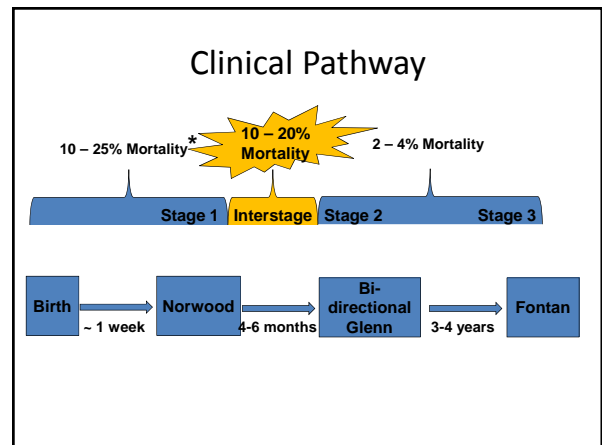
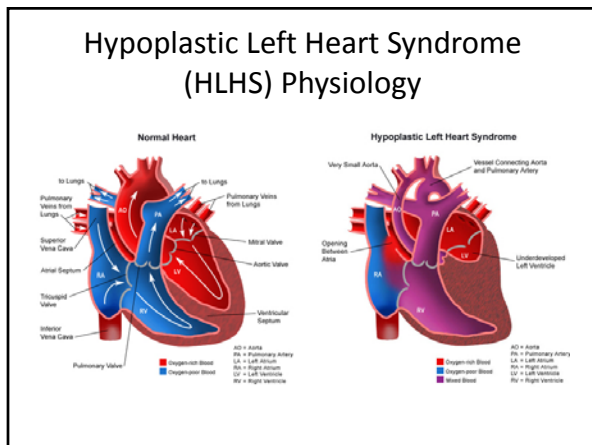


SINI 2017 27th Summer Institute in Nursing Informatics
 Clinical Practice, Health, and the Internet of Things
 July 11-14, 2017
 University of Maryland School of Nursing, Baltimore, MD

Program transformation from paper documentation to proactive data transfer:
 Use of an app in outpatient pediatric cardiology home monitoring program

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- ### Objectives
- Discuss single ventricle anatomy and home monitoring
 - Review transition of paper documentation to innovation EMR
 - Engage in a multisite CHAMP program discussion



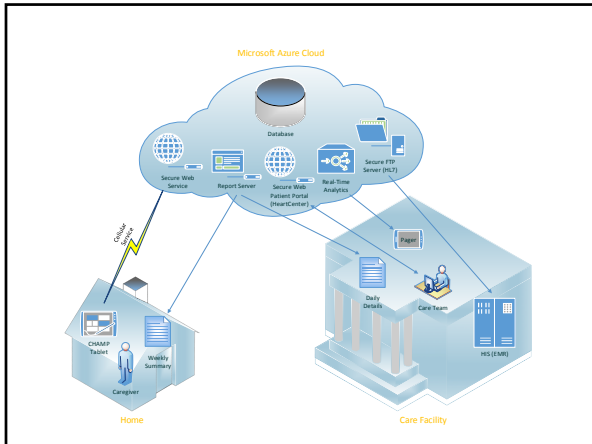
Interstage Monitoring 2000 - 2015

X 20

Monitoring for: John Test

| | | |
|-------------------|-----------------|----------|
| Intake | Output | Weight |
| Oxygen Saturation | Video Recording | Concerns |

Red Flags Contact Us Data Logout



EMR Integration

| Integration Status | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|--------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Integration Status | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
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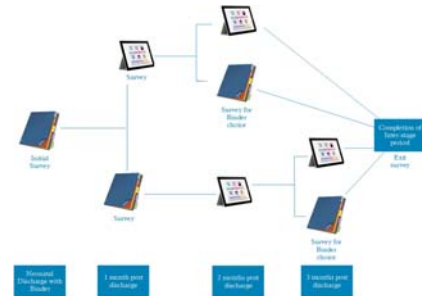
The screenshot shows a complex EMR interface with a sidebar on the left containing various menu items like "Home", "Patient List", "Orders", "Reports", etc. The main area displays a patient's information, including a "Weight Trends" graph and a "Feeding progress and plan" section.



