

GlyCon study

**Glycaemic Control of Stress Hyperglycaemia
implemented in Intensive Care**

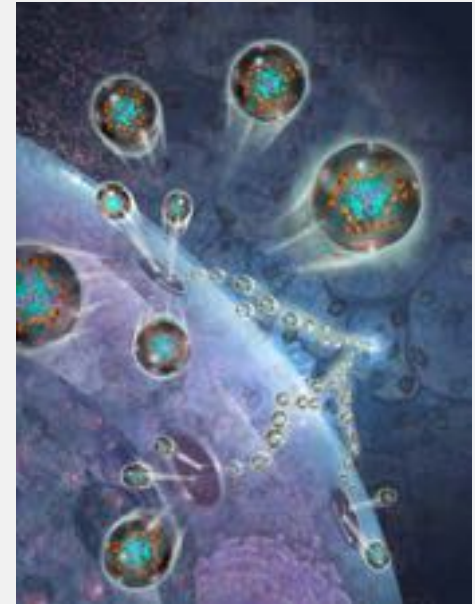
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Dr. Gary Adams*

Outline of this presentation

- Stress hyperglycaemia
- GlyCon study
- Protocols
- Professionals
- What's next

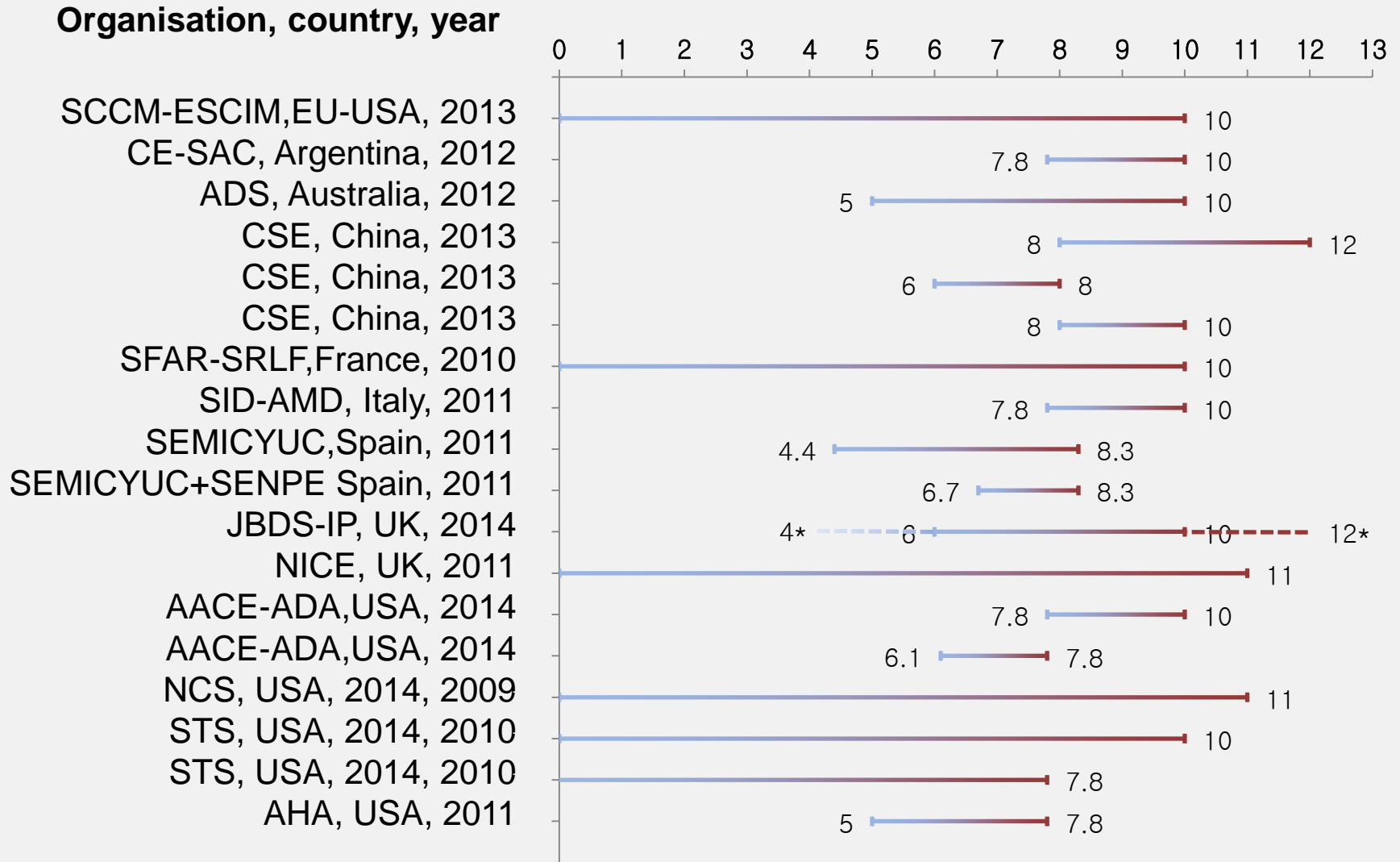
Stress hyperglycaemia in intensive care

- Random glycaemia **>10 mmol/L** (>180 mg/dL) (ADA, 2014);
- Consequence of **metabolic response**
- Affected by patient predisposition and treatment
- Prevalence in ICU: varied. **46%** of at least one BG>10 mmol/L (Cook *et al.*, 2009)
