



**Summary of Government-Funded
Virtual Care Center Programs and Research Results
Using InforMedix's Med-eXpert Database, Repository and Communications System; with
the Med-eMonitor Appliance**

RESEARCH STUDIES AND RELATED PUBLICATIONS

SCHIZOPHRENIA

University of Texas Health Science Center, San Antonio

Funded by NIMH Grant

- **Results:** *Demonstrated “Improved Medication adherence from a baseline of 52% (prior to using system) to over 94% (after 3-months usage)”*
- **Publications and Presentations:**
 - “The Med-eMonitor™ for improving adherence to oral medication in schizophrenia”, Bendle S, Velligan DI, et.al: Schizophrenia Bulletin, 31(2): 519, 2005
 - International Congress of Schizophrenia Research 2005
 - “Intervention to Improve Adherence to Anti-psychotic Medication”, Velligan, DI, Weiden, PJ: Psychiatric Times, August 2006, Vol XXIII, No. 9
 - The Clinical Handbook of Schizophrenia, 2008, Chapter 21, Environmental Supports, pg 207-213
 - This initial program has been expanded to a \$2 million multi-site, multi-year program funded by the NIMH based upon the earlier positive results

The Baltimore Veteran's Administration Hospital

Funded by STTR Grant under SBIR Program

- **Results:** *Demonstrated that “The Med-eMonitor System provided for compliance enhancement with medications and protocols, ease of central evaluation by treating professionals, additional education, and reduced on-site evaluation in chronic schizophrenics.”*
- **Publications:** “Feasibility of Using the Med-eMonitor System in Monitoring and Enhancing Research Protocol Compliance and Health Status in Schizophrenia,” Ruskin, PE, Van Der Wende, J, et.al.: Drug Information Journal, 37 (281-289), 2003

... and Heart Failure, High Blood Pressure**Wayne State University Research Team at the Detroit VA Hospital
Funded by NIH Grant***Initial Findings -*

- **Results:** *Indicated that “Patients in the compliance device group had a 94% medication compliance rate, and a 96% compliance rate with entering daily weight and blood pressure data into the device. QOL improved significantly from baseline to 3-months follow-up (ANOVA, $p=0.006$)”*
- **Publications:** “Pilot Study of a Web-Based Compliance Monitoring Device For Patients with Congestive Heart Failure,” Artinian, N, Harden, J, et. al., Heart & Lung, 2003: 32, 226-233

Additional Findings -

- **Results:** *“Quality of life improved significantly from baseline to 3-month follow-up (ANOVA, $P = .006$).”*
- **Publication:** “Telehealth as a Tool for Enhancing Care for Patients with Cardiovascular Disease” Artinian, N, Journal of Cardiovascular Nursing, Vol. 22, No.1, pp 25-31, 2007

... and Diabetes**St. Vincent Healthcare System, Billings Montana
Funded by Center For Healthy Aging Program (Federally Funded)**

- **Results:** *“Average medication adherence rates increased from a baseline of 40% to over 92%, HbA1c levels dropped an average of 18.7% after 3 months patient use ($p<.002$)”*
- **Presentations** (3) (4) “Remote Monitoring and Management of Rural Diabetic Patients Using a Web-based Medication Adherence/ePRO Monitoring Device” Farberow, B, Disease Management Congress, 2005

... and Diabetes, Congestive Heart Failure, High Blood Pressure**Medicare Health Support Program in Tennessee
Funded by CMS**

- XLHealth was the chronic disease management company providing the program.
- InforMedix technology was linked to ADT WellHealth call center and worked very successfully
- The Med-eXpert System delivered a comprehensive medication and care plan adherence program to Seniors with congestive heart failure, high blood pressure, and diabetes using their existing medication storage containers
- 90% medication adherence rate, 93% response rate to answering health status questionnaires, 90% response rate to reminders about self care checks and healthy behaviors, in Senior Citizens with average Medicare Severity Index of 2.5, and fifth and sixth grade educational levels

