POCT Applications

- Two examples – areas of growth and interest
  - Coagulation
  - Tight glycemic control (TGC)

Tight Glycemic Control (TGC)

Hyperglycemia in Hospitalized Patients

- Hyperglycemia common in hospitalized patients, even in patients without diabetes
- Associated with increased LOS, morbidity, and mortality
- Postoperative hyperglycemia predictor of serious infectious complications
- Insulin therapy in surgical ICU patients shown to improve survival if glucose levels maintained between 80-110 mg/dL

Mean Blood Glucose Level and Hospital Mortality

- Medical and surgical critically ill patients
- Modest elevation in blood glucose >99 mg/dL during ICU associated with increased hospital mortality:
  - 80-99 mg/dL: 9.6%
  - 100-119 mg/dL: 12.5%
  - >300 mg/dL: 42.5%

Krinsley JS et al. Ann Thorac Surg 1999;67:352-362

Tight Glycemic Control

- Requires frequent monitoring of glucose
- Greatly increases the number of POC glucose tests performed
- Program requires standardized protocols, algorithms, metrics for tracking patients and assess quality
- Coordination with laboratory to ensure proper training
- Develop frequency of lab monitoring for comparison of results
- Develop way of distinguishing POC from lab results on patient's report to improve interpretation and outcome

Know the limitations of the instrument/method

Differences in POCT Glucose CAP Survey Results

- There can be significant differences between POCT glucose meters for the same CAP survey specimens
- Evaluation criteria used for acceptability is:
  - ± 20%
  - ± 12 mg/dL, or
  - ± 3 SD

  Whichever is greater

CAP Survey Results, WBG-B 2007, Specimen WB-06

Method	No. Labs	Mean	Low	High
Abbott Prcsn PCX	6723	94.1	90	108
Lifescan Surestp	1723	111.6	92	132
Roche Comf Curve	21129	76.1	64	88

CAP Survey Results, WBG-B 2007, Specimen WB-08

Method	No. Labs	Mean	Low	High
Abbott Prcsn PCX	3166	344.3	296	393
Lifescan Surestp	4344	401.0	329	473
Roche Comf Curve	10525	322.4	281	364