- Potentially **harmful** if left untreated
- **Discrepant** evidence about treatment: tight (Leuven studies) vs. flexible (NICE SUGAR) glycaemic control approaches



Insulin resistance,
by Jim Dowdalls

Recommended glycaemic targets by organisation (mmol/L)



GlyCon Study

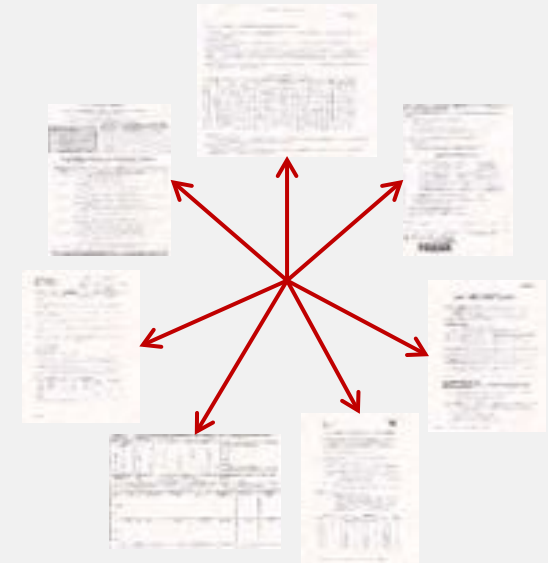
- Aim: investigate the **impact** of the methods for glycaemic control implemented in intensive care
- Multi-centre (7 ICUs)
- Multi-methods:
 - **Document review of ICU protocols**
 - **Survey to ICU professionals**
 - Retrospective cohort study of glycaemic control methods' effectiveness, efficiency and safety



