# Glytec



The Glycemic Management Journey

# GlucoMetrics

Customer only session

Dave Cooper RN, BSN Jordan Messler MD, SFHM, FACP Liz Kenney RN, BSN

10.26.23



# Introductions





Jordan Messler, MD, SFHM, FACP Chief Medical Officer, Glytec



# Agenda

- Understanding the data behind the data
- Case Review: Using Glucometrics improve outcomes
- Glucometrics Roadmap

Q and A



GlucoMetrics
with Glucommander
Analytics & Dashboards





# The data behind the data

















Caution in comparing reports evaluating different populations, different data sources

Can track same data over time







#### **INSULIN**



On insulin (30-40% patients)



#### **INSULIN**



On insulin (30-40% patients)







Most ICU patients getting POC done, even if BGs ok

Steroids/Tube Feeds, others being monitored even if don't need insulin



# HOSPITALIZED PATIENTS INSULIN POC AMARIAN MARIAN MARIAN

About 80% patients in non ICU setting

# ICU Utilization IV Insulin

- ADA Guidelines: Critically ill, >180 mg/dl
- ~20-25% hospitalized pts who need insulin are in the ICU setting
- ~50% ICU patients meet criteria for IV insulin
- ~80% ICU patients post CABG meet criteria

Yet, only 10-20% ICU patients who meet criteria placed on IV insulin

- 13% with sepsis who meet criteria on IV insulin
  - see <u>Guideline-Concordant Insulin Infusion Initiation Among Critically III Patients With Sepsis PubMed (nih.gov)</u>
- 7.5% discharges estimate could be on insulin (30% x 25%)
  - Real world 3-6% discharges on insulin





**INSULIN** 



POC



ICU

NON ICU



Data Sources may report only ICU vs non ICU when evaluating outcomes (ie SHM, RALS data)



# **HOSPITALIZED PATIENTS INSULIN**















SubQ Insulin









Hence, likely many simple monitored cases





#### **INSULIN**



#### POC





#### NON ICU





**GM IV** 

#### SubQ Insulin







Glucommander SubQ

POC



# 

**INSULIN** 



POC



ICU

NON ICU



IV

SubQ Insulin







POC

GM IV

Glucommander SubQ

Other

POC

Not all patients wind up on Glucommander.

About 75-125% IV, about 25-80% SubQ







#### **INSULIN**



#### POC





#### NON ICU





#### SubQ Insulin







Other

POC



**INSULIN** 



POC



ICU

NON ICU



IV

SubQ Insulin







POC

GM IV

Glucommander SubQ







Not all patients wind up on Glucommander.

About 75-125% IV, about 25-80% SubQ





**INSULIN** 



POC



ICU

**NON ICU** 



IV

SubQ Insulin





POC

GM IV

Glucommander SubQ

Other

POC

Lower BGs

**Highest BGs** 

Lower BGs







**INSULIN** 



# 

POC GM

Glucommande: SubQ

Other

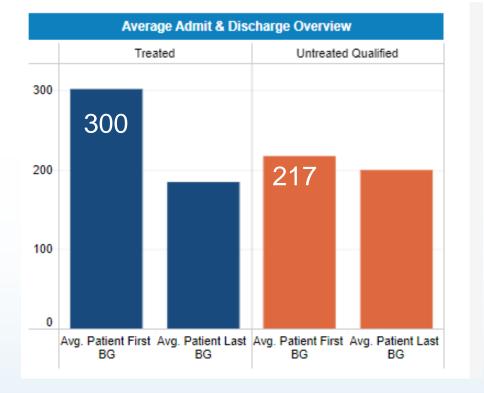
POC

TREATED

**UNTREATED** 

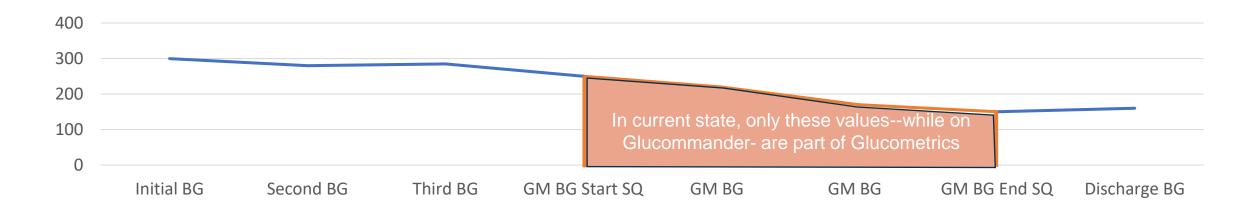
#### **UNTREATED**

attempt to find a population with persistent hyperglycemia >180 x 6, over 2+ days (not on Glucommander)





# Not All values Recorded in Glucometrics Example Patient





#### Another way to look at this: Not All values Recorded in Glucometrics



= Not Recorded in Glucometrics

#### PATIENT A

ER/Floor	Glucommander SubQ	Post GM			
	Hospital stay				

#### PATIENT B

ER/ICU	GM IV	Glucommander SubQ	Post GM
		Hospital stay	





#### **INSULIN**



#### POC



POC

Glucommander BGs

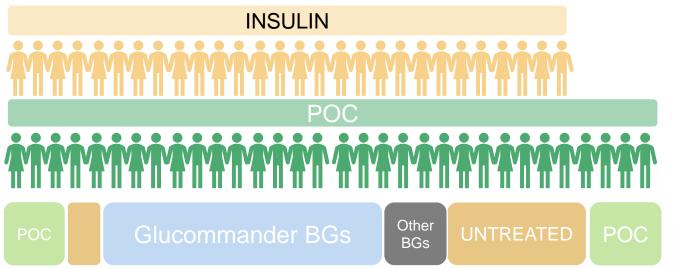
Other BGs

UNTREATED

POC







Glucometrics telling part of the full glycemic story at your hospital

Population of Treated ≠ Untreated

Glucommander BGs



SHM Data, other data sets ≠ Glucommander Patients

Since not the same groups, we will temporarily change how you access the Untreated report.

