a project by Evan Barry, Jiakun Li, Olivia Wu

Redesigning the Neonatal ICU
Stanford, CA
Date: Nov 16, 2013 (SAT)  Baby: "Sasha"

Today's Weight: 950gms Parents: Nurse & Doc

Plan of Care / Goals:
- ENROLL IN PAP
- Breast Milk in Refrigerator

Nurse: Ella

Nurse Practitioner: GMP

Neonatologist: Dr. F

Bath: 15 min, "s" bath

Notes: ""0.4% oral solution"" 12/16/13 2:40 PM"
...Is my baby going to be okay?
We talked to parents, nurses, doctors...

“I’m a fan of too much information...there is nothing a parent should not be entitled to know.”

“We need to be able to communicate every piece of information on an eighth grade level”

“I can get the information, Google it...but I’m not a doctor, so I don’t know what’s important.”

“If something bad happens, parents feel like they would have caught it given more information
Kelly wants to stay informed, but feels overwhelmed by all of the data and has a difficulty understanding the information without a nurse.
how might we translate already existing data into understandable stories and trends?
• Web-based application
• Make NICU more understandable
• Components
  – Status updates with trend reports
  – Daily plan
  – Messaging portal with nurses
  – Medwiki
  – Photos
  – Notes
feedback

Simplicity is key
Information input logistics
Extra burden on nursing staff
Nurse/parent priorities
What if baby isn’t doing well?

Scott, parent
Will’s Way Foundation

Nick, parent
Graham’s Foundation

Brittany, parent
Will’s Way Foundation
reaction

Simplicity is key → answer “Is my baby OK?”

Information input logistics → be wary of EPIC

Extra burden on nursing staff → remove nurse input

Nurse/parent priorities

What if baby isn’t doing well? → this was a challenge.
how might we empower and make parents feel more comfortable by helping them organize their NICU experience?
second prototype

- Digitized
- More playful/user-friendly
- Can add metrics
- Added hospital component
- Language settings
- Removed back/forth messaging
  - Only nurses push notifications
www.tinyurl.com/NICUportal2
Importance of journaling

Flexibility

“Even if my baby wasn’t doing well, I’d want to know. And do something about it.”

Information format
reaction

Importance of journaling

Flexibility

“Even if my baby wasn’t doing well, I’d want to know. And do something about it.”

Information format

combine notes and photos

modular metrics

consider notification system, include how to contact nurse

consider units, context
final prototype
key problems

Parents...

• may not know care schedule to plan when to come in
• are not always immediately notified of changes to baby’s care
• feel like they’re getting in the way of nursing staff and don’t want to disturb them with questions
• feel overwhelmed with machines and numbers
• are given a lot of information and don’t always remember it or write it down
• are not aware of the resources the hospital has
Mark just had a major drop in his O2 levels and we needed to get him on an ventilator. He is stable now.
**Plan of the Day**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00</td>
<td>Kangaroo Care</td>
<td>Emily</td>
</tr>
<tr>
<td>10:30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13:45</td>
<td>Bathing</td>
<td>Joy</td>
</tr>
<tr>
<td>14:30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Mark
1 week 3 days

Doctor: Watson
Nurse: Emily, Joy

WEIGHT: 1612 gms
TEMP: 98.2 °F
HEART RATE: 152 /min
O₂ SATURATION: 85 %

MEDICATION
NEW

Home  Hospital  Sched  Journal  Settings
Mark
1 week 3 days

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Nurse: Emily, Joy

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MEDICATION

NEW

Home  Hospital  Sched  Journal  Settings
O2 Saturation

Highest: 88
Lowest: 72
in 24 hrs
O2 saturation measures the quantity of hemoglobin in the blood that is saturated with oxygen.
<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 Sat</td>
<td>10:02 AM</td>
<td>Gaining weight, with fewer desaturation on CPAP than yesterday!</td>
</tr>
<tr>
<td>14 Fri</td>
<td>2:02 PM</td>
<td>Questions: What is NG tube? What is NEC?</td>
</tr>
</tbody>
</table>
Hospital

- LuPa Café
  Room 3-201
  ......

- Family Lounge Room
  Room 3-204
  ......

- Nearby Restaurants
  ......
NICU classes

10:00 am NICU 101
Topics include unit orientation, your baby’s team, visitation guidelines, an introduction to monitoring equipment, and much more!

Breastfeeding Support Group

8:00 pm Room 2-204
A group where moms can get advice and information, as well as meet other NICU moms and share experiences. This group does not meet every Monday, so look for postings at the HUC station, milk depot, bedside flyers, or ask your BEST team member
Mark

1 week 3 days

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MEDICATION

NEW

Home  Hospital  Sched  Journal  Settings
last prototype

- www.tinyurl.com/NICUportal3
- Removal of Medwiki
- Clarifying notification system
- Integration of components
  - Journal = notes + photos
  - Schedule = care team + daily plan
future direction

• Logistics of EMR integration
• Test with a small group of users at LPCH
• Expand usage to other departments
  – PICU, other ICU?
thank you!