



### Introduction

- "The Golden Hour" is typically the first hour after birth when the baby is placed skin-to-skin on the mother's chest to aid a smooth transition from the womb to the outside world.
- When a baby is born preterm or with high medical risk the "Golden Hour" is a critical period when the baby is stabilised with evidence-based medical interventions associated with long-term benefits.
- These interventions can make this a traumatic experience compounded by physical separation of mother and baby.
- Neurodevelopmental care strategies are widely recognised for improving neonatal outcomes, but little is known about their application during the "Golden Hour".

## Background

- Stress and pain are linked to poor health and development outcomes.
- Babies in the neonatal unit can experience over 20 painful and/or stressful events in one day.
- Bab E, born at 33 + 2 -weeks gestion in a stable condition experienced 31 painful and/or stress events during the 'Golden Hour'.
- Mother's mother was her birth partner.

### **Acknowledgements and Contact**

Acknowledgement and Contacts Thanks to

Baby E. and her family for allowing us to share information about thir journey. Inga Warren, who supervised T Bellingham during this project and assisted with preparing the abstract and poster. Torbay and South Devon NHS Foundation Ttrust for permission to publish this study. Contact – Trisha Bellingham – <u>trish@finetraininguk.com</u>

Inga Warren – info@finetraininguk.com

- Case study for FINE level 3 training.

- her mother.
- grandmother and baby had a stabilising effect.



Baby E immediately after delivery.Stable, resting on mother's legs



Shows stress signs before drop in Sats.

# **The Not-So-Golden Hour**

<sup>1</sup>T Bellingham, <sup>2,3</sup>I Warren

<sup>1</sup>Torbay and South Devon NHS Foundation Trust<sup>, 2</sup>University College London Hospital, <sup>3</sup>FINE Neonatal UK Ltd

# **Method**

Observation and documentation of 1<sup>st</sup> hour of life recorded minute by minute.

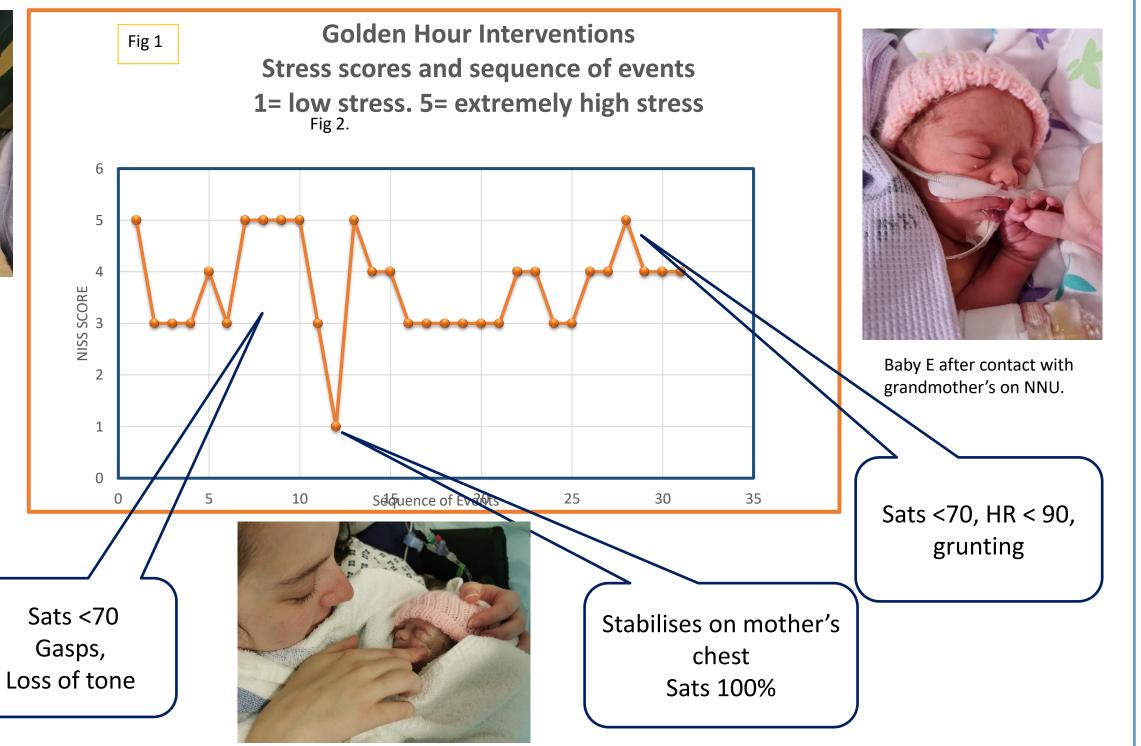
• Modified Neonatal Infant Stressor Scale (NISS) used to to categorise painful or stressful interventions Fig 1. • Interventions categorised as Invasive (A), Non-Invasive (B), Handling/Positioning (C) Fig 2.