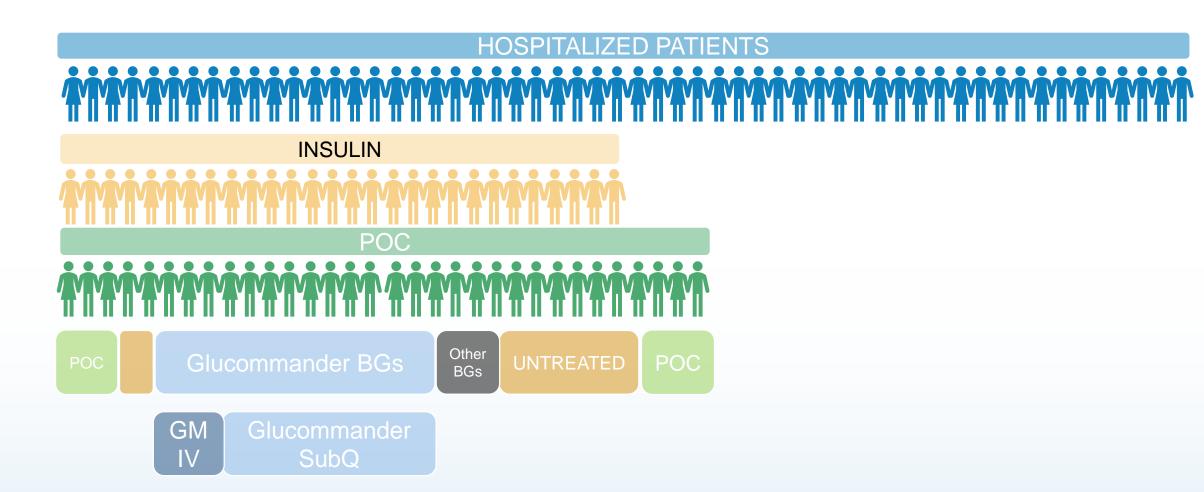
Your customer success manager will have access and can get them to you as needed.