After Balloon Plasty of Recoarctation



Randomized Crossover Trial

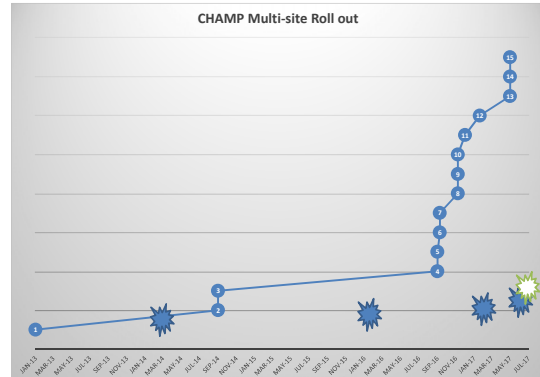


| Inter-stage outcomes | CHAMP | Binder | p-value |
|---|---|-------------|---------|
| Mortality | 0 | 0 | |
| Total inter-stage days | 2951 | 1960 | |
| Inter-stage days per patient (median (IQR)) | 81 (51, 115) | 53 (29, 85) | 0.025 |
| Number of patients having any readmissions | 25 (80.6%) | 14 (45.2%) | 0.074 |
| Number of patients having any unplanned readmissions | 17 (54.8%) | 14 (45.2%) | 0.999 |
| Interstage Events | | | |
| | Total and (per 100 inter-stage days) | | |
| Total number of red flags | 215 | 135 | |
| (Red flags per days) | (7.29) | (6.89) | 0.612 |
| Total number of ER visits | 20 | 13 | |
| (per 100 days) | (0.68) | (0.66) | 0.962 |
| Total number of unplanned readmissions (per 100 days) | 26 (0.88) | 19 (0.97) | 0.748 |
| Total number of ICU days (per 100 days) | 54 (1.83) | 153 (7.81) | <0.0001 |

| Top 25% | High Resource Utilization (HRU) n=16 | Low Resource Utilization (LRU) n=57 | p-value |
|--|---------------------------------------|-------------------------------------|---------|
| Interstage monitoring, days (Median (IQR)) | 96 (75, 141.5) | 100 (80.0, 127.0) | 0.889 |
| Unplanned Readmission | 15 (93.8%) | 30 (52.6%) | 0.003 |
| CHAMP Monitoring prior to readmission | 7 (43.8%) | 39 (68.4%) | 0.071 |
| Inpatient charges without Glenn (Median (IQR)) | \$105924.80 (\$44903.20, \$309595.70) | \$34,669 (\$16490.70, \$47107.00) | 0.003 |
| Age at Admission, days (Median (IQR)) | 80.5 (50.1, 119.5) | 125.3 (88.5, 156.4) | 0.005 |
| Readmission from Clinical Change, hours (Median (IQR)) | 6.4 (3.0, 14.9) | 2.5 (0.0, 5.3) | 0.009 |
| Cardiac catheterization | 2 (12.5%) | 29 (50.9%) | 0.006 |
| Cardiac operation | 5 (31.1%) | 3 (5.3%) | 0.011 |
| General surgery during readmission | 4 (25.0%) | 3 (5.3%) | 0.037 |

Conclusions

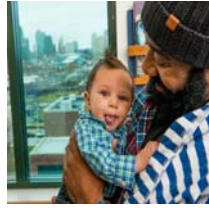
- Interstage SV infants are at high risk for readmissions
- Delays in care are associated with HRU;
- CHAMP for data transfer with nursing coordinators evaluating data proactively may help decrease delays.
- This study may provide the basis for predictive analytic algorithms and multi-site expansion



- 96057 Data points
- 5316 Videos
- 87 kids safely to 2nd surgery
- 3.6% interstage mortality



Acknowledgments



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Amy Ricketts, Bryan Beaven,
Amy Lay, Suma Goudar,
Whitney Haas, Melissa
Loper, Katie Macdougall,
Jonathan Apperson, Richard
Stroup, Jami Gross-Toalson,
Erin Perez, Girish Shirali,
Megan Jensen, Darcie Al-
Hassan, Sarah Lagergren,
Melissa Elliott, and CHAMP
Parents