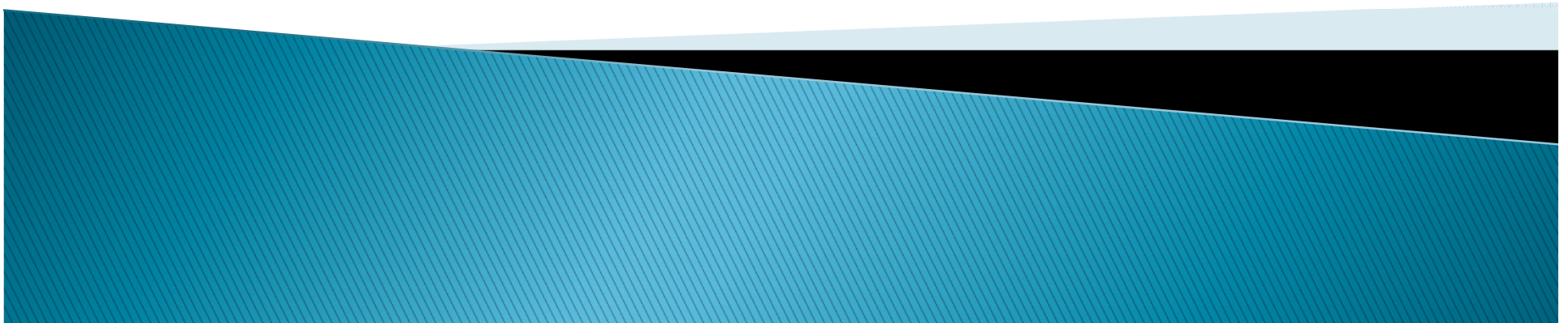


West Michigan Glycemic Collaborative

Larry Custer R.Ph.
Diabetes Coordinator
Metro Health Hospital



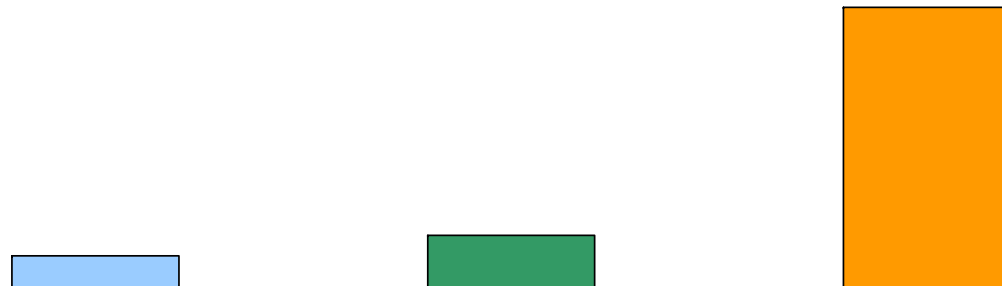
Diabetes Epidemiology

- ▶ Diabetes affects 9% of US population
- ▶ Undiagnosed diabetes
- ▶ 25% TO 30% of GR area hospital admissions
- ▶ 3 times more likely to be hospitalized
- ▶ ICU Admissions and mortality data
- ▶ Ethnic disparities
- ▶ Outpatient and Inpatient costs



Hyperglycemia: An Independent Marker of In-Hospital Mortality in Patients with Undiagnosed Diabetes


Total In-patient Mortality



* $P < 0.05$

Umpierrez GE et al, J Clin Endocrinol Metab

Barriers and Challenges

- ▶ Evidence based protocols–chasing the evidence
 - ▶ Complexity of hospital systems
 - ▶ Transitions of Care
 - ▶ Medication errors
 - ▶ Acute illness and infections
 - ▶ Competition
 - ▶ PCP and Hospitalist “turf” issues
 - ▶ Diabetes not just a PCP managed disease
 - ▶ Patient compliance and managed care issues
- 