Enhanced & Updated Untreated will be developed





# CMS Glycemia Measures



#### **CMS** Measures

#### **HOSPITALIZED PATIENTS**



#### **INSULIN**





#### **CMS** Measures

#### HOSPITALIZED PATIENTS



#### **INSULIN**



GM IV

Glucommander SubQ

#### **CMS** Measures

#### HOSPITALIZED PATIENTS



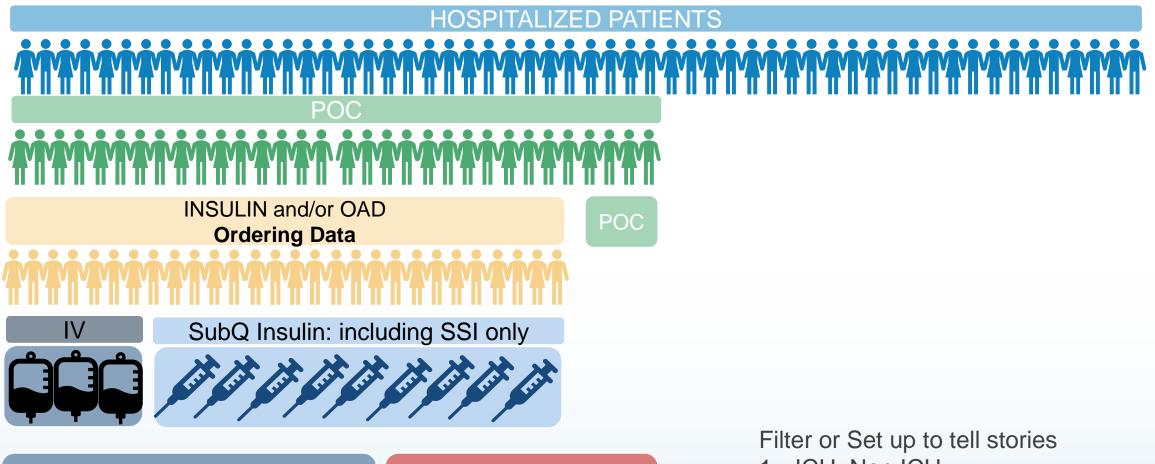
**INSULIN** 



GM IV

Glucommander SubC

#### **FUTURE STATE**



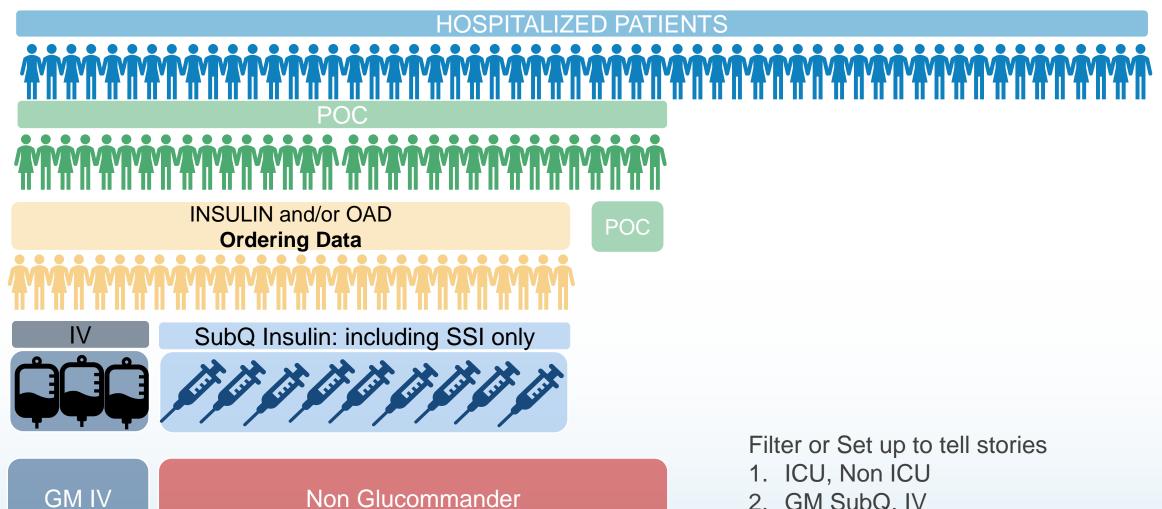
Non Glucommander

- 1. ICU, Non ICU
- 2. GM SubQ, IV
- 3. Not GM SubQ, SSI only, etc, IV
- Population: CT surgery, DKA, OB, etc.



Glucommander

# **FUTURE STATE: IV only sites**

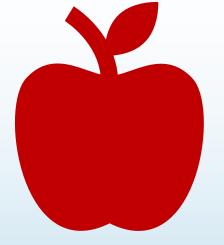


- GM SubQ, IV
- Not GM SubQ, SSI only, etc, IV
- Population: CT surgery, DKA, OB, etc



# **Bottom Line**

- Treated Glucommander: a piece of the story for a hospital
  - Higher utilization = more comprehensive story
- Untreated Story not meeting intent→ Contact your Customer Success Mgr
- Hospital Data, Vizient, SHM data with inclusions/exclusions Glucometrics doesn't have.
   May have calculations done slightly differently then Glucometrics
- CMS eCQMs: other inclusions/exclusions









# GlucoMetrics Case Study with Dave Cooper





GlucoMetrics
with Glucommander
Analytics & Dashboards





# Types of Measures



**Structure** 



**Outcomes** 

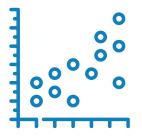
O-O-O

**Process** 



**Balancing** 

# Forms of Data



Scatter Plots (comparisons)



Run Charts (over time, control limits)



**Pareto Charts** 



# Analytics lifecycle Evolving from information to actionable insights

Data

Information

Insights
Knowledge

Decisions
Wisdom







## Often very minimal

- 2 measures
- •<40 mg/dl
- •<70 mg/dl

- 1 format
- %BGs

## **Few filters**

- Hospital
- Unit





## GlucoMetrics powered by Glytec Numerous metrics, multiple formats and filters

- Utilization
- Patient Day, Stay, % BGs
  - Hypoglycemia (<40, <54, <70)</li>
  - Hyperglycemia (>180 >250, >300)
  - In Range
- Outcomes by Target Range
- BG Timeliness (IV Insulin)
- Average Admission/Discharge BG
- Average BG
- # of BGs
- Other Reports
  - Real Time Data
  - Time to Target
  - Hypoglycemia Recheck

#### **FILTERS**

- 1. Date Range
- 2. Treatment type (IV, SubQ)
- 3. Unit
- 4. Facility
- 5. Category
- 6. Specialty

