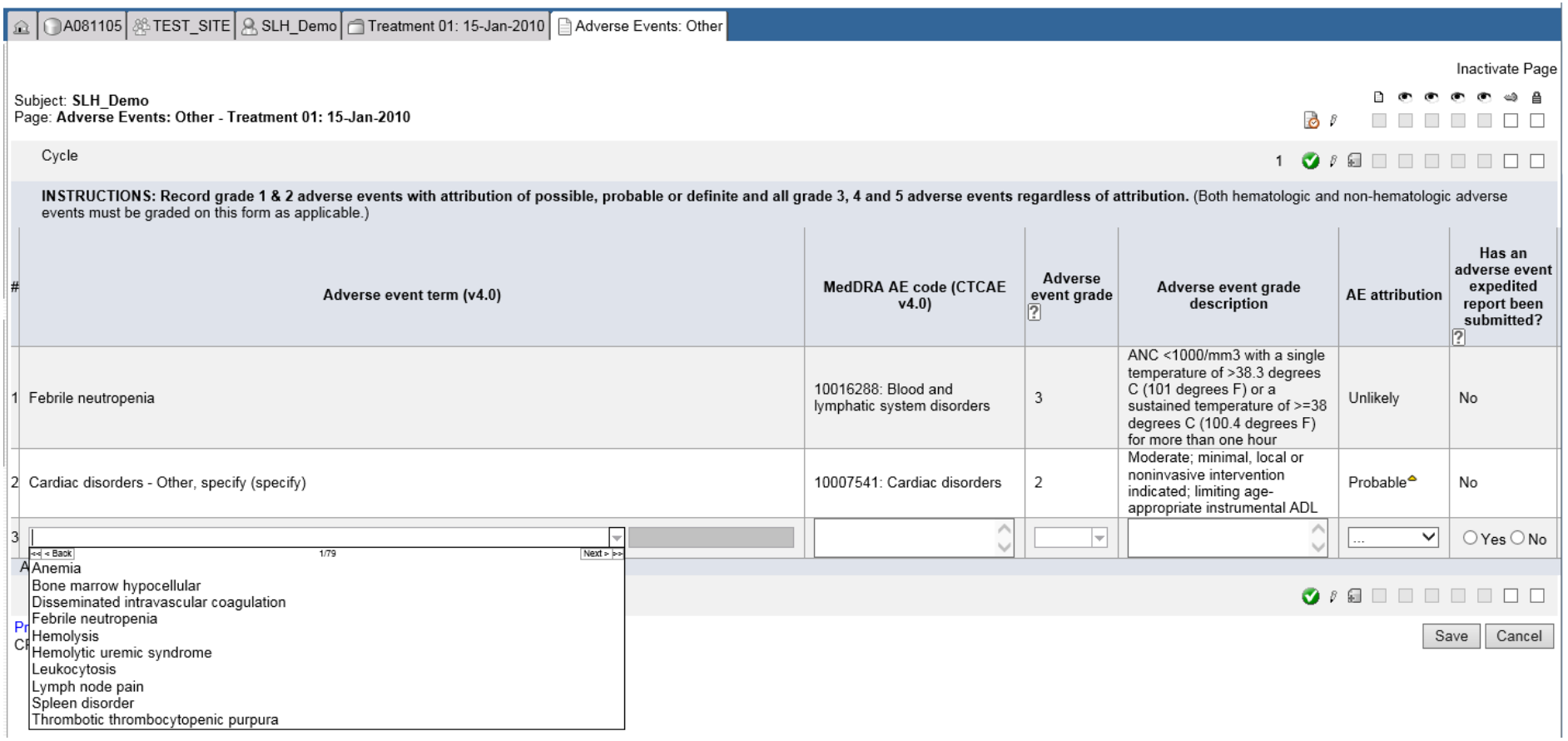
AE Example



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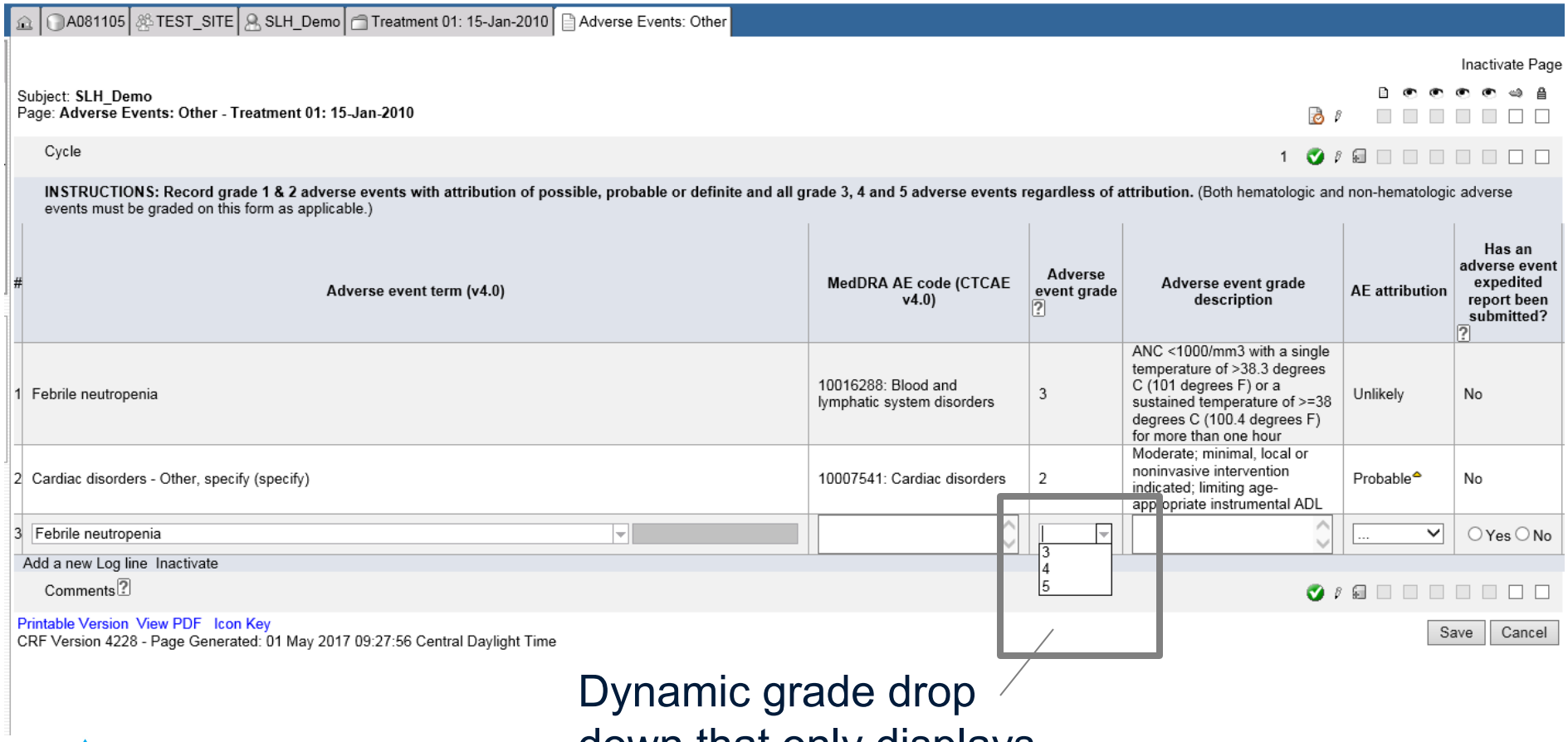
AE Example



Dynamic grade drop down that only displays grades appropriate for the selected AE term

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Key Elements of Successful Data Collection

- Case Report Forms are Critical
  - A lot of resources goes into developing the protocol, if the same level of effort is not put into the design of the case report forms, trial objectives will not be met
- Study Chair involvement is Crucial
  - SD are not disease or study experts, they need your input and review
  - It takes considerable resources to make changes after protocol activation (avoid migrations)

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Key Elements of Efficient Rave Builds

- Use the Standards whenever possible
  - Reduces build and testing time
  - Reduces curation time
  - Facilitates standardized outputs and reporting
  - Reduces data entry errors with familiarity of eCRF design by end users

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Questions???

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