



# A QI Project to Decrease Suboptimal Patient Transfers from the Neonatal Intensive Care Unit to the Special Care Nursery

Douglas K<sup>1</sup>, Eriobu C<sup>2</sup>, Barnhill K<sup>2</sup>, Allis K<sup>2</sup>, Sanderson A<sup>2</sup>, Tumin D<sup>1</sup>, Akpan US<sup>1</sup>  
<sup>1</sup>Brody School of Medicine at East Carolina University <sup>2</sup>Vidant Medical Center, Greenville, NC

## BACKGROUND

- Transitions of care are a critical point in a patient's hospitalization course
- If improperly done, can lead to staff and family dissatisfaction as well as medical errors
- We designed this QI project to address several problems noted in the transfer process between our Neonatal Intensive Care Unit (NICU) and Special Care Nursery (SCN)

## AIM

To decrease the number of suboptimal transfers from the NICU to the Special Care Nursery by 50% in 9 months

\*Suboptimal transfer - discharge within 72 hours of transfer or return to the NICU within 5 days of transfer.

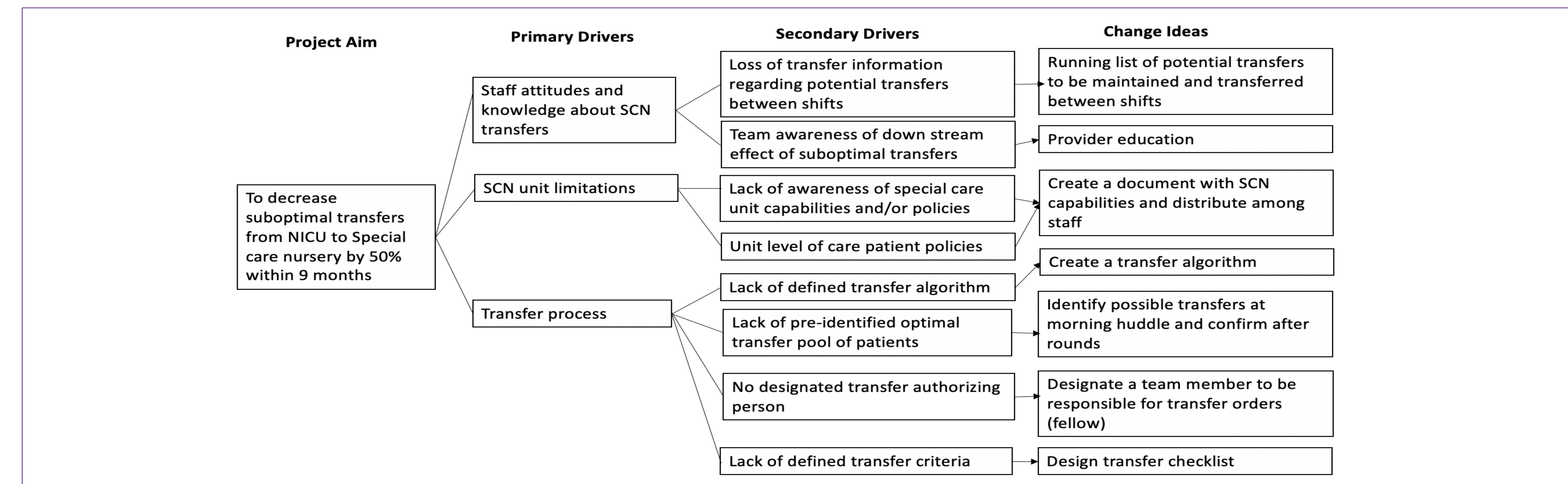
## METHODS

- Multi-disciplinary team formed
- Baseline data collected over 15 months
- Transfer checklist designed
- Transfer algorithm designed
- 3 staff surveys completed – start, midway and end of the improvement period.
- Monitoring done for sustained improvement for 6 additional months after improvement period

### Measures

- Outcome measures:**
  - The percentage of suboptimal transfers monthly
  - The percentage of parents notified before transfer (goal 95%)
- Process measures:**
  - The percentage of patients with a completed transfer checklist
  - The percentage of staff that report satisfaction with the transfer process (goal 30%)
- Balancing measure:**
  - The percentage of providers who report increase in the burden of the transfer process (goal ≤ 50%)

## KEY DRIVER DIAGRAM



## PDSA CYCLES

PDSA 1	Baseline data collection Transfer checklist implemented First staff survey completed
PDSA 2	Transfer algorithm designed Second staff survey completed
PDSA 3	Checklist modified Transfer algorithm modified Algorithm posted in key clinical areas SCN and NICU nurses use transfer checklist for report before transfers