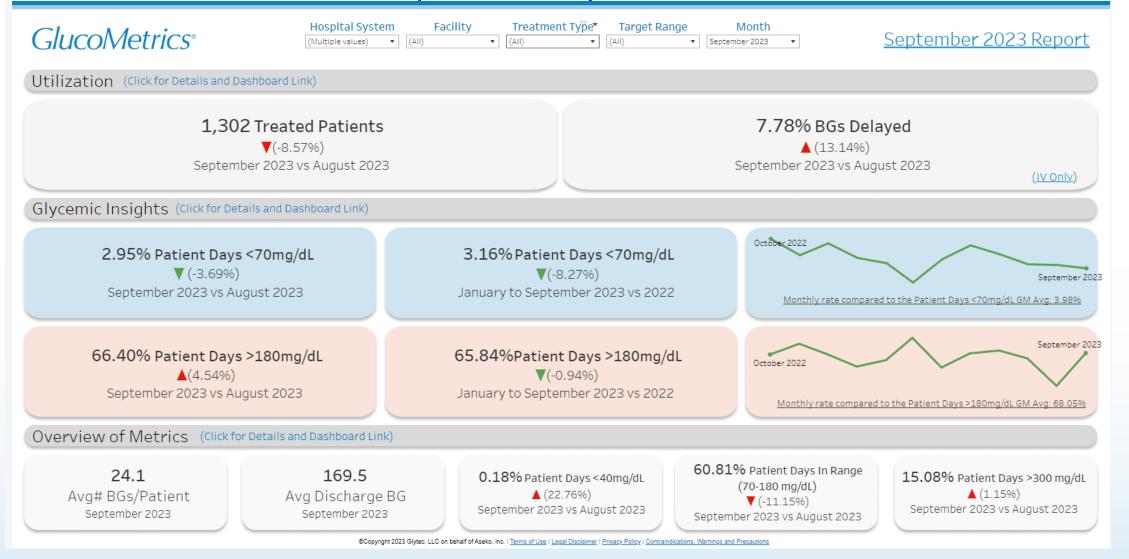


### What's Next?

- Improved Story Telling
  - Showing Value
  - Translating the Data to Actionable Insight
- Simplified Overview Glucometrics Hub
  - Bottom Line metrics
  - Improved Analytics Flow
- Partner with sites to develop Baseline Data Story
- CMS Metrics Insights Dashboards
  - <40 Patient Stay, >300 Patient Days
- Improve Hypoglycemia Story
- Hyperglycemia Story
  - Ex: >300 excluding 1<sup>st</sup> 24 hours on Glucommander
- Improving the "Untreated" Story



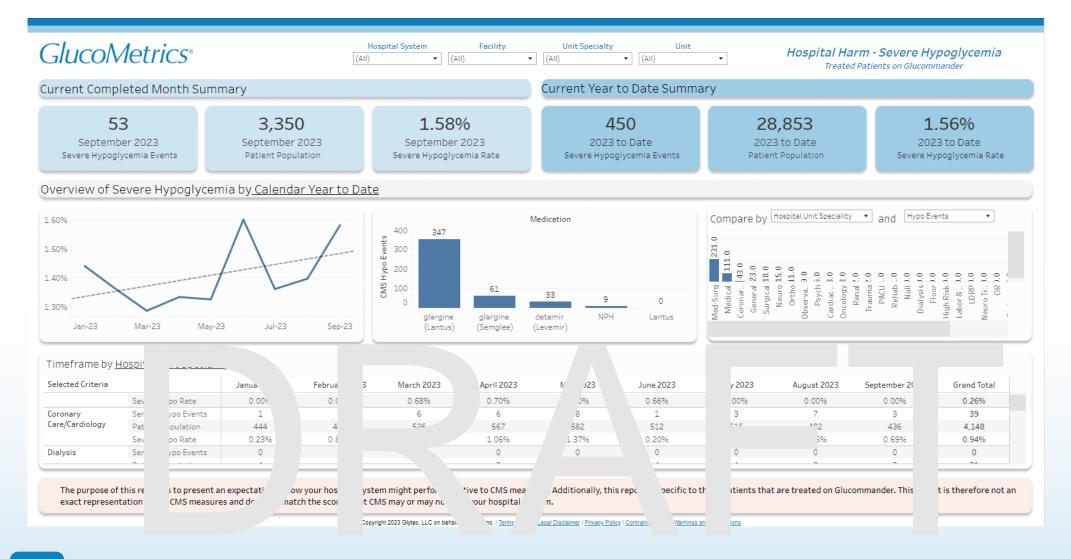
## Glucometrics Hub (DRAFT)





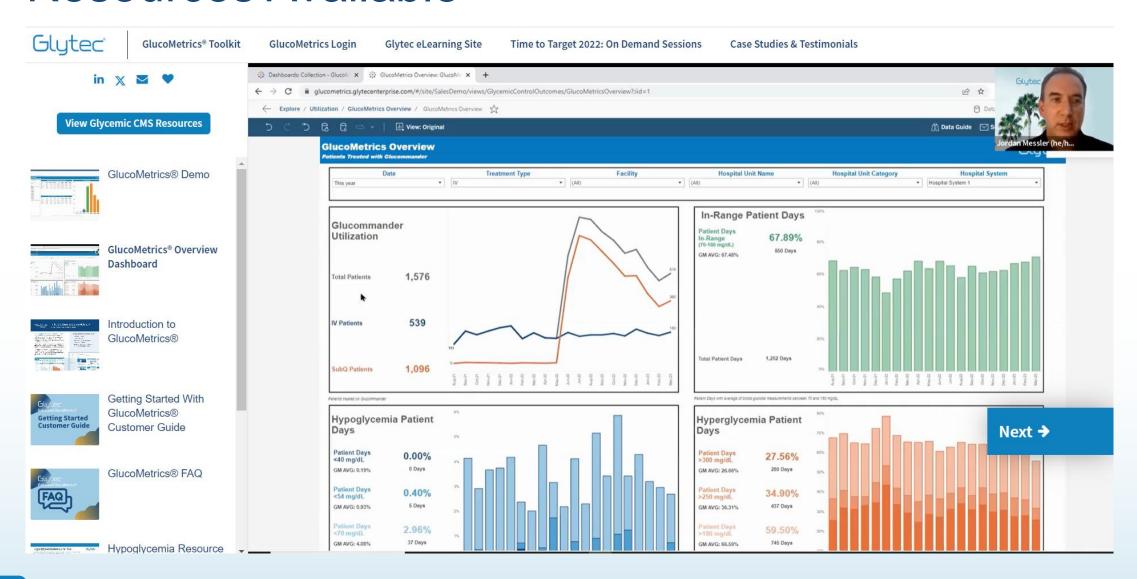


## CMS DASHBOARD (DRAFT)





## Resources Available



## Q and A

# What questions do you have? Type in the chat

For further questions/comments.... timetotarget@glytecsystems.com





#### **Patient Days**

Patients Treated with Glucommander

Glytec

6,627
Total Patient Days

0.12% % Patient Days <40mg/dL

<u>80.49%</u> % Patient Days In-Range (70-180mg/dL)

