Manufacturing Metrology and Standards

for the Health Care Enterprise

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NIST
National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

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The Health Care Industry and MEL

Health care industry

- Spiraling costs

- Significant impact on manufacturing

- Expanding market for medical devices

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- Similarity to manufacturing

- Proven expertise in system integration

- Success in medical device metrology

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Data / Information Flow: Health Info. Tech

Presentation

• *Hantavirus cardiopulmonary syndrome details*
• *Eradication and treatment plan*

• *Electronic health records*
• *Blood samples*

• **Plan of Action**
• **Disease Characterization**

• **Review**
• **Analysis**

• *Mice/insects carriers*
• *Sin Nombre Virus*
• *Pathways of pathogen action*

• **Agent ID**
• **Disease ID**

• *DNA and homologues*
• *Possible pathogens*

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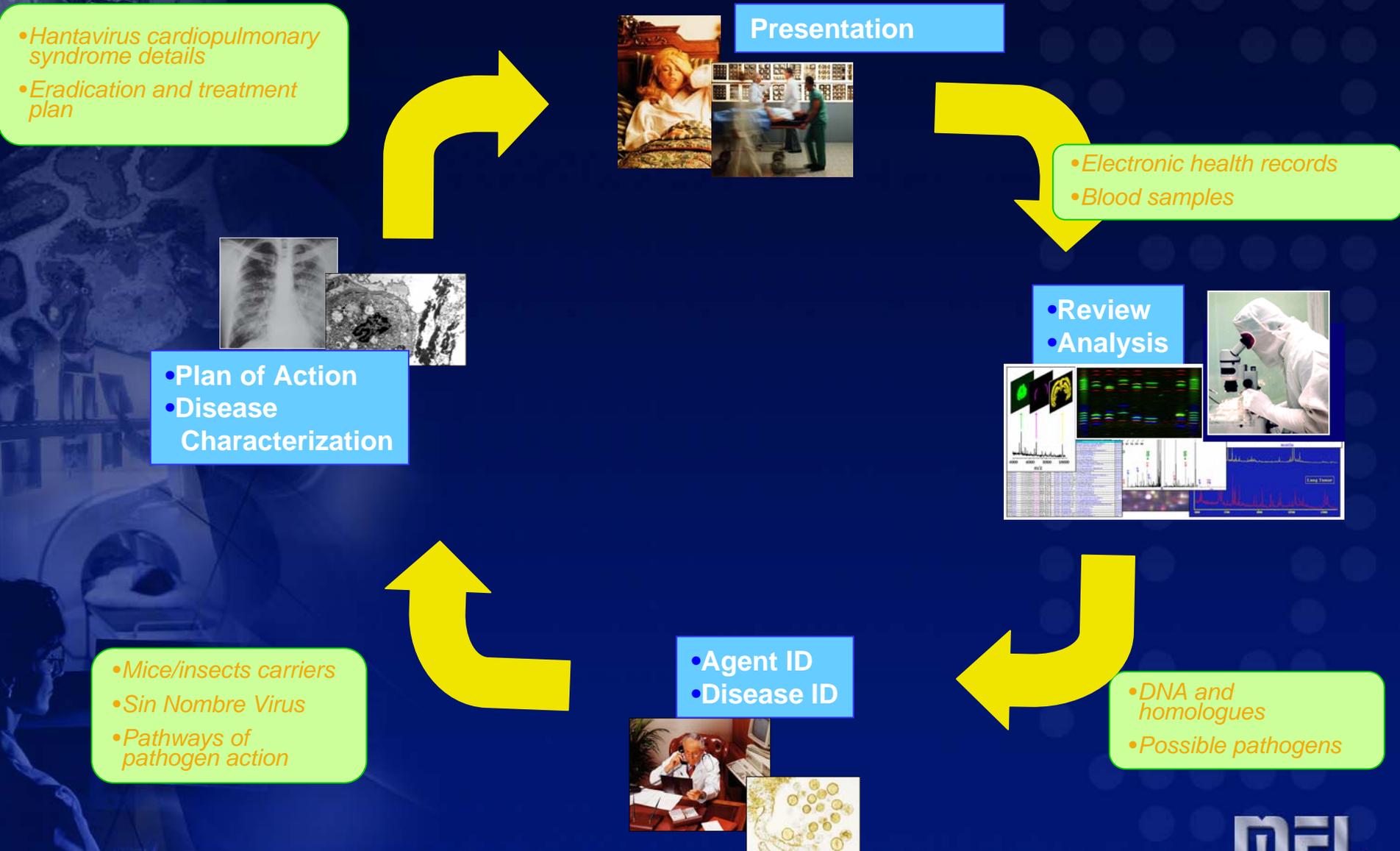
# Battlefield Scenario

