

The CareKinesis

MEDICATION RISK MANAGEMENT APPROACH

The Need:

The risks associated with decreased drug efficacy and adverse drug reactions (ADRs) pose a serious public health problem, given that 82% of American adults take at least one medication and 29% take five or more¹. The commonality of medication use translates to 838,000 emergency room visits and 1.9 million inpatient hospital stays annually due to ADRs², and \$3.5 Billion in ADR-associated medical costs³. The impact of ADRs is most significant in the elderly population, with nearly 3.5 times as many hospitalizations among adults age 85 or older compared to adults age 65 to 69 years of age—and nearly half of all hospitalizations for ADRs involving patients age 80 or older⁴. Although the elderly are more likely to use more medications, the increased rate of ADRs persist when the data is controlled for the number of concomitant medications⁵.

The significant health implications and financial sequelae resulting from ADRs require immediate risk-reduction solutions. In addition to the significant effect ADRs have on patient health, it has been reported that for every dollar spent in the U.S. for medications, another dollar is spent on resolving problems caused by adverse drug reactions⁶.

Personalizing medication therapy management for the frail elderly—including PACE participants—decreases preventable adverse drug reactions and reduces associated hospitalizations. Given the fragile medical state of most participants and the multitude of medications that each PACE participant is taking, effective medication management is a key component of the overall success of PACE organizations.

CareKinesis

CareKinesis was founded on the notion that personalized pharmacy services can, and do, significantly improve medication outcomes for the elderly. Evidence shows that when pharmacists participate in the medication use process, polypharmacy and adverse drug events are reduced⁷. CareKinesis is proving that involvement of specialized geriatric pharmacists in prescribing decisions, administration regimens, and participant follow-up results in better health outcomes for PACE participants.

Since launching its PACE operations in January 2011 CareKinesis has contracted with PACE organizations in eight states providing pharmacy care services to more than 1500 participants. This success builds on the fact that prior to forming this organization, many of the CareKinesis management team, led by Dr. Calvin Knowlton, established a medication management company that incorporated pharmacist intervention and evidence-based

prescribing protocols into practice for more than 80,000 patients at hospices nationwide.

The CareKinesis infrastructure was designed to seamlessly support rapid growth and expansion. With an in-house software development team, sophisticated cloud-hosted systems, and automated dispensing technology, CareKinesis medication management services are infinitely scalable.

EireneRx is the custom software developed and used by CareKinesis to provide comprehensive pharmacy services to PACE clients. The EireneRx portal provides a secure, web-based solution for electronic pharmacy records. EireneRx is the sole source for clinical assessment and documentation, scheduling, electronic medication administration records, e-prescribing and robust reporting services. EireneRx is completely transparent among authorized users (pharmacists, physicians, nurses, etc.).

The CareKinesis contact center is outfitted with secure messaging systems, as well as advanced telephony systems and computer integration capabilities, which allow for immediate and seamless capacity expansion and for alternate work arrangements in emergency situations. With CareKinesis PACE medication management services, PACE physicians communicate with CareKinesis pharmacists on an ongoing basis by phone, instant messaging, and electronic medication record notes. In addition, CareKinesis pharmacists spend, on average, 1-3 days per month at each PACE centers. During these site visits, pharmacists consult with the PACE participants, as referred by the PACE medical staff.

References

1. Patterns of Medication Use in the United States: Sloane Epidemiology Center at Boston University; 2006.
2. Lucado J, Paez K, Elixhauser A. Medication-Related Adverse Outcomes in U.S. Hospitals and Emergency Departments, 2008: Statistical Brief #109. Feb 2011.
3. IOM. Committee on Identifying and Preventing Medication Errors. Washington, DC: The National Academies Press; 2006. Accessed.
4. Budnitz DS, Lovegrove MC, Shehab N, Richards CL. Emergency hospitalizations for adverse drug events in older Americans. *N Engl J Med.* Nov 24 2011;365(21):2002-2012.
5. Ibid.
6. Ernst FR, Grizzle AJ. Drug-related morbidity and mortality: updating the cost-of-illness model. *J Am Pharm Assoc (Wash).* Mar-Apr 2001;41(2):192-199.
7. Hanlon JT, Weinberger M, Samsa GP, et al. A randomized, controlled trial of a clinical pharmacist intervention to improve inappropriate prescribing in elderly outpatients with polypharmacy. *Am J Med.* Apr 1996;100(4):428-437.