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A Population Health Approach to Dementia

Integrating evidence-based care with innovative technologies.

The Aging Brain Care program was launched in late 2007 when the Indiana University Center for Aging Research assembled a team of dementia care experts at Eskenazi Health, a safety net hospital system located in Indianapolis. The team's goal was to adapt the evidence-based model of dementia care proven effective in the PREVENT randomized controlled trial to the care delivery environment at Eskenazi. IUCAR scientists had designed and tested the PREVENT intervention in the early 2000s to improve the treatment of dementia in primary care.

Within one year, ABC saw a positive impact on the quality of dementia care at Eskenazi, including reduced behavioral and psychological symptoms of dementia, improved levels of caregiver stress and reduced cost of care for the health system.

Program Implementation

The result was the blueprint for ABC, Eskenazi's first specialty clinic for memory care. On Jan. 7, 2008, ABC began serving patients with a team of clinical professionals that included a physician, nurse care coordinator, social worker care coordinator, medical assistant and neuropsychological testing technician. ABC offered a standardized diagnostic assessment and additional assessments and questionnaires; personalized case management; care coordination among providers and community resources; and drug-based interventions (e.g., medications to treat depression, diabetes and hypertension) to improve treatment adherence, treat symptoms, reduce risk of cerebrovascular conditions and limit exposure to drugs that block neurotransmission of signals between certain cells.

Early Results

Within one year, ABC saw a positive impact on the quality of dementia care at Eskenazi, including reduced behavioral and psychological symptoms of dementia, improved levels of caregiver stress and reduced cost of care for the health system. In particular, cost analysis determined that ABC delivered a net annual savings of $980 to $2,856 per patient.

Despite the early success, the reach and impact of ABC were limited by:

- The number, availability and cost of clinical providers
- The need for patients to present in the clinic
- The need for more data on outcomes and operations to improve program effectiveness and efficiency
- The need for more frequent assessment data to inform clinical interventions

Overcoming Limitations, Expanding on Success

To begin addressing these limitations, Eskenazi, with the help of IUCAR, piloted a community-based care coordination program known as ABC Outreach. The program took a mobile office approach, supported by mobile phones, wireless internet-enabled laptops and Enhanced Electronic Medical Record Aging Brain Care Software (see sidebar on page 64), which allowed care coordinators to consider the comfort of both the patient and caregiver to determine the appointment site, be it

in the home, at the clinic or in an alternate environment.

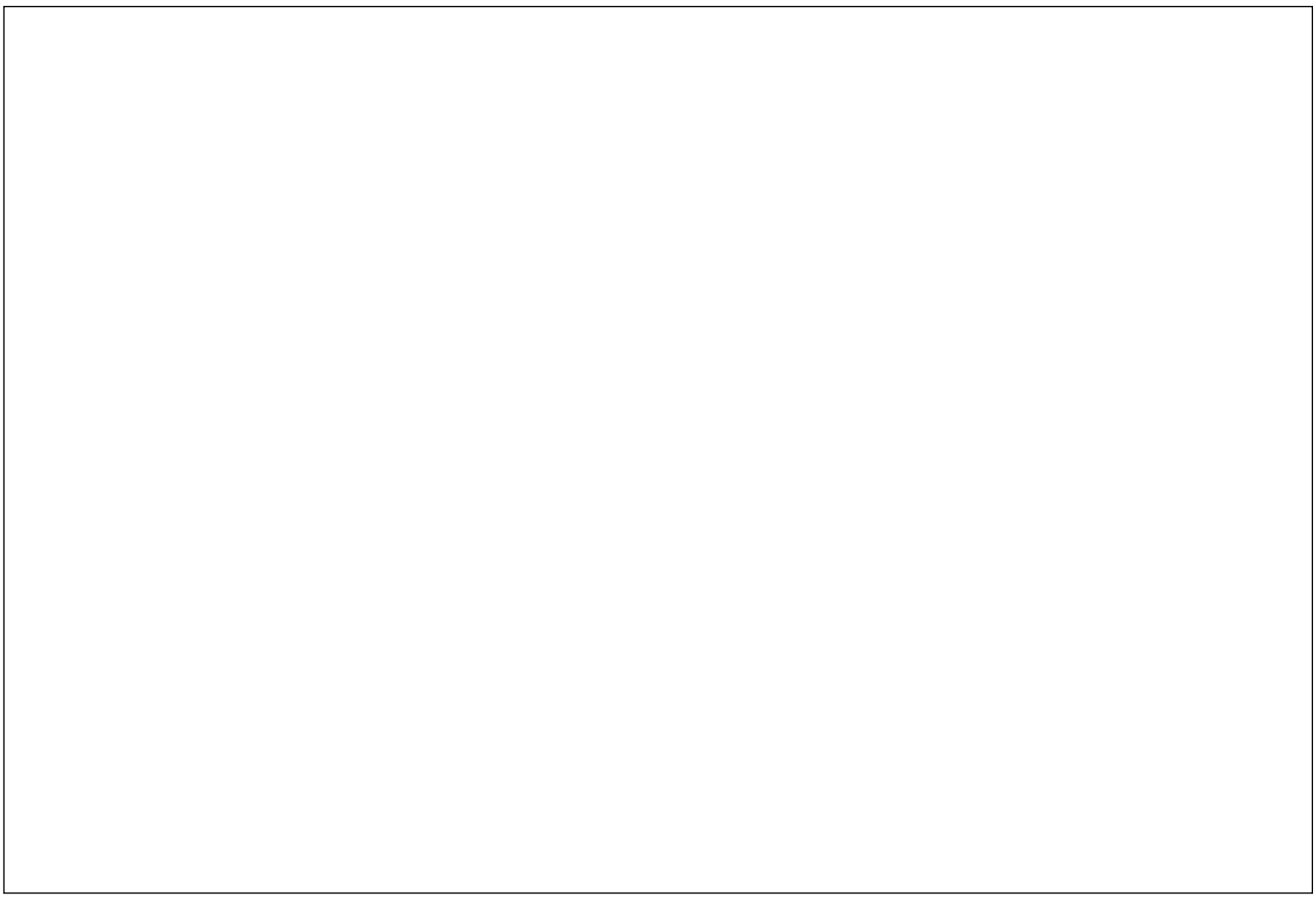
ABC Outreach began with one nurse care coordinator, supported by a physician medical director, who served 200 patients from one primary care practice at Eskenazi. As the patient population began to grow, a social worker care coordinator was added.