15.24% % Patient Days >300mg/dl

% Patient Days >300mg/dL
Hospital System
Hospital System 1 ▼
Facility
(All) ▼
Hospital Unit Category
(All)
Hospital Unit
(All)
Treatment Type
Ⅳ
Date
This year ▼
Measure Names
Patient Days <40mg/dL %
Patient Days <70mg/dL %
auent Days >70111g/UL 70
Patient Days >180mg/dL %
Patient Days >300mg/dL %

	Percen	t Patient Days <4	0 mg/dL	Percent Patie	ent Days In-Range (	70-180 mg/dL)	Percent Patient Days >300 mg/dL			
Period	Previous	Earlier	% Change	Previous	Earlier	% Change	Previous	Earlier	% Change	
Month	0.38%	0.25%	49.81%	81.62%	80.20%	1.77%	13.18%	15.74%	-16.24%	
Quarter	0.23%	0.09%	145.38%	79.31%	80.94%	-2.02%	15.61%	15.53%	0.53%	
Year	0.20%	0.14%	44.32%	78.39%	78.00%	0.51%	16.80%	17.22%	-2.49%	



#### Glyte

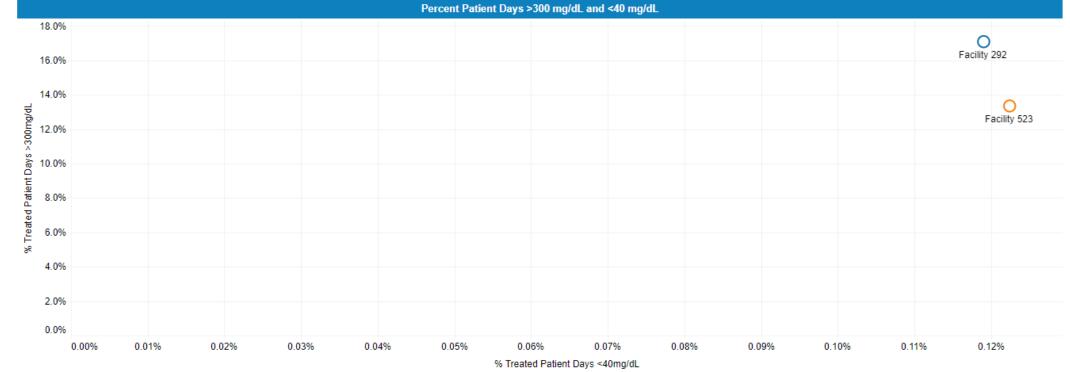
#### **Patient Days**

Patients Treated with Glucommander



Percent Patient Days Glycemic Outcomes by Facility											
UpdatedFacilityName	F	Total Patien = Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70-180	Patient Days >180mg/dL <sup>2</sup> %	Patient Days >250mg/dL %	Patient Days >300mg/dL %		
Facility 292		3,360	0.12%	0.74%	2.86%	77.68%	58.93%	25.15%	17.08%		
Facility 523		3,267	0.12%	1.74%	7.28%	83.38%	47.23%	19.71%	13.35%		

	Percent Patient Days Glycemic Outcomes by Target Range												
arget 🖵	Total Patient Days	Patient Days <40mg/dL	Patient Days <54mg/dL	Patient Days <70mg/dL	Patient Days In- Range (	Patient Days >180mg/d	Patient Days >250mg/d	Patient Days >300mg/d					
140 - 180	2,667	0.15%	0.71%	2.06%	59.66%	83.35%	44.13%	31.87%					
100 - 140	1,989	0.15%	2.11%	9.30%	98.64%	24.48%	3.87%	1.21%					
120 - 160	1,603	0.06%	0.44%	2.43%	96.19%	36.99%	6.43%	2.37%					
80 - 120	220	0.00%	4.09%	19.55%	92.73%	27.27%	8.18%	3.18%					
160 - 200	140	0.00%	0.00%	1.43%	26.43%	94.29%	70.71%	57.86%					
Multiple	51	0.00%	1.96%	7.84%	62.75%	68.63%	35.29%	23.53%					
70 - 100	11	0.00%	36.36%	54.55%	72.73%	54.55%	36.36%	27.27%					



