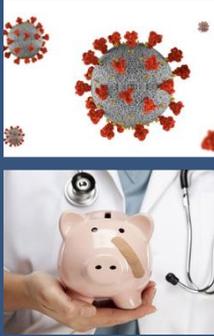


CGM: Solving California's Budget & Healthcare Crisis



Fewer Hospitalizations and Medi-Cal Savings of Tens of Millions of Dollars

Continuous Glucose Monitors (CGMs) effectively lowered diabetes risk factors linked to COVID-19 complications; reduced related hospital admissions by more than 70 percent; and generated significant healthcare savings.

A global pandemic and recession have produced a \$54 billion budget deficit. Healthcare needs continue to grow as Medi-Cal enrollment is expected to exceed 14 million in 2020-21, approximately one-third of the state's population. Infection rates continue to climb, with Blacks dying at double their proportion of the general population and hospitals under duress. Diabetes, which currently afflicts 3 million Californiansⁱ, is responsible for one-third of all COVID-19 hospitalizations and is the second leading cause of pandemic death. Next year, an estimated 247,000 Californians will be diagnosed with diabetes.

These developments support a re-examination of last year's vetoed proposal to expand Medi-Cal coverage of CGMs for diabetes treatment, especially as the FDA recently issued guidance that allows CGM use in hospitals. Currently, outpatient CGMs are covered by 40 states and federal Medicare, with more states moving to authorization. CGMs are increasingly affordable, making it feasible for California to mitigate COVID-19 impacts and provide equitable access to care for underserved Black and minority populations.

CGMs lower COVID-19 risks, mitigate excess strain on medical resources, and protect health care providers.

CGMs constantly measure blood glucose and prompt diabetes patients and care providers when medication or intervening action is necessary to avoid dangerous glycemic levels that can lead to emergency care and hospitalization. Uncontrolled blood glucose not only weakens the body's ability to fight viruses, but also causes heart and kidney disease that collectively contribute to multi-organ failure in COVID-19 deaths. Diabetes increases the

risk of coronavirus mortality by as much as 50 percent and is the second leading cause of death, according to the CDC.

In hospital use – where diabetes accounts for 30 percent of admissions – CGMs significantly improve early detection and management of abnormal glucose levels and are essential for developing individual and comprehensive COVID-19 treatment protocols. Data available since the FDA's March 2020 guidance for CGM hospital use suggests improved blood glucose stability from 13 percent of hospitalized patients to greater than 90 percent in two weeks.ⁱⁱ

CGMs also replace the need for bi-hourly fingerstick blood tests and in-person patient monitoring, which has been correlated to reduced strain on staffing resources, medical supplies/PPEs, and patient trauma. In addition, because CGMs allow remote sharing of real-time glucose readings, there is less risk of infection for hospital care providers, as well as clinic physicians and patients due to telehealth.

Recent case reports show that CGM's cloud-based information sharing allowed physicians to divert patients with onset and established diabetes from hospital admission and effectively monitor and prescribe insulin dosages remotely.ⁱⁱⁱ

CGMs afford underserved Blacks and minorities equal access to effective health care.

CGMs are today's recognized Standard of Medical Care for effective diabetes treatment. Widely published medical studies establish CGMs' superior efficacy relative to Self-Monitoring Blood Glucose (SMBG) fingersticks. While CGMs are available to

Medi-Cal patients under the age of 20, adult and elderly diabetes patients have access only to sub-standard SMBG fingersticks despite this population's high risk of diabetes-induced heart disease, kidney failure, and other serious conditions. Minority patients face even greater odds because diabetes is disproportionately more prevalent among non-whites, according to the American Diabetes Association. American Indians, Latinos and Blacks are about twice as likely to have diabetes than their white counterparts (Table 1). Black and Latino COVID hospitalization rates are 5 and 4 times higher than those of white persons, respectively.^{iv}

Ethnicity	Prevalence
American Indians	14.7%
Hispanics	12.5%
Blacks	11.7%
Asian	9.2%
Whites	7.5%

Extending Medi-Cal coverage to adult diabetes patients would address higher disease prevalence and health disparities that are primary factors in systemically higher Black morbidities.

CGMs reduce health care costs.

