

Cost Savings Case Study: eGMS® Return on Investment

Savings estimates for hospitals and health systems with 5,000 beds



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eGMS Cost Savings Summary

From both a medical and business perspective, eGMS isn't just a nice-to-have — it's a must-have.

Improving glycemic management in the hospital results in better and safer care for patients¹⁻³. In a perfect world, that would be all you need to know. But there's a cost associated with improvement, and that cost must be justified.

Thankfully, improving glycemic care using Glytec's eGlycemic Management System® (eGMS) doesn't just enhance patient safety⁴⁻⁶ — it can also dramatically reduce costs.⁷ It's easy to do the math and see how the savings could result in positive, scalable ROI.

*Projected outcomes + savings summary for a 5,000-bed hospital or healthcare system**

Outcome	Savings
5,067 fewer severe hypoglycemia (<40 mg/dL) events per year	\$14,866,578
85,500 fewer point-of-care blood glucose tests per year	\$384,750
1,500 CABG procedures with a lower cost of care	\$5,481,000
3,900 additional open ICU bed-days per year	\$2,145,000

*Projected based on conservative estimates using real data

**Total projected annual savings
with eGMS®**

\$22,877,328

Hypoglycemia Reduction

Hypoglycemia events are a major financial drain for hospitals,⁸ in addition to its impact on patient safety and outcomes. By replacing outdated and dangerous paper protocols and sliding scale monotherapy⁹, and using guided workflows with safety guardrails that decrease errors⁶ and improve administration, eGMS can reliably reduce the incidence of hypoglycemia in your health system.⁵

At a 5,000-bed hospital or healthcare system, we anticipate that reduction in severe hypoglycemia will result in **\$14,866,578 in savings** annually.

How we got here...

We reached this projection by taking an estimated number of severe hypoglycemia events per year at a hospital of this size (**5,630**) and calculating a **90% reduction** in incidence of severe hypoglycemia (a conservative estimate based on our research, in which we see up to 99% reduction¹⁰). We then multiplied the reduced number of incidents by a proven cost per severe hypoglycemia event from a peer-reviewed study.⁷

Reduced point-of-care blood glucose tests

Every point-of-care blood glucose test performed costs nurses' time and the hospital money. By reducing time-to-target blood glucose¹¹ and length of stay,⁷ the use of eGMS results in fewer POC blood glucose tests.¹²

At a 5,000-bed hospital or healthcare system, we anticipate that reduction in point-of-care blood glucose tests will result in **\$384,750 in savings** annually.

How we got here...

We reached this projection by taking an estimated number of POC BG tests per year at a hospital of this size (**1,710,000**) and calculating a **5% reduction** (a conservative estimate based on our research, which ranges from 20% to 47% reduction^{6,12,13}). We then multiplied the number of tests avoided by an estimated \$4.50 excess cost per test.

Better glycemic management following CABG

Glycemic complications following CABG procedures can be very costly. eGMS reduces the cost per procedure by reducing complications, shortening hospital stays and reducing resource utilization across ICU, pharmacy, radiology, lab and consultation services.¹⁴

At a 5,000-bed hospital or healthcare facility, we anticipate that improved glycemic management of CABG patients will result in **\$5,481,000 in savings** annually.

How we got here...

We reached this projection by taking an estimated number of CABG procedures per year at a hospital of this size (**2,000**) and estimating that **75% of these patients will need IV insulin**. We then multiplied the estimated number of IV insulin-requiring CABG patients by a proven cost savings from a study comparing intensive to conservative glucose control.¹⁴

New open ICU bed-days

eGMS gets insulin-requiring patients into target range¹⁵ and out of the ICU faster,¹⁶ opening up beds for other patients in need.

At a 5,000-bed hospital or healthcare facility, we anticipate that increasing open ICU bed days as a result of eGMS usage will result in **\$2,145,000 in savings** annually.

How we got here...

We reached this projection by taking an estimated number of insulin-requiring patients in the ICU per year at a hospital of this size (**15,000**) and calculating an **0.26 day reduction** in ICU length of stay per patient (a conservative estimate based on our research, which ranges from 0.26 to 3.18 days reduction^{7,17}). We then multiplied the number of additional open bed days by a conservative estimated throughput value of **\$550**.

UP NEXT: REAL HOSPITAL COST SAVINGS AND HOW MUCH CAN YOU SAVE?

Real Hospital Cost Savings

While the savings in this guide are projections, real hospitals have saved millions using eGMS.



Kaweah Delta, a 610-bed medical center in California, realized \$7.1 million in annual savings using eGMS.⁷

“ The standardization of care . . . anytime you can do that, you’re going to decrease the variation, and as a result, we’ve been able to reduce our length of stay by approximately two days. What’s really exciting is the 74% reduction we have seen in severe hypoglycemic events less than 40, because we know those can be very catastrophic and the potential savings is in the millions of dollars.”

Rose Newsom RN, MSN, NE-BE, Director of Nursing Practice at Kaweah Delta Health Care District.

Throughout this cost-savings guide, we’ve used conservative estimates to illustrate how Glytec’s eGMS isn’t just the right thing to do to achieve optimal patient safety: it’s also a smart investment.

Reach out for a personal consultation to receive a personalized projected cost savings using your institution’s data points.