For the next two years, ABC met the needs of its patients and caregivers, even as the program experienced slow but steady growth. Then, in July 2012, the program received a three-year, $8 million Health Care Innovation Award from the Centers for Medicare & Medicaid Services and was charged with expanding services to 2,000 patients across central Indiana.

Successful expansion depended on accomplishing two goals. First, a much larger workforce was needed to manage 2,000 patients. A new lay worker position, the care coordinator assistant, was created to increase the capacity and efficiency of the care coordinators. CCAs were required to have at least a high school diploma and receive comprehensive training in providing care for older adults suffering from dementia and depression.

Second, the platform of care delivery had to be converted from a case management to a population health management perspective. The eMR-ABC had successfully transformed the paper-based processes of ABC into an electronic decision-support system, facilitating personalized case management. Now, functions were needed to provide the data required to care for an entire population. With the support of the CMS funding, the system was upgraded to allow ABC users to easily identify patients with poor assessment scores, quickly shift attention to those high-risk patients and adjust care plans or reallocate program resources as needed.

New functions also helped monitor performance of the expanded workforce. Added reports informed



managers about staff's productivity and adherence to the program's standard operating procedures. A new population health report evaluated the program's progress toward achieving the Triple Aim of better health, better care and lower cost through improved quality.

An enhanced dashboard provided a snapshot of the entire population in a series of pie charts, where each chart showed the composite status of enrolled patients based on a certain variable, such as diagnosis, gender, age, most recent assessment score and acute care utilization. Finally, a scheduling function helped identify patients who hadn't met their minimum visit requirements or needed potential intervention based on their most recent assessments.

Continued Progress, Further Enhancements

With these developments, ABC made significant progress toward overcoming the obstacles to replication and scalability. Preliminary findings from the CMS-funded project revealed that, after 18 months, the program showed improvements in the health of older adults with dementia and depression. For example, 66 percent of participants with initial Patient Health Questionnaire-9 scores of greater than 14 experienced at least a 50 percent reduction in depressive symptoms (a result that was sustained throughout the project). Similarly, 50 percent of caregivers of patients with dementia saw at least a 50 percent reduction in stress symptoms as measured by the Healthy Aging Brain Care Monitor assessment.

ABC's availability was still restricted to standard business hours, however. Furthermore, even with the larger workforce, collection of assessment data to inform clinical interventions was limited. In an effort to address these issues, ABC requested, and was granted, CMS approval to dedicate a portion of the year-two funds to design a personal mobile application, called iCare-AD, for informal caregivers. The goals of the mobile application were to (1) provide support to informal caregivers by delivering on-demand, around-the-clock feedback and personalized self-management support and (2) receive frequent assessments of patients and informal caregivers, enabling the ABC clinical team to monitor patient health status and informal caregiver burden and to intervene as needed between scheduled visits.

Current Areas of Focus

The ABC team is working on the second version of iCare-AD to address the gaps in self-management functionality. Once the second version of iCare-AD is complete, the team will test the efficacy of the mobile app in reducing patients' behavioral and psychological symptoms of dementia and informal caregivers' burden. We anticipate that iCare-AD will successfully automate the role of the ABC clinical team in implementing standardized treatment protocols. With that accomplishment, ABC will be poised for more widespread dissemination to meet the demand for dementia-care management services for patients and caregivers living outside of Indianapolis. ▲

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Enhanced Electronic Medical Record Aging Brain Care Software

The eMR-ABC software was developed by clinical investigators from Indiana University Center for Aging Research and Regenstrief Institute in 2009, with the initial goal of automating care management tasks for ABC program clinical users having little or no experience with technology. The first prototype was developed to meet Health Insurance Portability and Accountability Act guidelines and deployed at ABC in 2010. As the software was launched, the development team shadowed the clinical users, collected feedback, identified problems and made improvements.

In the original design, users could enter and update patient and caregiver demographic data and record and monitor program visits, record and monitor patient and caregiver responses to assessments, and receive decision support. Together, these functions allowed the user to monitor and evaluate the processes and clinical outcomes for any individual patient or caregiver.