United Kingdom,
from Google Maps

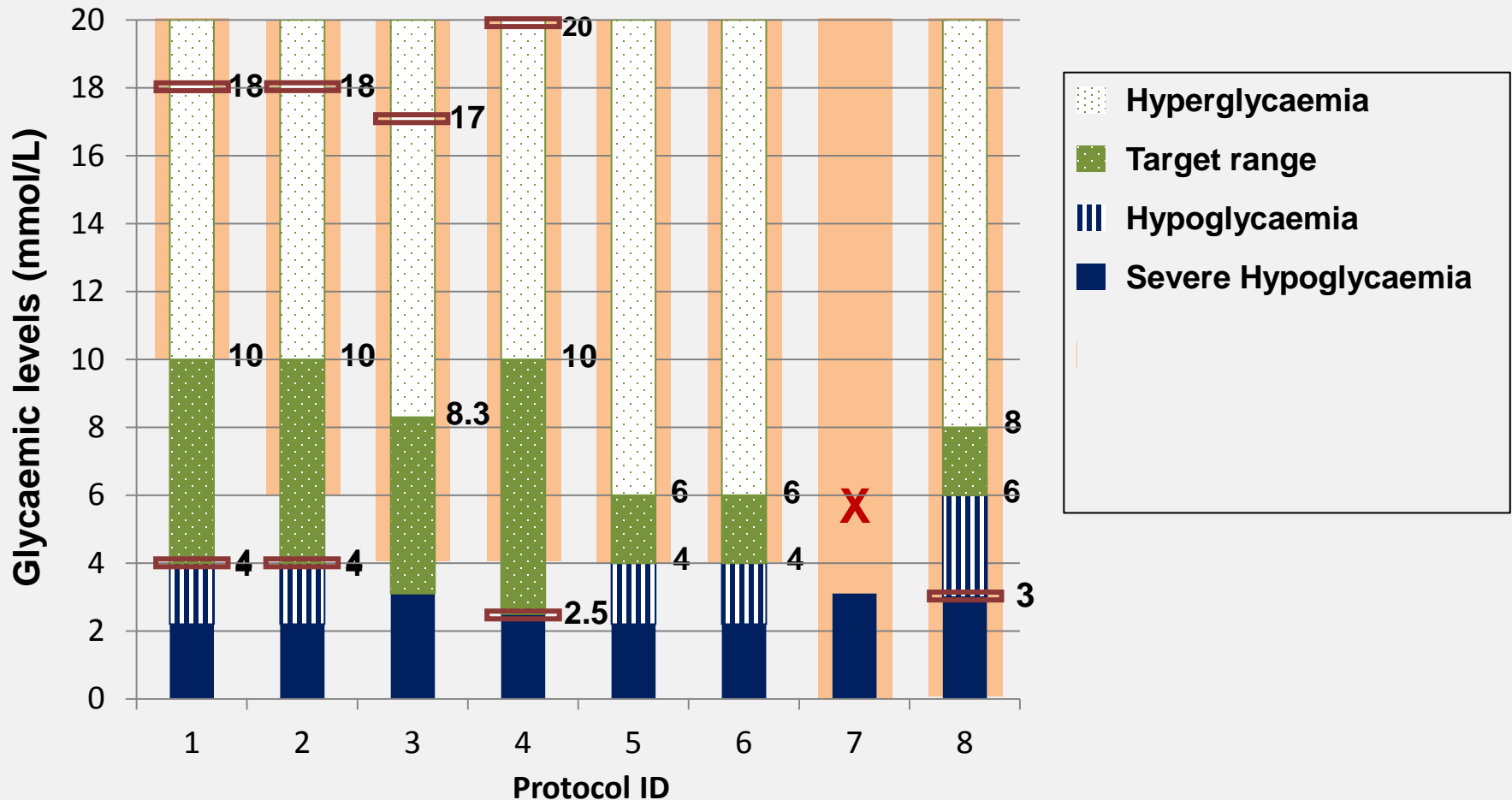
GlyCon: protocol recommendations for glycaemic control

- ICU network:
 - well organised collaborative network
 - aim: common standards of care and reduced inequalities
- Different recommendations in their protocols:
 - target patients
 - target glycaemic levels
 - recommended methods and frequency for monitoring
 - insulin titration algorithms