WMGC HEALTH CARE SYSTEMS

Grand Rapids Acute Care Hospitals

- Spectrum Health
- Metro Health
- Saint Mary's Health System

Subacute Facilities

- Pine Rest
- Mary Free Bed



WMGC Leadership

- ▶ Larry Custer R.Ph.
Metro Health
- Mary Wilson NP
Saint Mary's
- Steven Thayer M.S.
Spectrum Health
- ▶ Adam Wolfe DO
Metro Health
- Robert Rood MD
Saint Mary's
- Greg Deines DO
Spectrum Health

TRI-CHAIRS

PHYSICIAN CHAMPIONS

Medical Disciplines in the WMGC

- ▶ Physicians–PCP, Diabetology, Endocrinology, Anesthesia, Surgery
- ▶ Nursing–RN, CDE, NP
- ▶ Pharmacists
- ▶ RD
- ▶ Quality
- ▶ Lab, IT–adhoc
- ▶ Statisician



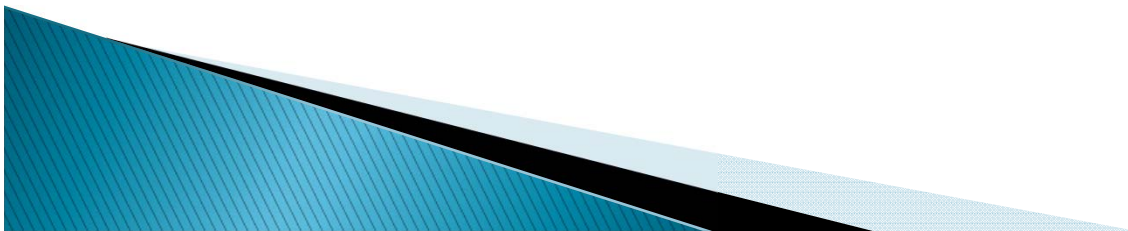
Mission Statement

- ▶ Mission–to significantly improve hospital treatment and outcomes for patients with diabetes and hyperglycemia associated with acute illness.
- ▶ Purpose– to redesign, measure, and promote evidence–based practices for inpatient treatment of diabetes and acute hyperglycemia



Collaborative Clinical Focus

- ▶ Research
- ▶ Education
- ▶ Outcomes
- ▶ System Process Changes
- ▶ Leadership in hospital diabetes teams
- ▶ Patient Advocates



History and Progress

- ▶ Began in 2008–meeting with area hospital diabetes teams
- ▶ Agreed to eliminate sliding scale insulin, and replace with evidence based basal–bolus protocols
- ▶ Letter to physician community
- ▶ Agreed upon 6 common “Glucometrics” to measure and share



GLUCOMETRICS (WMGC)

- Number and percent of patients with BG <50 (critical hypoglycemia)
- Number and percent of patients with BG <70 (hypoglycemia)
- Number and percent of patients with BG between 80–180
- Number and percent of patients with BG > 200

- * Lab and POC data



Glucometrics

| Hospital | Baseline | Current Quarter |
|-----------|----------|-----------------|
| St. Marys | 12 % | 14% |
| Metro | 21% | 23% |
| Spectrum | 22% | 20% |

