

# UCSF Uses LogicNets to Improve Surgical Outcomes for Diabetes Patients



## The Challenge

Diabetes patients are at significantly increased risk of surgical complications. Standard pre-op protocols (like fasting) can destabilize blood glucose levels, requiring precise, individualized adjustments to medication. Improper patient preparation is not only a cause of complications but the resulting day-of cancellations can also lead to serious financial issues for the organization. Furthermore, the simplistic pre-op guidance that most providers follow is too generic and simplistic to properly address the specific combination and wide variance of medications and delivery systems that patients actually use.

At the UCSF Medical Diabetes Center, Dr. Robert J. Rushakoff and his team developed a robust set of sophisticated pre-op algorithms to address every known treatment regimen used by diabetes patients in the US. However, these protocols were too complex for easy manual use at point of care and too dynamic to be automated using traditional software development.

## The Solution

Dr. Rushakoff selected **LogicNets**, a configurable web-based decision support platform that enables clinical teams to visually build and deploy sophisticated medical guidance applications—without coding.

The result was the **UCSF Pre-Op Diabetes Solution**, a web-based tool that:

- Guides clinicians through decision pathways using a dynamic Q&A interface
- Tailors up to seven days of medication instructions to each patient's situation
- Automatically generates printable/emailable patient prep reports
- Supports easy and rapid updates without developer support
- Easily integrates with the EHR and other workflow systems
- Offers multi-language support to generate advice in a wide range of languages leveraging a single core of algorithms

*“After developing our guidance, we thought it would be easy to find an online program or site where we could quickly convert our lengthy complex algorithms to a simple interactive site for medical providers. To our surprise, we found no solution—only programmers who would need months. We then came across LogicNets, and it was the perfect match. After the initial conversion, making updates or changes remains simple and quick.”*



**Dr. Robert J. Rushakoff**  
Medical Director, UCSF Diabetes  
Clinic

# Case Study: UCSF Uses LogicNets to Improve Surgical Outcomes for Diabetes Patients

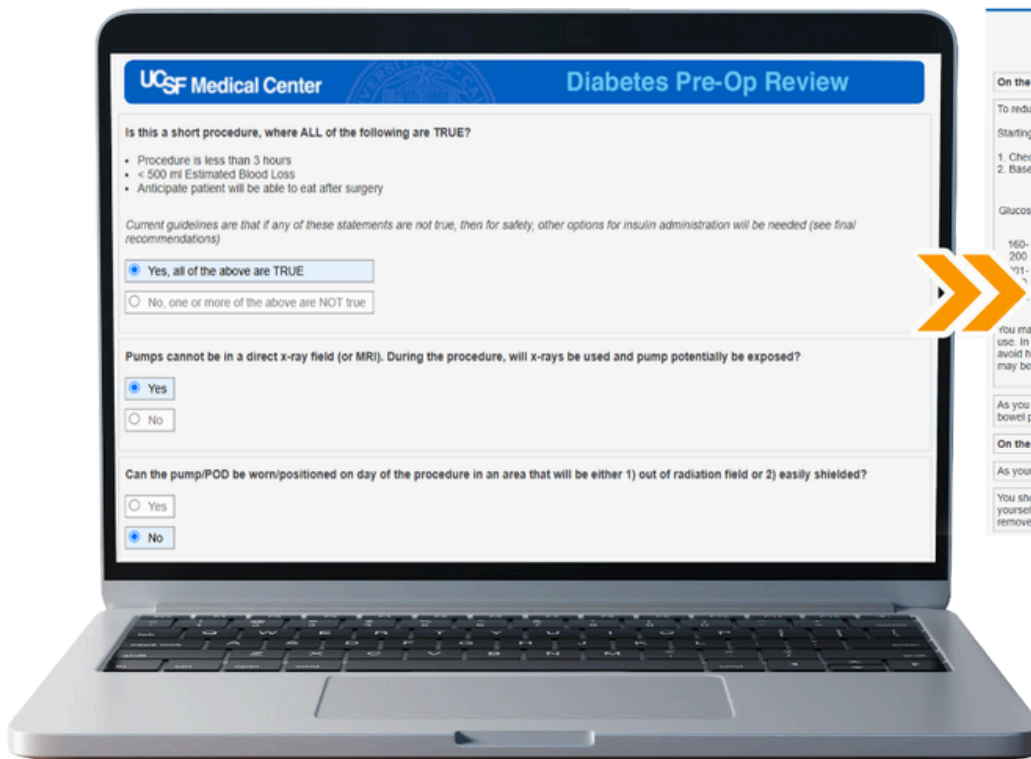
## The Results

- **Live since 2012**, used by clinicians throughout the University of California and affiliated hospitals system
- **Reduced surgical complications** through better preparation
- **Eliminated unnecessary cancellations**
- Fast, low-cost updates enabling continuous clinical improvement
- Complete tracking of results for analytics and continuous content improvement

*“We couldn’t find a development partner who could deliver what LogicNets did—out of the box.”*

**Dr. Robert J. Rushakoff**

Medical Director, UCSF Diabetes Clinic



Patient Instructions		Information
<b>On the day before surgery/procedure</b> as you are undergoing a special bowel preparation		
To reduce your risk of hypoglycemia, decrease your basal rate to 80% of current rate.		
Starting the morning of your bowel preparation until you are checked in for your procedure:		
1. Check your glucose every 4 hours while you are awake.		
2. Based on those glucose levels, give yourself		
<b>Total Daily Insulin Dose</b>		
Glucose	You currently take a total of 30 Units/day or less	You currently take more than a total of 50 Units/day
160-200	1 Units	2 Units
201-240	2 Units	3 Units
241-280	3 Units	4 Units
You may notice that these short acting insulin correction doses may be different from what you normally use. In the short time around surgery, it is important to avoid potentially dangerous low glucoses (and avoid high glucoses that may increase risk of infection.) Thus a glucose range a bit higher than you may be used to on a daily basis may be safer and more appropriate.		
As you are on the ERAS protocol, do not take oral glucose (tabs, juice or soda) on the day of your bowel preparation		
<b>On the day of surgery/procedure</b>		
As your pump will potentially be exposed to radiation during your procedure, it must be removed.		
You should wear your pump until you arrive and are ready for your procedure to begin. At that time, give yourself a bolus equal to 1-2 hours of your basal rate, then either suspend your pump's basal rate or remove your pump for the procedure.		

With LogicNets, you can improve the quality of care your practice provides, reducing risks, minimizing cancellations, and ensuring optimal outcomes for your diabetes patients