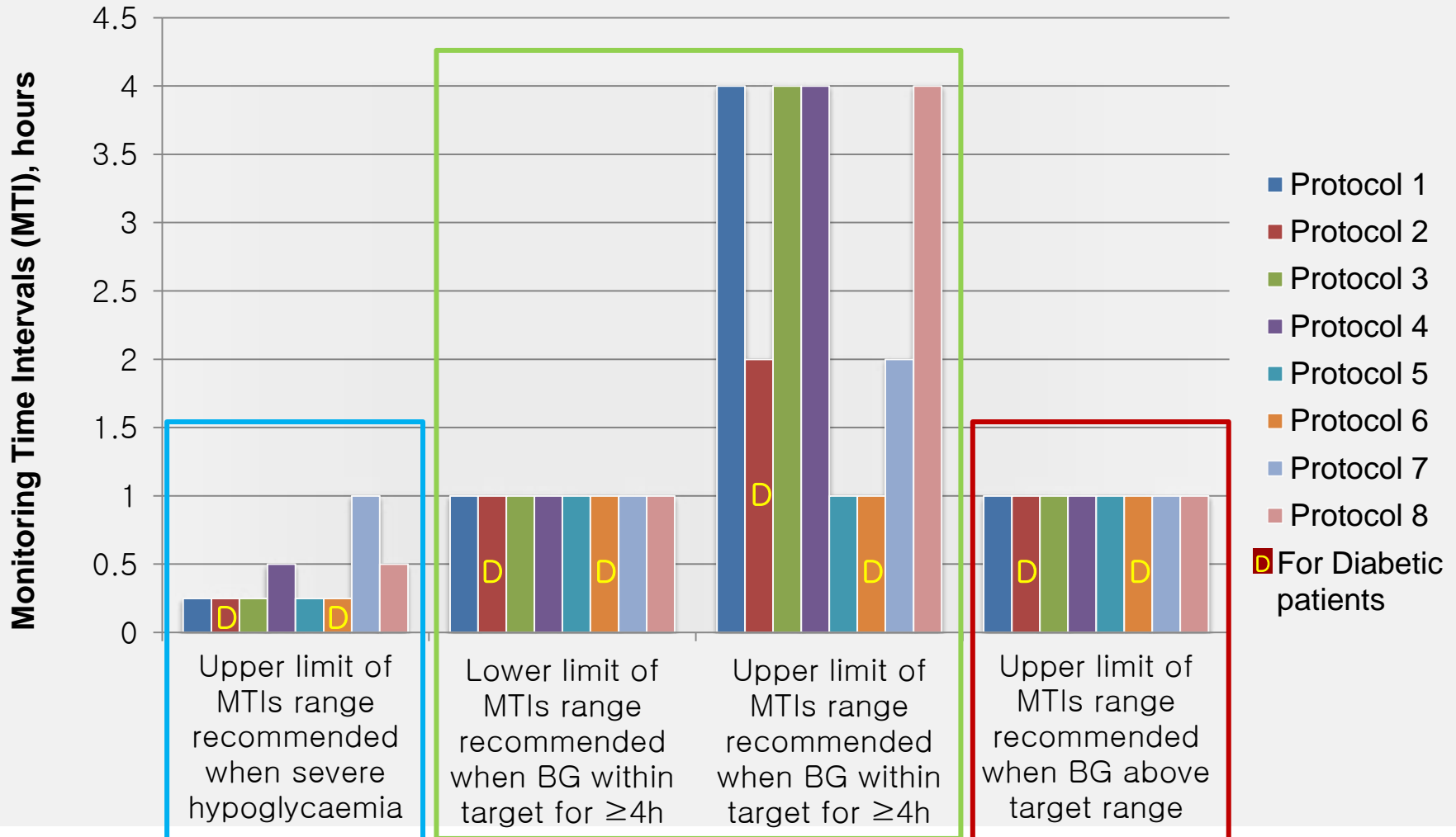
GlyCon: protocol recommendations for glycaemic control

Glycaemic levels defining “glycaemic status” and key actions for the management of stress hyperglycaemia



GlyCon: protocol recommendations for glycaemic control

Recommended Monitoring Time Intervals (MTI) in each protocol according to “glycaemic status”



GlyCon: protocol recommendations for glycaemic control

Conclusion

- Well organised collaborative ICU network
- ICU Protocols for glycaemic control differ widely in numerous aspects
- Differences may be due to current discrepant evidence about and lack of national/international standardisation of treatment