## RESULTS

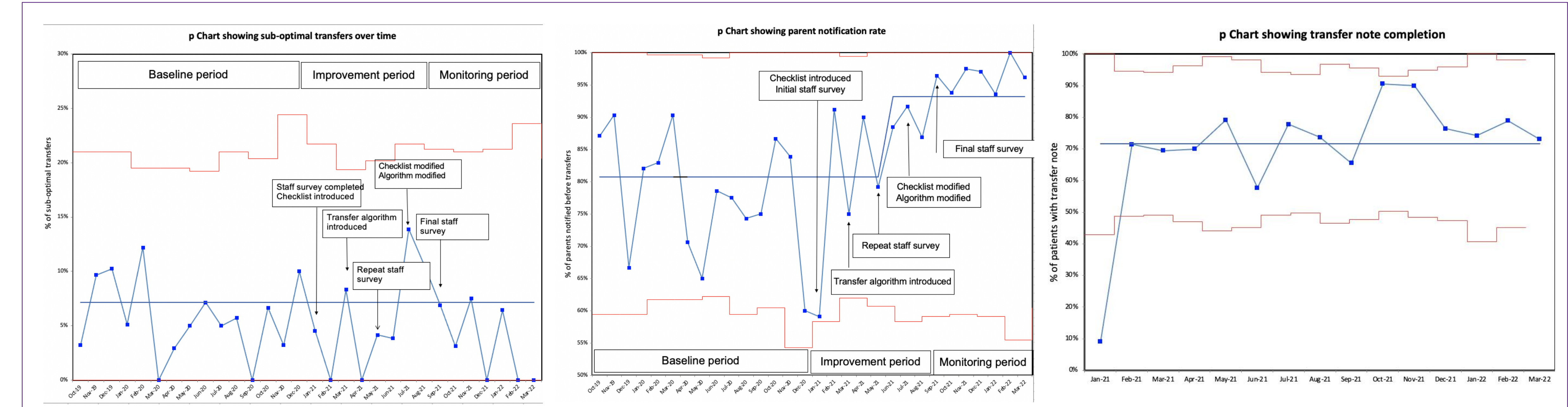


Table 1. Patient characteristics in baseline and intervention periods.

Variable	Baseline period (N=488) N (%) or median (IQR)	Intervention period (N=458) N (%) or median (IQR)	P-value
Gestational age (weeks)	32 (30, 34)	33 (30, 34)	0.872
Birth weight (grams)	1742 (1266, 2221)	1750 (1270, 2170)	0.846
SCN length of stay (days) <sup>a</sup>	15 (8, 26)	14 (8, 26)	0.493
Reason for transfer <sup>b</sup>			
Supplemental heat	N/A	234 (51%)	
Bradycardia monitoring	N/A	21 (5%)	
Learning to feed by mouth	N/A	369 (81%)	

<sup>a</sup> Data missing for 26 cases in intervention period.  
<sup>b</sup> Data not collected in baseline period.  
 N/A, not available; SCN, special care nursery

Table 2. Survey responses by timepoint.

Survey question/response	Initial survey (N=54)	Midway survey (N=41)	Final survey (N=46)	P-value	
	N (%)	N (%)	N (%)	Midway vs. Initial	Final vs. Initial
NICU has clearly defined process for transfer to SCN <sup>a</sup>				0.421	0.002
Yes	25 (46%)	24 (60%)	35 (76%)		
No or not sure <sup>b</sup>	29 (53%)	16 (40%)	11 (24%)		
There is a clear person responsible for transfer decisions	24 (44%)	22 (54%)	29 (63%)	0.373	0.063
Parents are always notified prior to SCN transfer <sup>a</sup>	13 (24%)	23 (58%)	33 (72%)	0.001	<0.001
Is the transfer process burdensome?				0.287	0.550
Not at all	27 (50%)	27 (66%)	28 (61%)		
Somewhat	23 (43%)	13 (32%)	16 (35%)		
Very	4 (7%)	1 (2%)	2 (4%)		
Satisfaction with the transfer process				0.204	0.003
Not at all	3 (6%)	3 (7%)	1 (2%)		
Somewhat satisfied	43 (80%)	26 (63%)	25 (54%)		
Very satisfied	8 (15%)	12 (29%)	20 (43%)		

<sup>a</sup> Data missing for 1 case in midway survey.  
<sup>b</sup> 'Not sure' response option not included on final survey.  
 NICU, neonatal intensive care unit; SCN, special care nursery

## DISCUSSION

- Lack of a well-defined transfer process, designated person responsible for transfer decisions and poor parent notification rate before transfers identified in initial survey
- Several multi-disciplinary interventions implemented including transfer checklist and algorithm implementation
- Checklist comprised of transfer eligibility criteria and tasks to be completed before transfers
- Repeat survey indicates significantly increased staff satisfaction with the transfer process and parent notification rate, without undue burden reported.
- Difficulty reaching outcome goal of decreased suboptimal transfers due to staffing/census changes due to COVID-19 pandemic
- Transfer note more consistently completed than checklist as checklist is a paper document
- Plans ongoing to incorporate checklist into the electronic medical records.

## ACKNOWLEDGEMENTS

Elaine Henry, Vidant Health's CRG office, ECU ITCS, and the ECU LINC Scholars program.