Learn More About The Return on Investing in Glytec’s eGMS

Reach out for a personal consultation

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References

1. Umpierrez GE, Smiley D, Zisman A, et al. Randomized study of basalbolus insulin therapy in the inpatient management of patients with type 2 diabetes (RABBIT 2 trial). *Diabetes Care* 2007;30:2181–2186
2. Ceriello A. Hyperglycemia and the worse prognosis of COVID-19. Why a fast blood glucose control should be mandatory. *Diabetes Res Clin Pract* 2020;163:108186
3. Ceriello A, De Nigris V, Prattichizz F. Why is hyperglycaemia worsening COVID-19 and its prognosis? *Diabetes Obes Metab.* 28 May 2020 [Epub ahead of print]. DOI: 10.1111/dom.14098
4. Chancellor WZ, Mehaffey JH, Hawkins RB, et al. Electronic Glycemic Management System and Endocrinology Service Improve Value in Cardiac Surgery [published online ahead of print, 2020 Oct 29]. *Am Surg.* 2020;3134820950685. doi:10.1177/0003134820950685
5. Aloï J, McFarland R; Reduction of Hospital Hypoglycemia with eGMS and Quality Programming Across 180 US Hospitals. Poster presentation at the Hospital Diabetes Meeting, June 18, 2020
6. Dudley D, Gaines M. Use of Technology Reduces Incidence of Hypoglycemia-Related Adverse Drug Events Among Patients Requiring Insulin Therapy While Hospitalized. DTS Virtual Poster Meeting. June 18, 2020.
7. Newsom R, Patty C, Camarena E, Gray T, Sawyer R, Brown B, McFarland R. Safely Converting From Sliding Scale to Basal Bolus Insulin Across an Entire Medical Center via Implementation of the eGlycemic Management System. *American Diabetes Association Scientific Sessions.* June 2017.
8. Gaines M, Pratley R, Tanton D. Financial Implications of Poor Glycemic Management & Improvement Strategies for Optimal Outcomes. *IHI National Forum on Quality Improvement in Health Care.* 2018.
9. 15. *Diabetes Care in the Hospital: Standards of Medical Care in Diabetes—2020.* American Diabetes Association. *Diabetes Care* Jan 2020, 43 (Supplement 1) S193-S202; DOI: 10.2337/dc20-S015 Retrieved from https://care.diabetesjournals.org/content/43/Supplement_1/S193.
10. Rabinovich, M., Grahl, J., Durr, E., Gayed, R., Chester, K., McFarland, R., & McLean, B. (2018). Risk of Hypoglycemia During Insulin Infusion Directed by Paper Protocol Versus Electronic Glycemic Management System in Critically Ill Patients at a Large Academic Medical Center. *Journal of Diabetes Science and Technology*, 12(1), 47–52.
11. Ponnusamy, Deepa & Piziak, Veronica & Patel, Sonal & Urbanosky, Rhonda. (2014). B2-3: Comparative Effectiveness of a Computerized Algorithm versus a Physician Instituted Protocol to Manage Insulin Infusions after Cardiac Surgery. *Clinical Medicine & Research.* 12. 97-97. 10.3121/cmr.2014.1250.b2-3.
12. Newsom, R, Patty, C, Camarena, E, Gray, T, Sawyer, R, Brown, B, McFarland, R. Implementation of the eGlycemic Management System A Medical Center Case Study. *International Hospital Diabetes Meeting.* May 19, 2017.
13. Aloï, J, Booth, R, McFarland, R, Ullal, J, Mabrey, M. Finger Stickin' Good? Improved Glycemic Control in CV Surgery Patients Provides Cost Savings Through Reduction in Point of Care Tests. *Annual Diabetes Technology Meeting.* Oct 22, 2015.
14. Cardona S, Pasquel FJ, Fayfman M, et al. Hospitalization costs and clinical outcomes in CABG patients treated with intensive insulin therapy. *Journal of Diabetes and Its Complications.* 2017 Apr;31(4):742-747. DOI: 10.1016/j.jdia-comp.2017.01.003.
15. Newton, C.A., Smiley, D., Bode, B.W., Kitabchi, A.E., Davidson, P.C., Jacobs, S., Steed, R.D., Stentz, F., Peng, L., Mulligan, P., Freire, A.X., Temponi, A. and Umpierrez, G.E. (2010), A comparison study of continuous insulin infusion protocols in the medical intensive care unit: Computer guided vs. standard column based algorithms. *J. Hosp. Med.*, 5: 432-437. <https://doi.org/10.1002/jhm.816>

16. Carr L., Rogers C., Ryan D., McFarland R., Bernardi N., Frey K., Haines T. Evaluating the Impact of eGMS- Glucommander on Length of Stay, Hypoglycemia, and Glucose Control Used in a Regional Medical Center. 2018 Diabetes Technology Meeting. 2018.
 17. Newton CA, Young S: Financial implications of glycemic control: results of an inpatient diabetes management program. Endocr Pract 12(Suppl. 3):43-48, 2006
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The eGlycemic Management System® is a modularized solution for glycemic management across the care continuum that includes Glucommander™. Glucommander™ is a prescription-only software medical device for glycemic management intended to evaluate current as well as cumulative patient blood glucose values coupled with patient information including age, weight and height, and, based on the aggregate of these measurement parameters, whether one or many, recommend an IV dosage of insulin, glucose or saline or a subcutaneous basal and bolus insulin dosing recommendation to adjust and maintain the blood glucose level towards a configurable physician- determined target range. Glucommander™ is indicated for use in adult and pediatric (ages 2-17 years) patients. The measurements and calculations generated are intended to be used by qualified and trained medical personnel in evaluating patient conditions in conjunction with clinical history, symptoms, and other diagnostic measurements, as well as the medical professional's clinical judgement. No medical decision should be based solely on the recommended guidance provided by this software program.

Glucommander™ is only available for use in the United States.

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