



Joslin Vision Network and SpectRx Projects: Joslin Diabetes Center, Department of Defense, and Veterans Health Administration Telemedicine Initiative – Dr. Deborah Birkmire-Peters

Background: The Diabetes “Detection” and “Care and Treatment” Project is a unique collaboration among the Joslin Diabetes Center (JDC), the Veterans Health Administration (VHA) and the Department of Defense (DOD). The Joslin Vision Network (JVN) telemedicine initiative provides a technology platform for facilitating diabetes diagnosis, management (including diabetic retinopathy) and treatment. The initiative is designed to access all patients with diabetes into a cost-effective quality eye care program crossing cultural and geographic boundaries. This program incorporates three components:

1. SpectRx: Identification of undiagnosed type 2 diabetes using a prototype technology developed by SpectRx. The instrumentation relies on intrinsic lens fluorescence measurements to assess exposure of lens proteins to elevated glucose levels, which reflect the likelihood of type 2 diabetes.
2. Joslin Vision Network (JVN): Remote access of patients with diabetes into an annual eye examination program, with diagnosis of diabetic retinopathy levels at centralized subspecialty centers using JVN enabling telemedicine technology.

Organization: Deborah P. Birkmire-Peters, Ph.D. - Principal Investigator
COL Weldon Dunlop, M.D. - Principal Investigator
COL Thomas Taylor, M.D. - Principal Investigator
LTC James Olsen, M.D. - Co-Investigator
MAJ David Smith, M.D. - Co-Investigator
Kari-Jo Coll, R.N. - Co-Investigator
Robert Whitton - Akamai Project Manager

Mission Statement - To validate and demonstrate the Joslin technology/methodology in VA/DOD primary care settings and establish whether, when compared to current implementation of care, it will improve one or more of the following:

- access to eye care
- detection and treatment of diabetic retinopathy
- efficiency
- patient/provider satisfaction

Goals and Objectives -

Objectives -

1. SpectRx: To validate and field the SpectRx non-invasive technology and develop the clinical protocols for its use.

2. JVN: To validate the Joslin technology using the low light level camera for acquisition of retinal images for the evaluation of diabetic retinopathy and to determine if patient access is improved with use of this technology.

Goals -

1. SpectRx: To develop a non-invasive testing method to aid in early detection of diabetes.
2. JVN: To accomplish the universal prevention of vision loss from diabetic retinopathy by 2020 without regard to geographic or cultural boundaries.

Current Status

Primary Accomplishments-

1. Research protocols for SpectRx and JVN revised and re-submitted to Scientific Review and Human Use Committees for final approval.
2. JVN equipment installed - January 1999.
3. Site visit by Drs. Lloyd Aiello, Sven Bursell, and Jerry Cavallerano, Joslin Diabetes Center to initiate project.
4. Met with Dr. Marjorie Mau to plan joint UH School of Medicine, Joslin Diabetes Center, and Tripler Army Medical Center project.

Project Timelines -

1. Hire JVN Coordinator - April 1999.
2. Begin SpectRx deployment - May 1999.
3. Complete validation of reading center for JVN - June 1999.
4. Begin consultations between Honolulu VA and TAMC - June 1999.

Strategic Direction

Accomplishment of Objectives-

Field testing and clinical trials will be accomplished in-house.

Impact on customers-

Our customers are remote patients and providers of health care. Success means improved patient care, better patient outcomes, reduced cost.

Budget/Financial Status and Information

Funding stream - funding awarded in FY99

Spend Plans - see attached budget (on file in Akamai office)

Outyear Funding - see attached FY00 budget (on file in Akamai office)

Contract Vehicles, task statements

DO's, CDRL's

Business Associations

Corporate partnerships - n/a

University Partnerships - Joslin Diabetes Center/Harvard Medical School

Government Partnerships - US Army Research Laboratory
Honolulu VA
New England VA

TAMC IMD - network assistance, software assistance, hardware assistance

Project Security

System security: N/A at this time

Standards compliance measures: uses open architecture, will interface with existing systems and can be incorporated into a “firewall”.

Summary

Diabetes mellitus (DM) is a major public health concern associated with significant neurological, cardiovascular, ocular and renal complications. More than 7 million or more individuals have DM but are unaware of their disease. Furthermore, despite demonstrated means to reduce the risk of vision loss from diabetes, DM remains a major cause of blindness. The Diabetes “Detection” and “Care and Treatment” Project is a unique collaboration among the Joslin Diabetes Center (JDC), the Veterans Health Administration (VHA) and the Department of Defense (DOD). The Joslin Vision Network (JVN) telemedicine initiative provides a technology platform for facilitating diabetes diagnosis, management (including diabetic retinopathy) and treatment. The initiative is designed to access all patients with diabetes into a cost-effective quality eye care program crossing cultural and geographic boundaries.