

New Models of Clinical Discovery & Science: Progress and Lessons Learned the Front Lines of the Dept. of Veterans' Affairs Transformational Initiatives

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Traditional models of clinical discovery, science, and care have led to an unfortunate gap between the amount of resources invested and the return on that investment. The limitations of traditional models have become even more apparent with the explosion of biological data thanks to lower cost high throughput sequencing. MAVERIC is a Research and Development organization within the Department of Veterans Affairs charged with designing and implementing new models of science and care as part of the VA's multi-year, multi-million dollar "Transformational Initiatives." Progress & challenges related to the following initiatives will be discussed:

A "point of care" clinical trial system implemented in 3 hospitals thus far turns routine care situations into a pragmatic randomized controlled trial with all of its scientific operations occurring behind the scenes in the EMR. Learn the strengths and weakness of this novel approach and how it can be used to tackle the problem of biomarker validation and "tailored" oncology interventions.

The Million Veteran Program has consented and collected the DNA of more than 100k volunteers in less than one year of full operation. Learn how survey, specimen, DNA, and EMR data are combined and made accessible to researchers in a high performance computing environment to help discover new relationships between biology, pharmaceuticals, and health.

Despite the availability of billions of data points, little is done to answer the three critical questions upon which discovery and improvement is predicated: 1) what are we doing; 2) to whom are we doing it and; 3) is it working? Learn of a new healthcare intelligence platform that combines machine learning, natural language processing, visualization, and modeling to turn mountains of raw data into insights.