



June 19<sup>th</sup>, 2015

**RE: Senate Chronic Care Working Group**

Dear Senator Isakson and Senator Warner,

My name is Stephen J. Schueler. I have been an emergency medicine physician for over 30 years. I am also the Founder and President of DSHI Systems, a 26 year-old health informatics company, located in Rockledge, Florida. I am writing to you to inform you of what my company is doing now for the Department of Veterans Affairs with regard to chronic care management. Like Medicare, the VA has a large percentage of poly-chronic patients who consume the majority of the VA health budget.

I would like to share with you what we have learned building a chronic care management solution for the VA. During its development, I have had the pleasure to speak with many primary care providers, both inside and outside the VA. My knowledge of medicine and experience in medical software development provides me with an uncommon view into how this problem might be solved.

In this letter, I will outline how we believe chronic condition management can be performed effectively and inexpensively in both the government and private sectors. If we improve disease control in each poly-chronic patient, we should see an overall reduction in emergency room use and hospitalizations.

**Background**

DSHI Systems has provided a national triage solution (*VHG Plus*) to the US Department of Veterans Affairs for the past 17 years. Our software is deployed in all twenty Veteran Integrated Service Networks (VISNs) on regional servers. The software is used by registered nurses to handle in-bound phone calls from veterans who have developed symptoms and don't know what to do.

*VHG Plus* is a clinical decision support /workflow application that guides the nurse through a medical interview, and then makes a triage decision based on the collected data. In short, it performs a risk assessment that answers the question: *When* should this veteran be seen by a doctor and *where* should that visit take place?

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VHG Plus benefits include the medically-appropriate re-direction of care. This is good for the veteran and provides cost-savings for the VA. It also substantially reduces the total time a nurse spends assisting veterans with acute symptoms. Another cost-savings for the VA. Before DSHI, VA nurses would spend as long as an hour on the phone attempting to understand what to do. Today, that decision is standardized, and is made in less than five minutes. Before DSHI, no two nurses performed triage the same way. Today, the process is standardized, with all nurses performing high-quality decision making. The act of using the system generates a stream of xml data (pre-claim data) that has proven very useful to the VA Department of Public Health in the prediction of influenza outbreaks.

### **Chronic Care Management**

As you are aware, the VA employs a primary medical home model. The patient is in the center of the patient-aligned care team, or PACT. The PACT teams are primarily responsible for managing chronic disease patients in the VA. PACT teams are comprised of a single primary care provider and support staff. Primary care providers may be physicians, ARNPs, or PAs. Support staff include an RN, LPNs, and medical assistants. It is important to note that over 50% of the team has limited clinical skills. Each team may support as many as a couple thousand poly-chronic veterans. No small task.

Up until 2012, VHG Plus users were largely nurses based in VA medical call centers. Since 2012, the PACT teams have become our fastest growing segment of nurse users. This is because poly-chronic patients are more likely to suffer acute symptoms and require triage. Within 2 months of using VHG Plus, PACT teams asked DSHI physicians to create an application that would allow them to evaluate patients with one or more chronic diseases on a monthly basis.

### **Creating Condition Expert**

*VHG Plus* provides clinical workflow and decision support for acute symptoms. The new software would be similar in design, but it would need to support the evaluation of veterans with multiple chronic conditions. The start point wouldn't be a symptom, it would be a chronic disease.

Discussions with PACT and VA leadership, helped us create the following requirements:

1. The software must accommodate a person with minimal clinical knowledge. Our target user was to be a "health coach," traditionally defined as an LPN or a certified medical assistant (CMA).



2. The software would need to automate the medical history, much like the triage history in VHG Plus.
3. The medical histories would need to be designed to support clinical workflows for a wide variety of the top chronic diseases. They would also need to account for common overlapping conditions, such as coronary artery disease and stroke.
4. The medical histories would need to collect a wide variety of data types: symptoms, biometrics, lab data, lifestyle, self-monitoring, diet, medication use, mobility, function, co-morbidities, psycho-social, past hospitalizations, vaccines, and adherence issues concerning physician visits, treatment compliance, and recommended laboratory testing.
5. The software would need to be able to interpret combinations of symptoms, biometric data, and past medical history for the purpose of identifying patients whose condition had become unstable or poorly-controlled.
6. The software would need to generate objective measures that could be trended. One such metric would be a scoring system that would reflect overall disease control. Another useful metric would track patient adherence with the treatment plan.
7. The software would need to identify potential gaps in care so they could be shared with the primary care provider.
8. The software would need to automatically generate a care plan using the information obtained in the guided medical history.
9. The software would need to generate a structured chronic care management note using standard medical terminology. This would allow primary care providers to quickly review the note and comprehend the status of the patient. The notes would need to be concise, accurate, and actionable for the primary care provider.
10. The software would need to provide quick access to easy-to-read patient education content.
11. The software would need to create a web-based tool that could be shared with the patient. This would allow the patient to learn on their own time, and at their own rate. The web tool should be personalized, containing only what they need to know to improve their disease control.
12. The output data from the system should be xml, allowing it to be easily re-purposed for population health.