GlyCon: professionals' opinion on glycaemic control

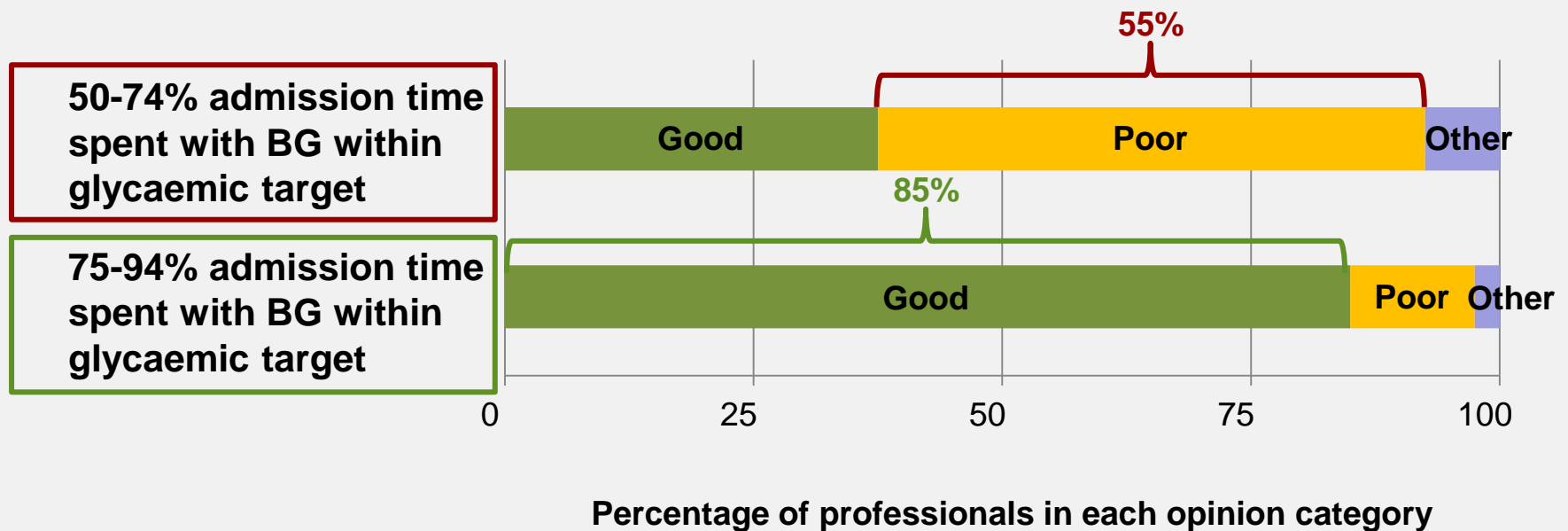
- Instrument: Online survey
- Population: ICU professionals from GlyCon ICUs
- Questions on:
 - pre-specified **% of admission time**: “good” or “poor” glycaemic control?
 - pre-defined **deviations from protocol** recommendations: “major” or “minor”?
 - **hypoglycaemic events**: when treat with glucose?
- Final sample: n=40, 11 nurses and 29 medical doctors