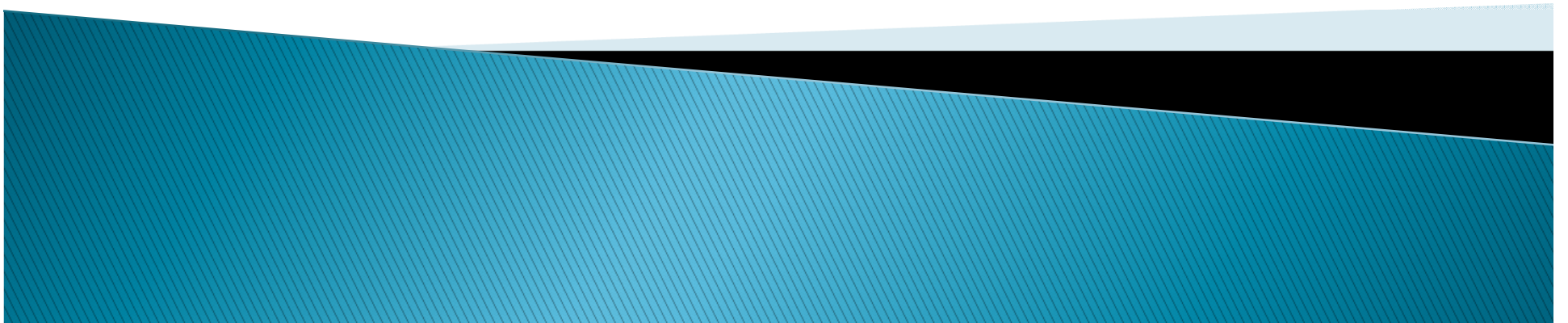


History and Progress

- ▶ Educational conferences e.g.) Umpierrez, Bode
- ▶ Inpatient education–pharmacists, physicians, nursing, lab, dietary
- ▶ Outpatient Education–PCP
- ▶ 2009 Greater Michigan ADA Diabetes Champions of the year
- ▶ 2010 tribute at the Michigan Diabetes and Kidney day
- ▶ Presented to GDAHc, Jan. 2010

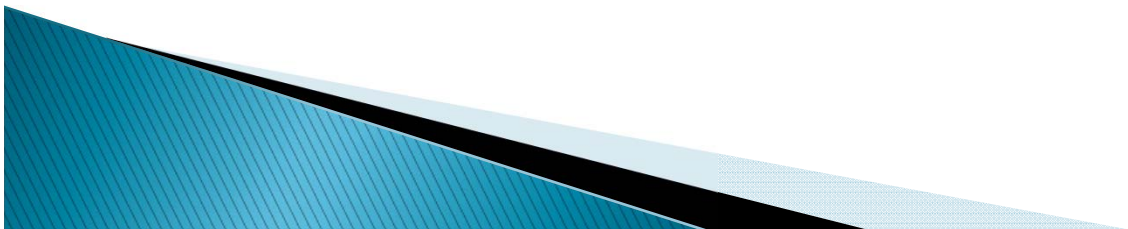


Peri-Op Glycemic Management



Peri-Op Glycemic Management Team

- ▶ Surgeon
 - ▶ Diabetologist/Hospitalist
 - ▶ Anesthesiologist
 - ▶ Diabetes Coordinator
-
- ❖ Spectrum Health, Metro, Saint Mary's

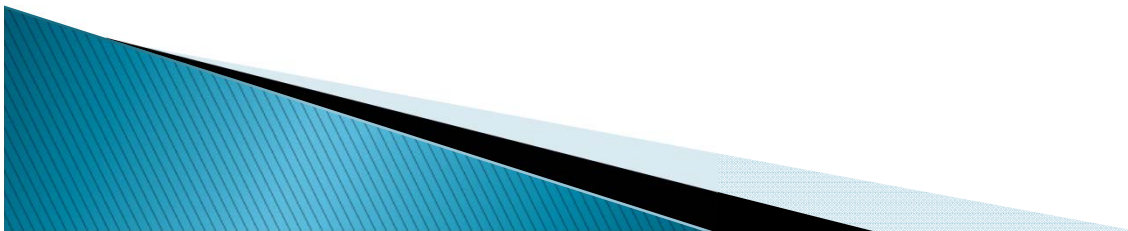


Peri-Op Glycemic Management

- ▶ Pre-op assessment and evaluation (A1c-FBS)
- ▶ Intra-operative insulin protocol
- ▶ Post-op diabetes /acute hyperglycemia management

*Physician communication letter

- Pre-op insulin dosing recommendation
- Insulin pump patient letter
- Hyperglycemia and surgical outcomes

