Earned Value Management

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- **Earned Value Management** (**EVM**) is a project management technique used for measuring project progress in an objective manner.
  - EVM combines measurements of
    - technical performance (i.e., accomplishment of planned work),
    - schedule performance (i.e., behind/ahead of schedule)
    - cost performance (i.e., under/over budget)
  - When properly applied, EVM provides an early warning of performance problems.
  - EVM promises to improve the definition of project scope, prevent scope creep, communicate objective progress to stakeholders, and keep the project team focused on achieving progress.

- HHS Acquisition Regulation 352.234 (Notice of Earned Value Management System) cites compliance with ANSI-748 EVM Guidelines and that the contractor has to obtain validation and acceptance of its EVM system by the Cognizant Federal Agency .

- BARDA follows HHSAR EVM Regulation for all IT projects and construction contracts

- Biomedical projects may not meet "major systems investment" requirement

- BARDA implementing "7 Principles of EVM" requirements in place of ANSI-748 EVM Guidelines
  – Provides flexibility to BARDA and contractors
  – Removes requirement for contractor to be compliant with ANSI
  – Implemented a Tiered Approach to EVM

- Tier 1
  - HHSAR requirement of full EVM requirement ANSI 748 compliant (334.2 and Full EVM-Contracts greater than or equal to $25M and must be a major systems investment (facility or IT).
- Tier 2
  - Contracts greater than or equal to $25M and/or TRL less than 6, 7 Principles Tier 2 Implementation
- Tier 3
  - Contracts greater than or equal to $10M but less than $25M and/or TRL less than 6, 7 Principles Tier 2 Implementation with reduced requirements.

- Earned Value Management at BARDA in 2009 and we currently have 33 projects with EVM requirements.
  - Tier 1
    - 3 (Flu Division)
  - Tier 2
    - 19 (14 CBRN, 5 Flu)
  - Tier 3
    - 11 (CBRN Division)

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BARDA's Approach to EVM and Contractors

- We view the relationship as collaborative
- Support is always available
  - ➢ Tools support
  - ➢ Process support
  - ➢ Report templates and examples
- Belief in utilizing "EVM Lean" as an effective program management tool
- EVM should not be cost prohibitive and a "chore"
  - ➢ Studies indicate that cost of EVM should be no greater than 1-2% of total program cost
  - ➢ Misunderstanding of true EVM requirement can lead to unnecessary rigor where the time and cost can outweigh the benefits
- We are here to help!

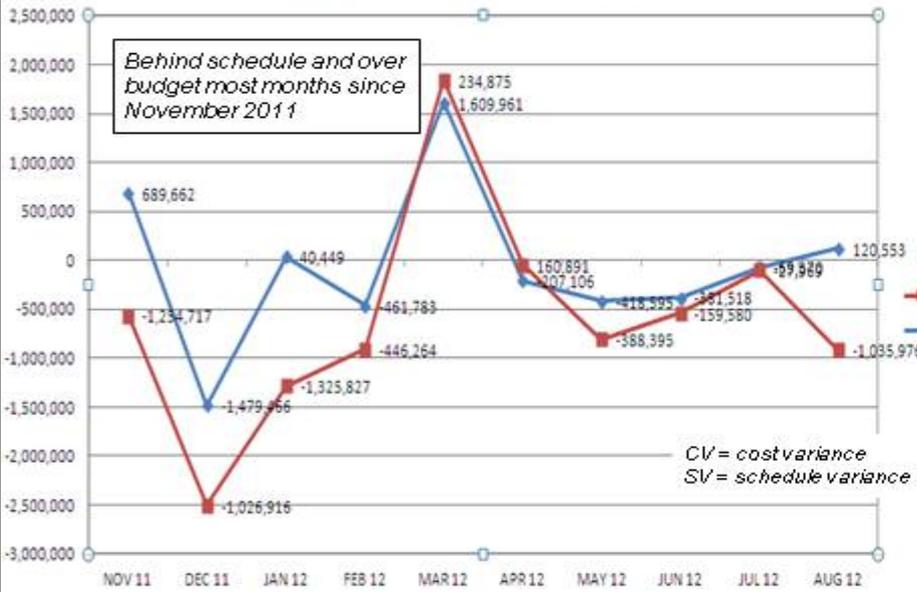*ASPR: Resilient People. Healthy Communities. A Nation Prepared.*

Why does BARDA use EVM?

- To ensure that contractors use effective, disciplined management control systems and procedures which provides data that:
  - Properly relate cost, schedule and technical performance
  - Are valid, timely and auditable
- Confidence in contractor's internal management system translate to BARDA receiving
  - Objective (rather than subjective) contract performance information
  - Cost and schedule impact of technical problems
  - Capability to trace problems to source (hardware, software, etc.) and responsible organization
  - Narrative analysis of problem identification, impact to the program and corrective action
  - Assist BARDA in identifying and managing risks

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Example of BARDA Internal EVM Data Reporting

CV/SV Chart thru August 2012

Behind schedule and over budget most months since November 2011

CV = cost variance
SV = schedule variance

Cum CPI/SPI Chart thru August 2012

CPI is less than one and the TCPI is greater than one. Since program is still in early stages performing at TCPI is still possible.