#### Glytec

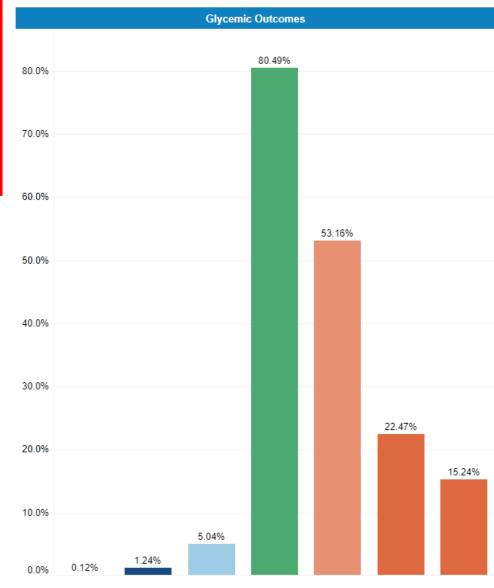
#### **Patient Days**



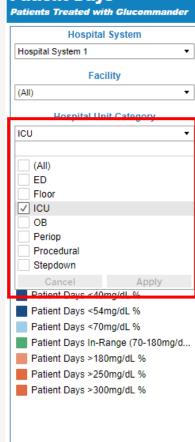
Percent Patient Days Glycemic Outcomes by Unit Category													
Category 📻	Total Patient Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70- 180mg/dL)	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %					
ICU	5,221	0.10%	1.05%	4.21%	84.60%	45.91%	16.97%	10.86%					
Stepdown	1,287	0.16%	1.01%	4.43%	76.92%	48.17%	22.14%	13.91%					
Periop	974	0.10%	0.21%	1.03%	91.27%	42.71%	9.65%	4.52%					
ED	521	0.00%	0.00%	0.19%	8.83%	97.31%	90.02%	82.73%					
ОВ	232	0.00%	5.17%	21.55%	92.24%	28.88%	9.48%	4.31%					
Procedural	16	0.00%	0.00%	0.00%	87.50%	12.50%	0.00%	0.00%					
Floor	3	0.00%	0.00%	0.00%	66.67%	66.67%	0.00%	0.00%					

	Percen	t Patient Da	ys Glycem	ic Outcome	es by Unit	Specialty		
HospitalUnitSpeci 루	Total Patient Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70-	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %
Cardiac Surgery	3,604	0.08%	1.30%	5.74%	97.86%	24.53%	3.36%	1.00%
OR	936	0.11%	0.11%	0.96%	91.77%	41.56%	8.87%	3.95%
Coronary Care/Cardiolo	931	0.32%	0.86%	3.76%	56.50%	74.54%	42.00%	30.08%
General	521	0.00%	0.00%	0.19%	8.83%	97.31%	90.02%	82.73%
Multiple	441	0.00%	0.68%	1.59%	80.73%	68.25%	18.37%	6.80%
Medical	413	0.00%	0.73%	1.94%	46.00%	89.59%	54.48%	41.16%
Med-Sura	382	0.26%	1 31%	2.88%	57.85%	84 55%	48 69%	35 34%

		Percei	nt Patient D	ays Glycemi	c Outcomes	by Unit		
UpdatedHos	Total Patient Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70- 180mg/dL)	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %
Unit 292.16	166	0.00%	1.20%	4.22%	45.78%	81.93%	53.01%	41.57%
Unit 292.24	1	0.00%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%
Unit 292.25	1,638	0.00%	0.37%	2.26%	96.64%	28.39%	3.79%	1.28%
Unit 292.32	273	0.00%	0.00%	0.00%	5.13%	98.90%	92.31%	83.52%
Unit 292.49	138	0.00%	2.90%	15.94%	92.75%	21.01%	8.70%	5.07%
Unit 292.53	2	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	0.00%
Unit 292.56	382	0.26%	1.31%	2.88%	57.85%	84.55%	48.69%	35.34%



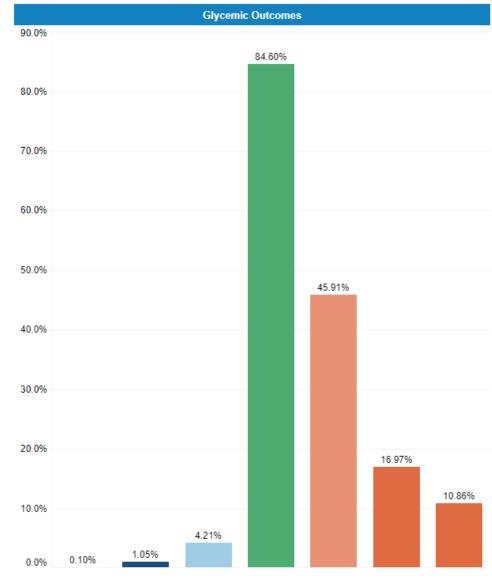
#### **Patient Days**



	Percent Patient Days Glycemic Outcomes by Unit Category													
Category	Total Patient Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70- 180mg/dL)	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %						
ICU	5,221	0.10%	1.05%	4.21%	84.60%	45.91%	16.97%	10.86%						

	Percen	t P <mark>atie</mark> nt Da	ys Glycem	ic Outcom	es by Unit !	Specialty		
HospitalUnitSpeci =	Total Patient Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70- 180mg/dL)	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %
Cardiac Surgery	3,190	0.09%	1.16%	5.33%	97.77%	23.39%	3.13%	0.94%
Multiple	441	0.00%	0.68%	1.59%	80.73%	68.25%	18.37%	6.80%
Med-Surg	382	0.26%	1.31%	2.88%	57.85%	84.55%	48.69%	35.34%
Coronary Care/Cardiolo	377	0.27%	1.33%	4.51%	59.15%	75.60%	41.64%	32.89%
Medical	337	0.00%	0.89%	2.08%	44.81%	93.18%	57.86%	45.40%
Trauma	233	0.00%	0.43%	1.72%	73.39%	79.40%	27.90%	15.02%
Neuro Trauma	155	0.00%	0.65%	1 29%	69.03%	86.45%	35.48%	23.23%