According to a 2014 UCLA study, diabetes-related hospitalizations cost California \$1.6 billion a year, of which 80 percent are paid for by public funds.^v

Studies also indicate that CGMs decrease hospital admissions for diabetic ketoacidosis (DKA) and hypoglycemia by 76 percent and 73 percent^{vi}, with correlated per-occurrence savings of \$8,500^{vii} and \$3,800^{viii} respectively. HbA1c levels, which measure average blood sugar over an extended period, also decreased by 0.7 percent, generating between \$1,100 to \$1,500 per 1 percent reduction^{ix}.

For California, an estimated General Fund investment of only \$300,000^{xi} would yield net Total Fund savings of between \$54 million and \$66 million in the first year (Table 2) – based on an estimated incremental difference of \$30 per-patient year to transition Medi-Cal from SMBG fingersticks to CGMs for 40,000^x eligible enrollees.

Saving estimates are highly conservative and expected to grow because CGM prices continue to decline.

Previous DHCS cost estimates of \$30 million were incorrect due to:

- Overstated cost estimates for CGM systems;
- Outdated double testing that assumed tandem SMBG costs; and
- Omitted savings from lower hospitalization and treatment, as substantiated in widely published studies.

	No. of patients	Amount (in thousands)
Incremental CGM costs (\$30)	40,000	\$1,200 ^{xi}
Hypoglycemia hospital reductions (\$3,800 per occurrence)	3,480 ^{viii}	(\$13,200)
DKA hospital reductions (\$8,500 per occurrence)	1,400 ^{vii}	(\$11,900)
HbA1c cost reductions (\$1,100 to \$1,500 per 1 percent HbA1c)	40,000	(\$30,800 to \$42,000)
Net Savings		(\$54,700 to \$65,900)

ⁱ American Diabetes Association: Statistics About Diabetes – Diabetes by race/ethnicity. <https://www.diabetes.org/resources/statistics/statistics-about-diabetes>

ⁱⁱ Zhu L, et al. *Cell Metab.* 2020;S1550-4131(20)30238-2. [ePub ahead of print, May 1, 2020.]

ⁱⁱⁱ Peters AL, et al. *Diabetes Technol Ther.* 2020;10.1089/dia.2020.0187. [ePub ahead of print, May 5, 2020.]

^{iv} CDC: COVID-19 in Racial and Ethnic Minority Groups – June 25, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html>

^v Meng Y, Pickett MC, Babey SH, Davis AC, Goldstein H. *Diabetes Tied to a Third of California Hospital Stays, Driving Health Care Costs Higher.* UCLA Center for Health Policy Research. 2014

^{vi} Charleer S, Mathieu C, Nobels F, et al. Effect of Continuous Glucose Monitoring on Glycemic Control, Acute Admissions, and Quality of Life: A Real-World Study. *The Journal of clinical endocrinology and metabolism.* 2018

^{vii} Tieder JS, McLeod L, Keren R, et al. Variation in Resource Use and Readmission for Diabetic Ketoacidosis in Children's Hospitals. *Pediatrics.* 2013;132(2):229-236. DKA hospitalization reduced from 4.6 percent of patients (SMBG) to 1.1 percent (CGM).

^{viii} Liu J, Wang R, Ganz ML, Paprocki Y, Schneider D, Weatherall J. The burden of severe hypoglycemia in type 1 diabetes. *Current medical research and opinion.* 2018;34(1):171-177. Hypoglycemia hospitalization reduced from 11.9 percent of patients (SMBG) to 3.2 percent (CGM).

^{ix} Wagner EH, Sandhu N, Newton KM, McCulloch DK, Ramsey SD, Grothaus LC. Effect of improved glycemic control on health care costs and utilization. *Jama.* 2001;285(2):182-189.

^x DHCS estimate presented to Senate Appropriations per AB 848 analysis (2019)

^{xi} General Fund incremental costs of approximately \$300,000 based on current FMAP 6.2 percent increase authorized under the Families First Coronavirus Response Act (FFCRA) (Pub. L. 116-127) signed into law on March 18, 2020. While the increase was originally set to expire upon certain economic triggers, the federal government is considering possible changes that could further reduce General Fund costs.