- 1480 actionable alerts were generated from InforMedix's Med-eXpert System including missed medications due to side effects, ran out of medications, potential signs of impending stroke, sudden development of cracks and sores on the patients' feet, worsening depression, etc.
- Results were presented by XLHealth and InforMedix at the Ninth Population Health & Disease Management Colloquium on Tuesday, March 3, 2009 in Philadelphia, PA

... and Diabetes, High Blood Pressure, High Cholesterol

University of Pennsylvania, Med-eMonitor System to High-Risk Diabetes Patients
Self-Insured University that receives significant federal funding

- Patient adherence rates were improved
- Patients were satisfied with the program

... and Stroke Prevention in Patients with Atrial Fibulation (Abnormal Heart Rhythm)

University of Pennsylvania Specialty Coagulation Clinic
(Stroke Prevention Programs)

Funded by Commonwealth of Pennsylvania, Aetna Foundation, National Heart Lung and Blood Institute

- Successful Phase I program enrolled 20 patients in a lottery with a chance of winning cash prizes for proper medication adherence. All subjects received an InforMedix Med-eMonitor with a daily reminder feature that monitored medication adherence. The percent of out-of-range INRs decreased from 35.0% to 12.2% during the intervention, before increasing to 42% post-intervention. The mean proportion of incorrect pills taken during the intervention was 2.3% incorrect pills, compared with a historic mean of 22% incorrect pill taking in this population.
- Aetna has funded the expansion of this program into Phase II, which includes a novel, lottery-based reward system whereby adherent patients are automatically enrolled in a lottery by InforMedix's Med-eXpert System, and are notified by their Med-eMonitor. The lottery awards cash prizes to adherent patients. 100 patients were successfully enrolled and completed this research program.
- In March 2009 an additional 268 patients began enrollment into a Phase III research program, through funding by the National Heart Lung and Blood Institute

HIV

University of California, San Francisco HIV Program

Funded by STTR grant

- Phase I program successful at achieving 89.5% medication adherence among HIV+, drug abusing, seriously mentally ill, urban poor patients. Planning submission of Phase II application
- Med-eMonitor-measured adherence was associated with unannounced pill count adherence (as measured via unannounced visits to patients' homes)
- Unannounced pill count adherence increased 9.4% during Med-eMonitor use among 15 patients with unannounced pill counts prior to and during Med-eMonitor use (p=0.027)
- Results were presented at the 2008 International Association of Physicians in AIDS Care (IAPAC) Medication Adherence Conference, and were submitted for publication.

INDEPENDENT CITATIONS IN MEDICAL JOURNALS AND PUBLICATIONS

“**Practicing Medicine in the 21st Century**”, Chapter 13 – Dealing or Succeeding with Disease Management, page 218 by Dr. Harry Leider (CMO of XLHealth) and reviewed by Dr. David Nash (Chair of Disease Management at Jefferson Medical Center, Philadelphia): 2006:

... InforMedix Med-eMonitor and Med-eXpert System

Attention to medication adherence is an essential element of DM (i.e. Disease Management) programs. This Med-eMonitor solution was designed for use in the home and addresses adherence by offering a combined medication organization, reminder and education system, and an “e-health diary.” The compact system can be mailed to the patient and programmed remotely via the Internet. Up to five medications are placed into a portable compartmentalized device that prompts the patient for each of their medications and automatically tracks adherence. Once the compartment is opened, health information and questions can be displayed as determined by the clinical protocol and physician. Adherence data are downloaded on a daily basis and available to the clinical team via the web. The Med-eMonitor System was successfully piloted in patients with diabetes, heart failure, and schizophrenia.

InforMedix Med-eXpert System Solutions consistently achieve medication and care plan adherence rates of 90% or more across multiple chronic disease populations, as documented by the above academic medical virtual care center programs and peer-reviewed journal articles. Without intervention, average rates of medication adherence are 50%.