Intensive Care Unit by Sir Roy Calne

GlyCon: professionals' opinion on glycaemic control

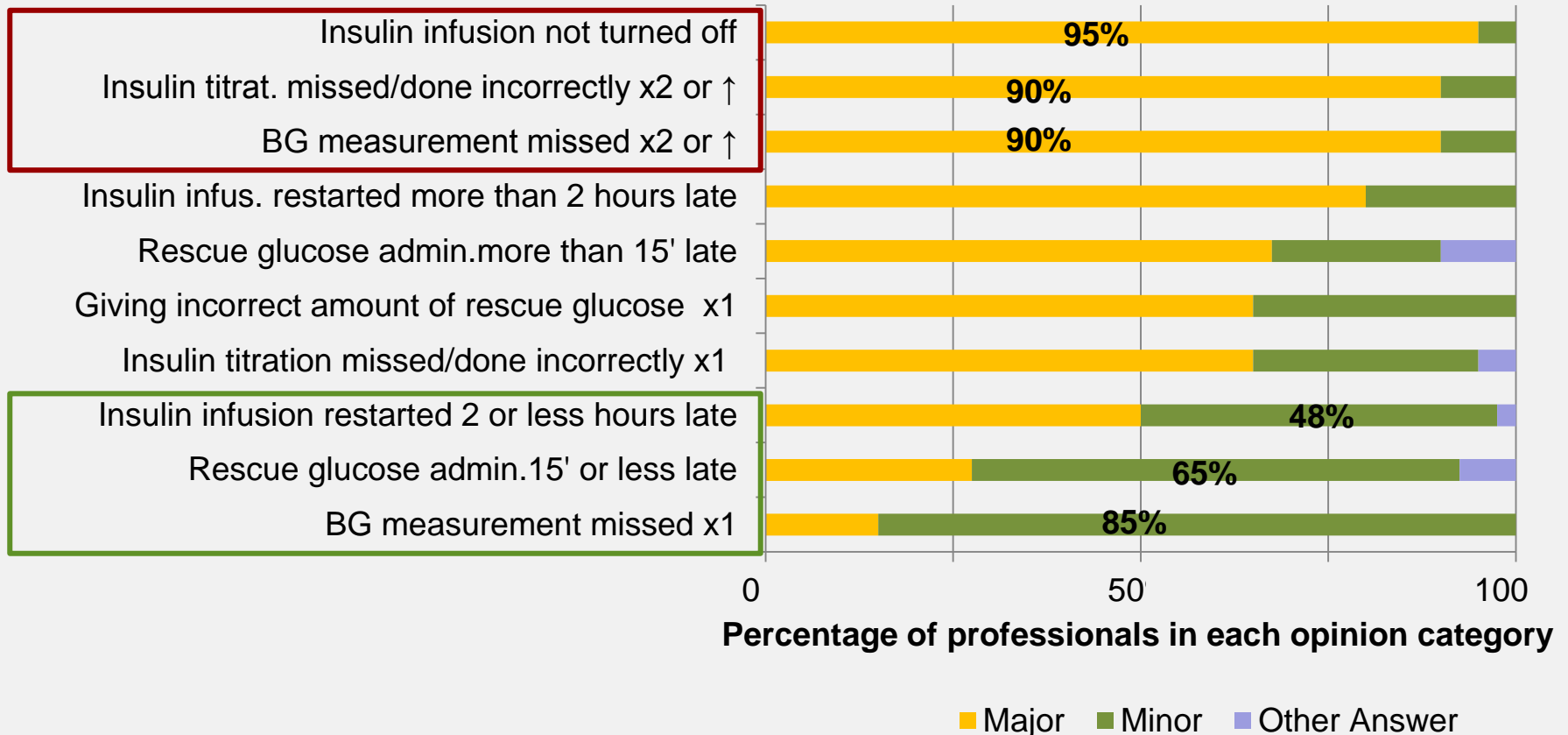
“In your opinion, do the percentages of admission time spent within the target glycaemic ranges below constitute "good" or "poor" glycaemic control?”



GlyCon: professionals' opinion on glycaemic control

“In your opinion, do the deviations from your protocol recommendations below constitute “major” or “minor” deviations?”

Deviations from protocol recommendations



GlyCon: professionals' opinion on glycaemic control

Conclusion

- ICU professionals showed different views on various aspects of glycaemic control
- These differences must be accounted for in studies looking at the effectiveness and safety of methods for glycaemic control
- A larger study is necessary to confirm the results of this pilot survey
- The causes and factors which may be related to these differences should be explored further

What's next?

- What do clinicians do for the management of stress hyperglycaemia?
- How **effective, efficient and safe** is their management?
- To what extent do they adhere to what is recommended in their protocols for glycaemic control?



ICU nurse, by BSIP, Universal Images Group

Thank you

Questions?

Acknowledgements

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