

Form Name:	Program-Specific Metric Proposal
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## Program Information

Residency/Fellowship Program	Anesthesiology
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Email Address for Primary Contact for proposal (submission copy will be sent to this e-mail)	nicholas.alvey@cuanschutz.edu
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Program Director	Tony Oliva
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e. Which institutions will be involved (check all that apply)?	UCH Denver Health
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UCH Faculty Champion	Ben Scott
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a. Does the UCH faculty champion have a dedicated role/title in the residency or fellowship program or department with respect to Quality?	Yes
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DHMC Faculty Champion	Allison Sabel
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a. Does the DHMC faculty champion have a dedicated role/title in the residency or fellowship program or department with respect to Quality?	No
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Resident Champion	Nicholas Alvey
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a. Is the resident/fellow in good standing with the residency program?	Yes
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b. Level of Training	PGY-3
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c. Why is the resident/fellow interested in being the Champion for the program?	The resident champions for this project are Nick Alvey and Kenji Tanabe, both PGY-3 trainees in anesthesiology. They both have prior work experience in quality improvement and are eager to build upon this foundation to lead a residency-wide project. Additionally, Nick and Kenji are serving as the joint chief residents for quality improvement and wellness for the 2020 academic year.
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## Proposed Metric

How many metrics will your program work on?	1
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**Metric 1: What metric would your residency or fellowship program like to improve?**

Appropriate intraoperative insulin administration for hyperglycemic patients. Our specific metric is as follows: the percentage of patients, 18 years and older, who undergo elective surgery greater than two hours in length, and who receive insulin for a blood glucose greater than 200 mg/dL while in the intraoperative period.

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**Metric 1: Please describe the problem related to this metric (include statement of problem, patients affected, magnitude/significance of problem).**

Perioperative and intraoperative hyperglycemia are correlated with an increased risk of postoperative infectious complications. In an effort to impact the rate of surgical site infections at the University of Colorado Hospital, a perioperative glycemic control protocol was recently established. This protocol encompasses intraoperative glucose management and recommends insulin treatment for blood glucose values greater than 200 mg/dL. Anesthesia resident compliance with this protocol has never been measured and is anecdotally low. Given that each anesthesia resident completes an estimated four hundred cases per year, improved compliance with this metric has the opportunity to improve glycemic control for a large swathe of patients undergoing surgery.

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**Metric 1: Please describe your goals that the program would like to achieve for this metric as "Threshold goal" (80% likelihood of reaching), "Achievement Goal" (50% likelihood of reaching), and "Stretch Goal" (20% likelihood of reaching). Please also allocate how the bonus will be distributed among these tiers.**

Metric: The percentage of patients, 18 years and older, who undergo elective surgery greater than two hours in length, and who receive insulin for a blood glucose greater than 200 mg/dL while in the intraoperative period.

Metric Denominator: Patients, aged 18 years or older, who undergo elective surgery greater than 2 hours in duration AND who had a blood glucose measured at > 200 mg/dL during the period defined between in-room and out-of-room times.

Metric Numerator: Patients meeting the denominator criteria who had insulin ordered during the period defined between anesthesia start and anesthesia stop times.

We are in the process of working with Epic Champions at both the University of Colorado Hospital and Denver Health to gather baseline data and establish a plan for data collection going forward. We will establish tiered goals from this baseline data.

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**Metric 1: How will the residents/fellows achieve this goal? Please describe any planned PDSA cycles, how data will be collected, tracked and reported to the Steering Committee, key stakeholders that must be engaged as part of the improvement process, and resources that will be utilized.**

Our first step in achieving this goal will be measurement and education. We will measure anesthesia residents' current rate of insulin administration for intraoperative blood glucoses greater than 200 mg/dL. We will also conduct a multi-faceted education campaign to help residents understand the protocol as well as the clinical implications of perioperative hyperglycemia. A key and continuous tenet of our project will be providing residents with frequent feedback on either their individual or collective adherence to the protocol. We anticipate multiple additional nested PDSA cycles as the project progresses.

We are actively working with Epic Champions at the University of Colorado and Denver Health to establish a protocol for data extraction going forward. The resident QI Champions, Nick Alvey and Kenji Tanabe, will be responsible for presenting data to the Steering Committee on a regular basis.

In addition to the residents and aforementioned Epic Champions, physician champions will be an important stakeholder. Dr. Sam Gilliland, the physician leader of the University of Colorado hospital-wide perioperative glycemic control effort, has indicated his support for this project.

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**Metric 1: What clinical services or units will be affected by this work?**

As our project will be focused on intraoperative administration of insulin by anesthesia residents, one of the advantages is its large potential impact without major disruption to existing workflows. The anesthesia workflow will be impacted as a subset of patients will require insulin administration. However, the resources are currently in place to allow anesthesia to perform this task. Additionally, the PACU may be impacted as intraoperative insulin management alters their subsequent management of hyperglycemia.

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**Metric 1: What departmental quality/safety priorities does this address?**

For the Department of Anesthesiology, this project encourages compliance with the recently implemented perioperative glycemic control protocol.

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**Metric 1: What hospital quality/safety priorities does this address?**

The perioperative glycemic control initiative is nested more broadly under the University of Colorado Hospital goal to decrease the rate of surgical site infections. Additionally, we have aligned our metric with the "CMS measure Treatment of Hyperglycemia with Insulin."

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**Metric 1: Provide data showing at least 3 months of trends.**

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## **Additional Requirements**

**Letter of Support - Department Chair or Department Vice-Chair for Quality**

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<b>Letter of Support - Residency/Fellowship Program Director</b>	<a href="https://s3.amazonaws.com/files.formstack.com/uploads/2692627/52470374/618998712/52470374_oliva_letter_of_support.pdf">https://s3.amazonaws.com/files.formstack.com/uploads/2692627/52470374/618998712/52470374_oliva_letter_of_support.pdf</a>
<b>Letter of Support - Local Epic Champion</b>	<a href="https://s3.amazonaws.com/files.formstack.com/uploads/2692627/83584639/618998712/83584639_scott_letter_of_support.pdf">https://s3.amazonaws.com/files.formstack.com/uploads/2692627/83584639/618998712/83584639_scott_letter_of_support.pdf</a>
<b>Letter of Support - Local Epic Champion - 2nd Site</b>	<a href="https://s3.amazonaws.com/files.formstack.com/uploads/2692627/87266548/618998712/87266548_sabel_letter_of_support.pdf">https://s3.amazonaws.com/files.formstack.com/uploads/2692627/87266548/618998712/87266548_sabel_letter_of_support.pdf</a>
<b>Statement of Agreement: If your proposal for a Program-specific metric is accepted, please acknowledge that you agree to:</b>	Provide monthly data to the Steering Committee, Office of Graduate Medical and the Residency Program