

COST-BENEFIT ANALYSIS: IN-HOME TELEMONITORING SAVES KENTUCKY MEDICAID

- Several states have demonstrated deployment of in-home telemonitoring (TM) services improves patient outcomes, reduces hospital admissions, and significantly lowers Medicaid expenditures.
- This summary itemizes expected savings to Kentucky Medicaid by focusing on TM's ability to address Kentucky's No. 1 public health crisis: the high incidence and cost of diabetes.
- **Utilizing a peer-reviewed cost-benefit model below, deploying TM interventions with Kentucky Medicaid's diabetic population can save over \$59 million dollars annually in federal and state Medicaid funds.**

DIABETES IN KENTUCKY: PUBLIC ENEMY NUMBER ONE

In Kentucky, the cost/prevalence of diabetes has reached *epidemic proportions*:

- **Diabetes is the 7th leading cause of death;**ⁱ
- **Over 10% of adults and 18% of Medicaid-enrollees are diabetics;**ⁱⁱ
- **Kentucky Medicaid spent over \$537 million on diabetes care in 2013—more than it spent on all other chronic conditions combined (see chart).**ⁱⁱⁱ

KY Medicaid Cost Comparison	
Chronic Condition	Medicaid Spend
Diabetes	\$537,949,869
COPD	\$78,371,242
Hypertension	\$58,360,144
Heart Disease	\$53,849,811
CHF	\$33,673,399

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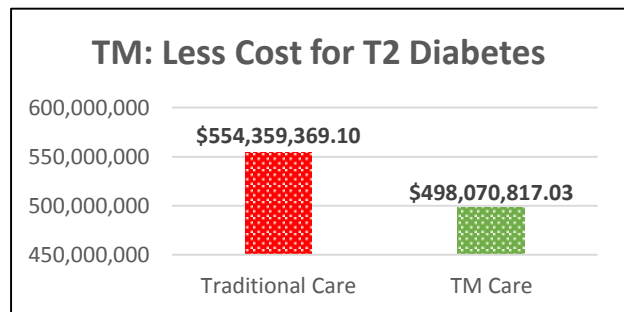
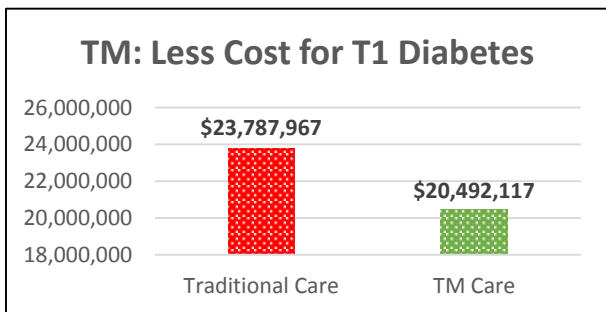
- Using a peer-reviewed model published in 2014,^{iv} we set forth the following cost-benefit analysis on TM interventions with Kentucky Medicaid's diabetic population (total=83,956).
- The model compares the cost of two treatment "bundles" for Type 1 and Type 2 diabetes patients:

(a) **Traditional care**, which includes instructions and care provided during physician office and/or hospital visits; and

(b) **In-home telemonitoring care**, which includes RN-supervised electronic remote monitoring of patient conditions (blood pressure, glucose levels, weight gain, etc.), daily education and medication reminders on the device, video-conferencing capabilities, and nurse notification of non-compliance.

- Since Kentucky does not track the number of Type 1 vs. Type 2 diabetics, we use the CDC's national averages to approximate that 4,198 Kentucky Medicaid-enrollees are Type 1 diabetics and 79,758 are Type 2 diabetics.^v
- The results of the cost-benefit analysis are shown in the table below. **In total, deploying TM interventions with Kentucky's diabetic population can save Medicaid \$59,584,402.07.**

KY Medicaid Savings for TM Diabetic Intervention, Per Patient Per Year			
Population	Cost of Traditional Care	Cost of TM Care	Savings
Type 1 Diabetes	4,198 enrollees x \$5,666.50 = \$23,787,967	4,198 enrollees x \$4,881.40 = \$20,492,117	\$23,787,967 – \$20,492,117 = \$3,295,850
Type 2 Diabetes	79,758.2 enrollees x \$6,950.50 = \$554,359,369.10	79,758.2 enrollees x \$6,244.76 = \$498,070,817.03	\$554,359,369.10 - \$498,070,817.03 = \$56,288,552.07



ⁱ Department for Medicaid Services, Department for Public Health, Office of Health Policy, Cabinet for Health and Family Services, Department of Employee Insurance, Personnel Cabinet, “2015 Kentucky Diabetes Report.” January 10, 2015, pg. 9.

ⁱⁱ *Ibid.* at 15.

ⁱⁱⁱ *Ibid.* at 32.

^{iv} Milburn et. al., “The value of remote monitoring systems for treatment of chronic disease.” *IIE Transactions on Healthcare Systems Engineering*. February 2014, 65-79. (See **Appendix 1** at the end of the packet).

^v Centers for Disease Control and Prevention (CDC), National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation, “National Diabetes Statistics Report, 2014,” pg. 9. See <http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf>.