# **Results**

• Baby E experienced 31 stressful and/or painful events during the "Golden Hour

• These included multiple episodes of handling and movement through space as well as medical procedures Some provision was made for comfort with wrapping, holding, positioning and Baby Ebried contact with

• The picture that emerged from the observations was that routine "Golden Hour" interventions may have increased the need for medical intervention and that moments of connection between mother or



Opportunities may arise to implement neurodevelopmental care strategies that may improve the "Golden Hour" experience and outcomes. E.g.

10.



### **Conclusions**

This case study raises questions about how interventions during the "Golden Hour" are managed to avoid iatrogenic effects of treatment.

Neurodevelopmental care strategies with family participations may improve infant stability during the "Golden Hour".

### Recommendations

• Skin to skin straight after birth. (Ref)

 Which procedures e.g. observation, cannulation vit K, and noninvasive respiratory support, can be carried out on the mother or birth partner? • Four handed care for all procedures. • Nesting, lateral positioning. • Pacing.

Bergman NJ, The neuroscience of birth – and the case for Zero Separation 2014 Curationis 37(2):1

Cousins S. Blencowe NS. Blazeby JM What is an invasive procedure? A definition to inform study design, evidence synthesis and research tracking BMJ Open 2019;9:e028576. doi: 10.1136/bmjopen-2018-028576

Croop, S.E.W., Thoyre, S.M., Aliaga, S. et al. The Golden Hour: a quality improvement initiative for extremely premature infants in the neonatal intensive care unit. J Perinatol 40, 530-539 (2020). https://doi.org/10.1038/s41372-019-0545-0 Holsti L et al, 2006, Behavioral responses to pain are heightened after clustered care in preterm infants born between 30 and 32

weeks gestation, Clin J Pain, 22(9):757-764. Hucklenbruch-Rother E, Vohlen C, Mehdiani N, Keller T, Roth B, Kribs A, Mehler K. Delivery room skin-to-skin contact in preterm infants affects long-term expression of stress response genes. Psychoneuroendocrinology. 2020 Dec;122:104883. doi:

Inder TE, Volpe JJ, Anderson PJ. Defining the Neurologic Consequences of Preterm Birth. N Engl J Med. 2023 Aug 3;389(5):441-453 doi: 10.1056/NEJMra2303347. PMID: 37530825.

Newnham CA, Inder TE, Milgrom J. Measuring preterm cumulative stressors within the NICU: the Neonatal Infant Stressor Scale. Early Hum Dev. 2009 Sep;85(9):549-55. doi: 10.1016/j.earlhumdev.2009.05.002. Epub 2009 Jun 10. PMID: 19520525. Sharma, D. Golden hour of neonatal life: Need of the hour. maternal health, neonatal and perinatal 3, 16 (2017). https://doi.org/10.1186/s40748-017-0057-x

Shevell MI. The ethics of case reports. Paediatr Child Health. 2004 Feb;9(2):83-4. doi: 10.1093/pch/9.2.83. PMID: 19654984; PMCID PMC2720465

Warren I, 2017. Family and Infant Neurodevelopmental Education: An innovative, educational pathway for neonatal healthcare professionals. Infant, 13(5):200-03. www.finetraininguk.com

<sup>11.</sup> WHO Immediate KMC Study Group; Arya S, et al. Immediate "Kangaroo Mother Care" and Survival of Infants with Low Birth Weight. N Engl J Med. 2021 May 27;384(21):2028-2038. doi: 10.1056/NEJMoa2026486. PMID: 34038632; PMCID: PMC8108485.