Cum CPI = cumulative cost performance index
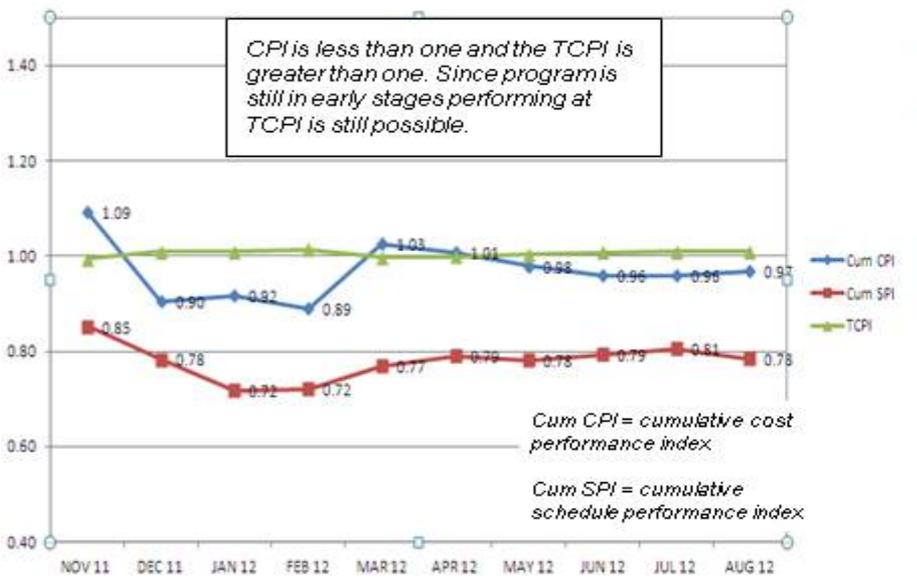
Cum SPI = cumulative schedule performance index

Contractor Dashboard — Earned Value Management Through August 2012
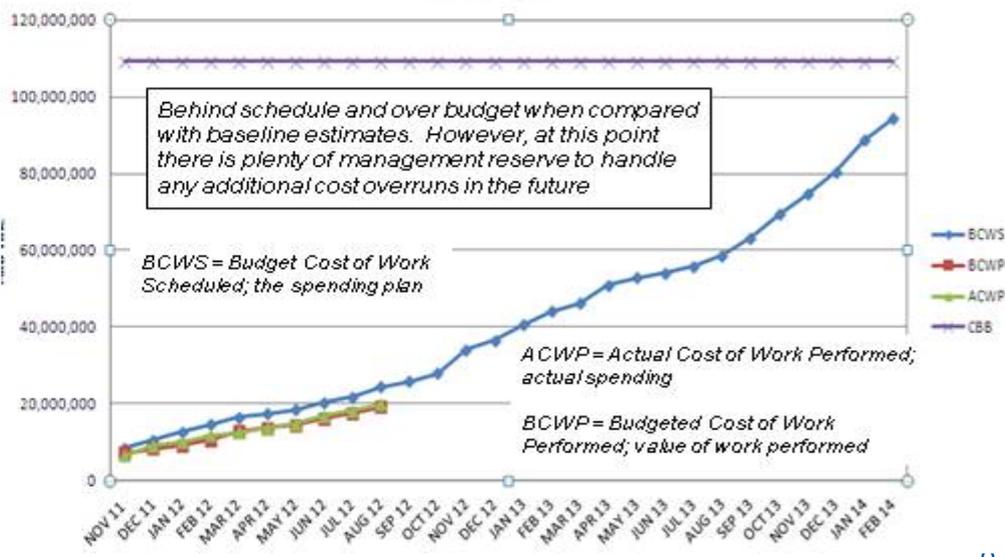
- Through August 2012, Contractor has a negative schedule variance of $5.65M (negative change of $1.036M in August) and a $432K negative cost variance (positive change of $121K in August).

- 21% (-$1.016M) of the cumulative negative schedule variance is WBS 1.6.3. The delay in the development impacted the start of the manufacturing campaign by 3-4 months. However, by selecting a single format for the candidates based on previous data, has allowed the Contractor to pull the projected start of the phase 1 clinical study (WBS 1.4.1) forward to offset any delays in the start of manufacturing . . .

- 20% (-$1M) of the cumulative negative schedule variance is in WBS 1.3.1. Variance is due to delays in the development program and team's decision to advance candidate first for manufacturing.

Performance Assessment = Yellow

SPA Graph

Behind schedule and over budget when compared with baseline estimates. However, at this point there is plenty of management reserve to handle any additional cost overruns in the future

BCWS = Budget Cost of Work Scheduled; the spending plan

ACWP = Actual Cost of Work Performed; actual spending

BCWP = Budgeted Cost of Work Performed; value of work performed

Earned Schedule

- Earned Schedule (ES) is an extension to Earned Value (EV). ES is another project control technique to be used to understand risk in a project.

- ES provides a more accurate determination of the completion date. ES uses EV performance data to generate the time-based information and as with EV, uses very similar calculations to predict future performance.

- The basic principle of Earned Schedule is simple:
  – Identify the time at which the amount of Earned Value (EV) accrued should have been earned. ES then quantifies what date the EV should have been earned compared to when the EV will likely be earned. The difference between those two dates changes the completion date of the project. Risk mitigation efforts must then be used then to bring the completion date back into compliance.

Questions?

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