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Clinical White Paper

CDMP IN ACTION: Data-enabled Remote Disease Management

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I am the Medical Director of the Lāna`i Community Health Center, a Federally Qualified Health Center (FQHC) is open to all on the island of Lana'i in Hawaii, with a special focus on those who live below the federal poverty level and the under-/uninsured. CDMP is rapidly becoming the backbone of our disease management program and behavioral health integration for this population.

Step One: Hypertension Management

Our greatest success to date has been a home blood pressure management program. We gather our patients' home blood pressure (BP) readings using CDMP and integrate that data with the clinical information extracted nightly from our eClinicalWorks electronic health records system. It is well-known that office blood pressure readings are not accurate and do not predict cardiovascular risk as accurately as home monitoring. This is due to what is commonly called 'the white coat syndrome', and to avoid this, we have transitioned virtually **all** of our patients with hypertension to home monitoring. To further improve efficiency and lower the cost, we are now implementing the use of Bluetooth-enabled BP cuffs and blood glucose meters that transmit data through a patient's own cell phone.

The active participation of the patient in monitoring and analyzing the data has been an amazing patient engagement tool. Patients suddenly become much more involved in their direct care. For the provider, we have significantly improved the evidence on which to base clinical decisions. Whereas previously a patient generated 3-6 office BP readings per year, we are now obtaining 6-12 or more readings per month. The results have been beyond our highest expectations. **We are seeing double digit improvement in BP control and incorporated life style change** as a component of hypertension management.

Next: Care Management of Diabetes and Other Chronic Conditions

Another aspect of CDMP we are implementing is the ability to gather a broader array of patient generated data and integrate it with office, lab and pharmacy collected data. We have started to regularly deploy patient survey tools using tablets and other means to integrate the

behavioral and clinical aspects, and CDMP automatically processes the results using proprietary algorithms to help generate simple risk analyses. This data is combined into a single screen 'snapshot' that also presents data and analyses from remote monitoring of blood glucose, BP and weight. By viewing the snapshot, our clinicians can instantly see the status of their patient and avoid perhaps dozens of clicks otherwise needed to gather the same information from the EHR. We are not aware of any EHR that has satisfactorily addressed this issue, and when we have approached our EHR vendor to customize or add data tables, we found the cost to be prohibitive. And while there are likely thousands of apps that collect and manipulate patient generated data, a provider does not want to build a program off of multiple stand-alone apps.

Moving forward, our community health workers will take an increasing role in chronic disease management. One of the previous weaknesses was our inability to accurately gather encounter data on the actual services provided. We saw improved outcomes, but not for all the patients, and we faced difficulty delivering the actual care services in the home and community based intervention. A big hurdle we face is that EHRs are doctor-focused, and the 'care plan' they provide is essentially just designed to meet meaningful use requirements for medication management and referrals (e.g., to diabetes educator, nutritionist, etc). By contrast, CDMP is focused on team-based care, with drop down menus and content that incorporates goal setting, patient education, patient comprehension of educational information and self-management, in addition to medication management. For us, CDMP's support of role-based encounters across multiple functions of the medical home model allows for easy recording and better documentation.

Hopefully these examples will generate thought for those looking to improve the quality of care. Population health is our current hot topic, and CDMP is well structured to address many of the reporting requirements. The other force that will dramatically impact health care is patient generated data. CDMP is well ahead of the curve and designed by clinicians for clinicians. Any provider group that is looking to the future, needs to be looking to effectively use patient generated data.

Dr. Joseph Humphry is the Medical Director of the Lāna`i Community Health Center and also serves as a Clinical Advisor to Saturn Care on a volunteer basis. Dr. Humphry can be reached at (808) 565-6919.

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