		Percei	nt Patient D	ays Glycemi	ic Outcomes	by Unit		
UpdatedHos	Total Patient Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70- 180mg/dL)	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %
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Unit 292.56	382	0.26%	1.31%	2.88%	57.85%	84.55%	48.69%	35.34%
Unit 292.60	155	0.00%	0.65%	1.29%	69.03%	86.45%	35.48%	23.23%
Unit 292.103	441	0.00%	0.68%	1.59%	80.73%	68.25%	18.37%	6.80%
Unit 523.4	211	0.47%	1.42%	4.74%	69.67%	70.62%	32.70%	26.07%
Unit 523.5	1,552	0.19%	2.00%	8.57%	98.97%	18.11%	2.45%	0.58%



#### Glytec

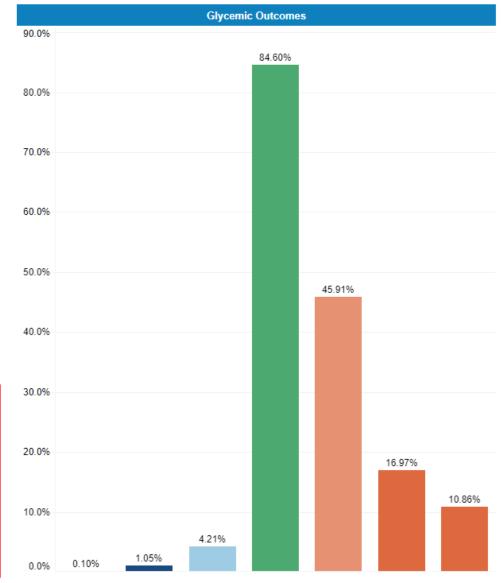
#### **Patient Days**



	Percent Patient Days Glycemic Outcomes by Unit Category													
Category	Total Patient Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70- 180mg/dL)	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %						
ICU	5,221	0.10%	1.05%	4.21%	84.60%	45.91%	16.97%	10.86%						

Percent Patient Days Glycemic Outcomes by Unit Specialty										
HospitalUnitSpeci 🖵	Total Patient Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70- 180mg/dL)	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %		
Cardiac Surgery	3,190	0.09%	1.16%	5.33%	97.77%	23.39%	3.13%	0.94%		
Multiple	441	0.00%	0.68%	1.59%	80.73%	68.25%	18.37%	6.80%		
Med-Surg	382	0.26%	1.31%	2.88%	57.85%	84.55%	48.69%	35.34%		
Coronary Care/Cardiolo	377	0.27%	1.33%	4.51%	59.15%	75.60%	41.64%	32.89%		
Medical	337	0.00%	0.89%	2.08%	44.81%	93.18%	57.86%	45.40%		
Trauma	233	0.00%	0.43%	1.72%	73.39%	79.40%	27.90%	15.02%		
Neuro Trauma	155	0.00%	0.65%	1 29%	69.03%	86 45%	35 48%	23 23%		

	Percent Patient Days Glycemic Outcomes by Unit										
Updat 🖵	Total Patient F Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70- 180mg/dL)	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %			
Unit 292.25	1,638	0.00%	0.37%	2.26%	96.64%	28.39%	3.79%	1.28%			
Unit 523.5	1,552	0.19%	2.00%	8.57%	98.97%	18.11%	2.45%	0.58%			
Unit 292.103	441	0.00%	0.68%	1.59%	80.73%	68.25%	18.37%	6.80%			
Unit 292.56	382	0.26%	1.31%	2.88%	57.85%	84.55%	48.69%	35.34%			
Unit 523.11	337	0.00%	0.89%	2.08%	44.81%	93.18%	57.86%	45.40%			
Unit 523.19	233	0.00%	0.43%	1.72%	73.39%	79.40%	27.90%	15.02%			
Unit 523.4	211	0.47%	1.42%	4.74%	69.67%	70.62%	32.70%	26.07%			



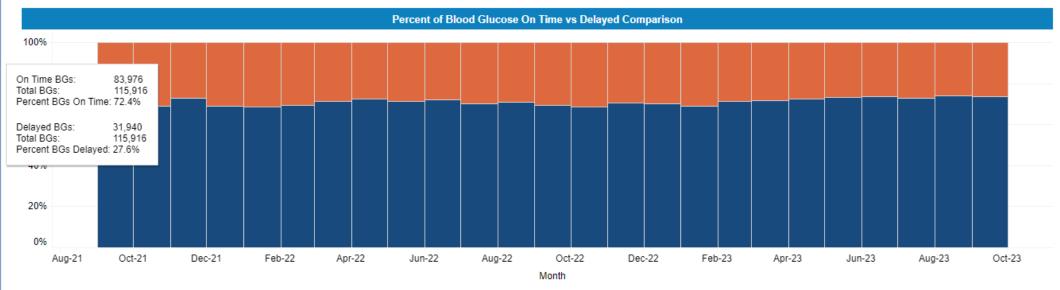
#### **Blood Glucose Measurement Timeliness**