Battlefield


Battlefield OR

WRAMC (Walter Reed)
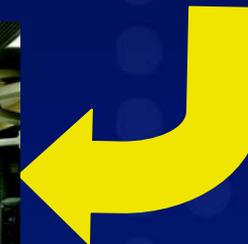
Program Goal

Help improve efficiency and quality of the health care enterprise through innovation in *standards* and *technology* for *interoperability* and *metrology*, building on MEL's proven expertise in manufacturing.
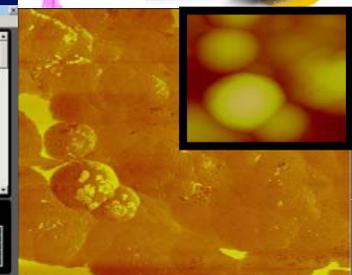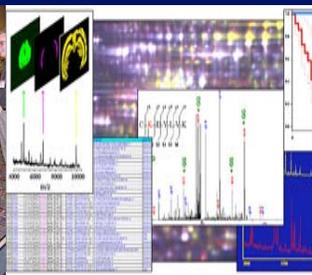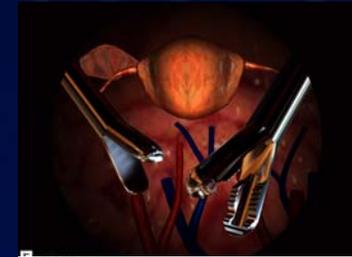
Strategic Areas and Projects

Strategic Area	Systems Interoperability	Device Metrology
Projects	Semantic Interoperability (Clinical Informatics)	Mobility Devices for the Disabled
	Computational Proteomics	Hearing Devices Metrology
	Device Supply Chain Study	Intelligent Assistive Surgical Devices
	Simulation and Visualization Study	Surface Characterization
	Device Interfaces for ORF	Metrology for Nano Drug Delivery Systems
MEL Expertise	Ontology: Theory and Building	Robotics
	System Integration Techniques	Long Tradition of Metrology
	Testing Tools & Techniques	Foundations of Nanomeasurements

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Why NIST?

- Internationally recognized organization for metrology and standards

- Standards and measurements for the health care industry are not in the scope of other agencies' missions

- Close ties to NIH and other govt. agencies

- MEL has proven expertise in addressing similar problems in the manufacturing sector

- Requests for active NIST participation from external sources (government, industry)

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Partners for Impact

- Clinical
  - Cleveland Clinic, Kaiser Permanente, Union Memorial Hospital, Mayo Clinic, ….
- Pharmaceuticals
  - Pfizer, Eli Lily, …
- Device Manufacturers
  - Honeywell, GE, Siemens, …
- Universities
  - Georgetown, Stanford, New York, Univ. of Maryland, Univ. Pittsburgh, ….
- Consortia
  - CIMIT (MA), Partners Healthcare,RSNA, AAOS, …..
- Software Companies
  - IBM Life Sciences, …,
- Standards Organizations
  - HIBCC, HL7, ….

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Summary

- Health care costs are having a negative impact on the nation's competitiveness

- MEL is well poised to address strategic health care problems

- Systems interoperability and device metrology are MEL's key strengths