### **Condition Expert Pilots**

DSHI Systems completed work on Condition Expert at the close of 2014, meeting the dozen aforementioned requirements. Over the past 6 months, our pilots in the VA have expanded to include five Veteran Integrated Service Networks (VISNs): VISN 22, VISN 10, VISN 8, VISN 17, and VISN 18. Each site is provided with secure, 24/7 access to the *Condition Expert* server as well as free training by a registered RN. The pilot is being funded by DSHI. Results from the pilot continue to drive an aggressive schedule of product enhancements and content development.



PACT team members use the application to contact poly-chronic patients by telephone each month. The chronic care management notes (CCM notes) are forwarded to the PCP for review and possible adjustment in their treatment plan. The CCM notes are available to all members of the PACT team and provide context for discussion and decision-making. Patient deficiencies can be quickly identified so corrective action can be taken. All CCM notes are flagged using a numerical priority system, ranging from one to seven. Priority assignment informs the health coach how quickly a primary care provider should review the CCM note. The lower the number, the more potentially unstable the patient's disease.

The VA is currently using *Condition Expert* to perform these functions:

1. **Outbound phone calls by PACT:** Nurses check up on poly-chronic veterans every month. This was the original intended use of *Condition Expert* for this pilot.
2. **Telehealth:** Nurses interact with poly-chronic patients by video using *Condition Expert* to guide the interaction.
3. **Doctor's Office:** Nurses collect medical history (face to face) from the patient prior to being seen by the PCP. This improves work flow and time efficiency.
4. **Discharge Planning:** Veterans are evaluated with *Condition Expert* prior to discharge. Baseline objective scores at the time of discharge can be compared to future (monthly) results. Teaching includes instructing the veteran how to use their "virtual health coach" at home on a PC, laptop, or smartphone.

### **Virtual Health Coach**

In the next phase, our VA pilots will include our new virtual health coach technology. This is a web-based tool that provides the veteran with access to educational content at home. VA health coaches simply send a hyper link (to the virtual health coach) to the veteran using secure messaging.

*Condition Expert* can personalize virtual health coaches for the top 35 chronic diseases. The content in the virtual health coach is determined by problems identified in the veteran's care plan.

Each virtual health coach provides a percentile score to the veteran. A score of 100% tells the veteran they are doing everything they can to control their condition. Also included is a veteran care plan that



outlines exactly what he or she must do to improve his or her score. Veterans have the option to read their instructions, listen to their instructions, or watch video.

Veterans have the option to repeat an evaluation using the virtual health coach. Veterans answer simple YES-NO questions about behaviors, symptoms, and past medical history. There's even an option to have the program read the questions out loud. Veterans are prompted to enter biometric data, such as height, weight, and vital signs when available. At the close of the self-evaluation, a new virtual health coach (and score) is displayed. If the veteran's condition is out of control, it tells them to contact their doctor.

A future release will permit veterans to send their encoded results back to their provider. The care team will be able to decode the results and display the more comprehensive CCM note for the provider.

## **Conclusion**

Our experience creating, selling, and implementing Condition Expert has allowed us to draw some conclusions we would like to share:

1. While big data and population health provide valuable insights into patient populations, chronic disease is a *personal* health problem that can only be corrected one patient at a time. Not all patients with poorly-controlled congestive heart failure have the same root problems. Each patient is different and each one presents the provider with a unique challenge.
2. The successful management of chronic disease will require a proactive system: one that reaches out to patients to find out how they are doing, identifies problems, and returns actionable information to both the provider and the patient.
3. Physicians are a limited resource and do not have the time to directly contact (and interview) patients on a monthly basis. This is impractical as well as cost-prohibitive.
4. While physicians are limited by the number of patients they can interview, they are highly efficient decision makers when presented with structured, actionable data in the form of CCM notes.
5. Registered nurses (RN) are too costly to perform telephone CCM services. Health coaches (MA or LPN) are preferable because they are more widely available, quicker to credential, and less costly than registered nurses.
6. There is a paucity of clinical decision support / work flow solutions available to support less-costly health coaches (medical assistants and LPNs) in the performance of chronic care management services.

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7. We predict an increasing number of companies will enter the market with smart, clinically-rich products that empower a low-cost labor model without sacrificing quality of care. DSHI is one such company.
8. The evolution to a more proactive health care system will foster new sources of “pre-claim” data that can invigorate population health. Predictive analytics that depend on 6 to 12 month-old claims and EMR data would be greatly improved if the data were refreshed monthly.
9. Medicare CPT Code 99490 is a step in the right direction to motivate primary care providers to reach out to elderly poly-chronic patients and perform meaningful chronic care management.
10. Some Medicare Advantage programs may not reimburse the 99490 code.
11. Medicare 99490 should be expanded to include Medicaid beneficiaries.
12. The Medicare 99490 patient co-pay is a financial impediment to getting primary care providers to be proactive with regard to chronic care management.

Thank you for extending to me the opportunity to share this information with you.

Kind regards,

A handwritten signature in blue ink that reads "Stephen J. Schueler MD".

Stephen J. Schueler, MD

President

DSHI Systems, Inc.