Glyte

Patients Treated with Glucommander







Percent of Blood Glucose On Time by Facility								
Facility	F	BGs Delayed	BGs On Time					
Facility 523		35.3%	64.7%					
Facility 126		32.0%	68.0%					
Facility 174		31.0%	69.0%					
Facility 232		22.2%	77.8%					
Facility 543		22.2%	77.8%					
Facility 292		20.2%	79.8%					
Facility 152		19.6%	80.4%					
Facility 231		18.4%	81.6%					
Facility 233		15.1%	84.9%					
Facility 241		13.6%	86.4%					
Facility 214		12.1%	87.9%					
Facility 173		11.5%	88.5%					
Facility 234		8.4%	91.6%					
Facility 146		7.7%	92.3%					
Facility 143		5.6%	94.4%					

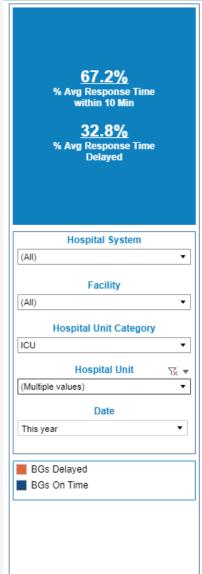
Percent of Blood Glucose On Time by Hospital Category						
Category	F	BGs Delayed	BGs On Time			
Procedural		38.5%	61.5%			
Stepdown		33.0%	67.0%			
ICU		28.1%	71.9%			
ED		21.4%	78.6%			
∩R		21 3%	79.7%			

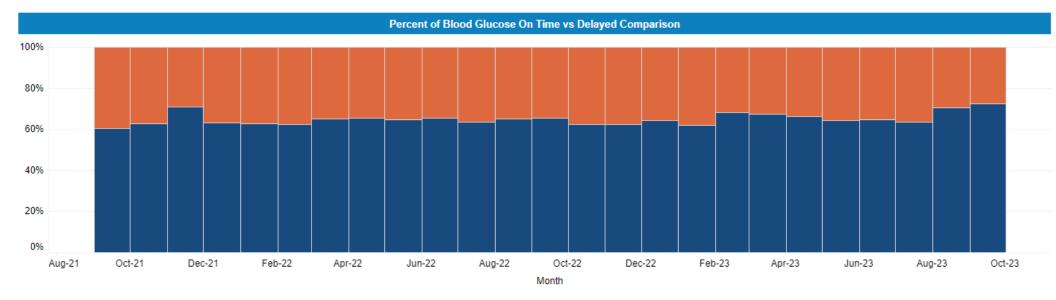
Percent of Blood Glucose On Time by Hospital Unit							
Unit	F	BGs Delayed	BGs On Time				
Unit 152.15		50.0%	50.0%				
Unit 543.12		50.0%	50.0%				
Unit 523.1		47.6%	52.4%				
Unit 523.5		46.6%	53.4%				
Unit 523.6		44.7%	55.3%				
Unit 292.94		39.5%	60.5%				
Unit 174.18		35.3%	64.7%				

#### **Blood Glucose Measurement Timeliness**

Glyte

Patients Treated with Glucommander





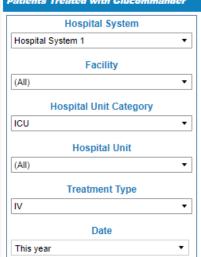
	Percent of Blood Glu	icose On Time by Facility			Percent of Blood Glucose On Time by Hospital Category	
Facility	F	BGs Delayed	BGs On Time	Category	BGs Delayed	BGs On Time
Facility 523		46.6%	53.4%	ICU	32.8%	67.2%
Facility 292		20.4%	79.6%			

Percent of Blood Glucose On Time by Hospital Unit						
Unit	F	BGs Delayed	BGs On Time			
Unit 523.5		46.6%	53.4%			
Unit 292.25		20.4%	79.6%			

#### Glyte

#### **Patient Days**

Patients Treated with Glucommander



Percent Patient Days Glycemic Outcomes by Facility									
UpdatedFacilityName	F	Total Patien = Days	Patient Days <40mg/dL %	Patient Days <54mg/dL %	Patient Days <70mg/dL %	Patient Days In- Range (70-180	Patient Days >180mg/dL %	Patient Days >250mg/dL %	Patient Days >300mg/dL %
Facility 292		2,767	0.04%	0.61%	2.31%	84.35%	48.90%	16.99%	10.48%
Facility 523		2,454	0.16%	1.55%	6.36%	84.88%	42.54%	16.95%	11.29%

Percent Patient Days Glycemic Outcomes by Target Range									
target 📻	Total Patient Days	Patient Days <40mg/dL	Patient Days <54mg/dL	Patient Days <70mg/dL	Patient Days In- Range (	Patient Days >180mg/d	Patient Days >250mg/d	Patient Days >300mg/d	
140 - 180	2,020	0.10%	0.79%	2.13%	65.84%	81.73%	37.43%	25.35%	
120 - 160	1,576	0.00%	0.38%	2.35%	97.08%	25.57%	3.05%	0.89%	
100 - 140	1,521	0.20%	2.04%	8.88%	99.28%	16.70%	2.04%	0.46%	
160 - 200	72	0.00%	0.00%	2.78%	36.11%	94.44%	55.56%	40.28%	
Multiple	29	0.00%	3.45%	6.90%	65.52%	68.97%	34.48%	17.24%	
80 - 120	5	0.00%	20.00%	20.00%	80.00%	20.00%	20.00%	0.00%	