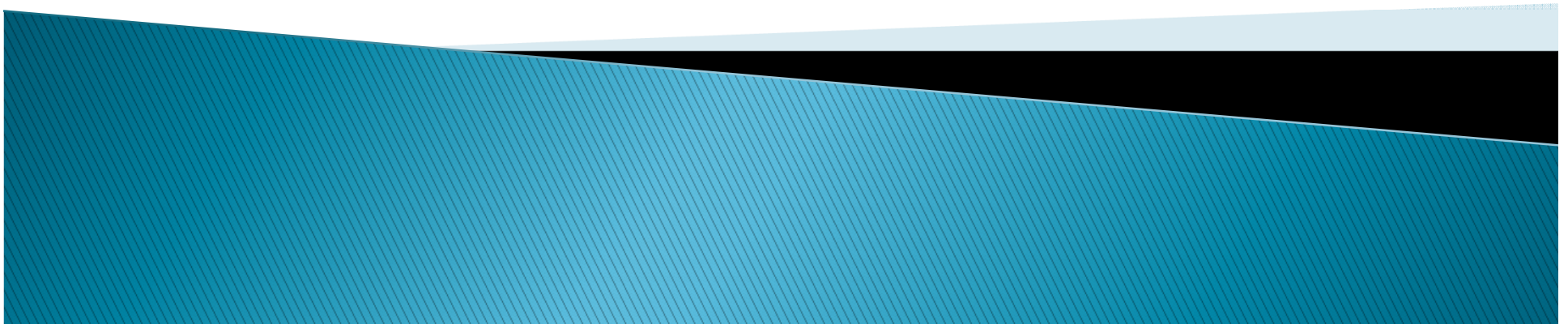


Hyperglycemia and Surgical Outcomes

- ▶ General vs. Vascular surgery
- ▶ Wound healing
- ▶ Effects on collagen formation
- ▶ Nosocomial and post-op infections
- ▶ Autonomic neuropathy
- ▶ Length of Stay (LOS)
- ▶ One protocol for patients, surgery dept.
- ▶ Outcomes—reduced LOS, post-op infections and complications



Re-engineered Diabetes Discharge (REDD)



REDD

- ▶ Study designed to address the consequences of uncoordinated care
- ▶ Does intensive patient education and enhanced care coordination, reduce the number of hospital readmissions
- ▶ Readmissions for CHF and Diabetes



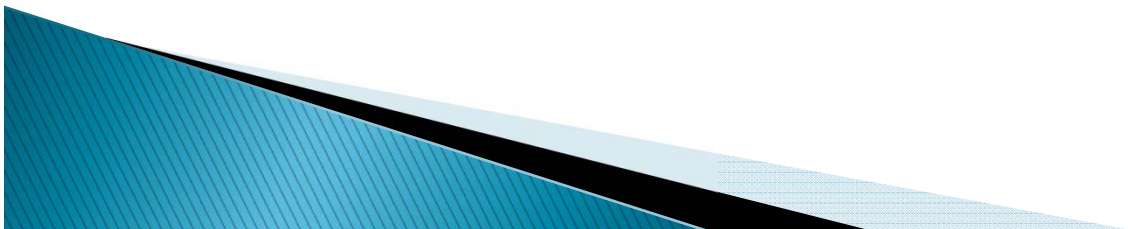
REDD Study Design and Methodology

- ▶ Primary endpoint– rate of 30 and 90 day all – cause readmissions
- ▶ Patients randomized if A1c > 8%
- ▶ Measure all cause readmissions to any GR area hospital
- ▶ Secondary endpoints
 - percent of PCP appointments made upon discharge
 - referrals to diabetes education (DSMT)



REDD Study Design

- ▶ Diabetes Nurse Expert–reviews discharge plan with patient. Reviews and reconciles medications. Problem solving, coordination of care. Assists in making post-discharge PCP appointment
- ▶ Clinical Pharmacist–calls pt 2–4 days post discharge. Reviews medications, side effects, formulary issues. Progress report to physician if needed. Reinforces discharge plan
- ▶ Principal Investigator



Q & A

