Integrated pharmacy automation management reduced formula usage and improved exclusive breastfeeding rates in a *Baby Friendly* community hospital

David M. Dirig, Leonid Sokolskiy, Maria Itani, Tammy Turner, and Tracey Ybarra
Martin Luther King, Jr. Community Hospital, Los Angeles, CA; Cardinal Health, Houston, TX

Martin Luther King, Jr. Community Hospital

CardinalHealth
Essential to care™

Background

- MLKCH is a 131-bed safety-net community hospital that opened in 2015.
- Greenfield build in 2014; *Baby-Friendly Hospital Initiative* participation since 2016.
- Level One Perinatal Department averages 60 neonates monthly.
- Founding state (baby formula)
  - Materials Management stocked baby formula on the nursing unit as supply.
  - Multiple products. High par levels. No utilization tracking.
- Study period (baby formula)
  - Pharmacy took over formula dispensing in September, 2018.
  - Formula options streamlined to a single 2oz (60mL) product.
  - Formula dispensed only from profiled Pyxis MedStation per pediatrician order.
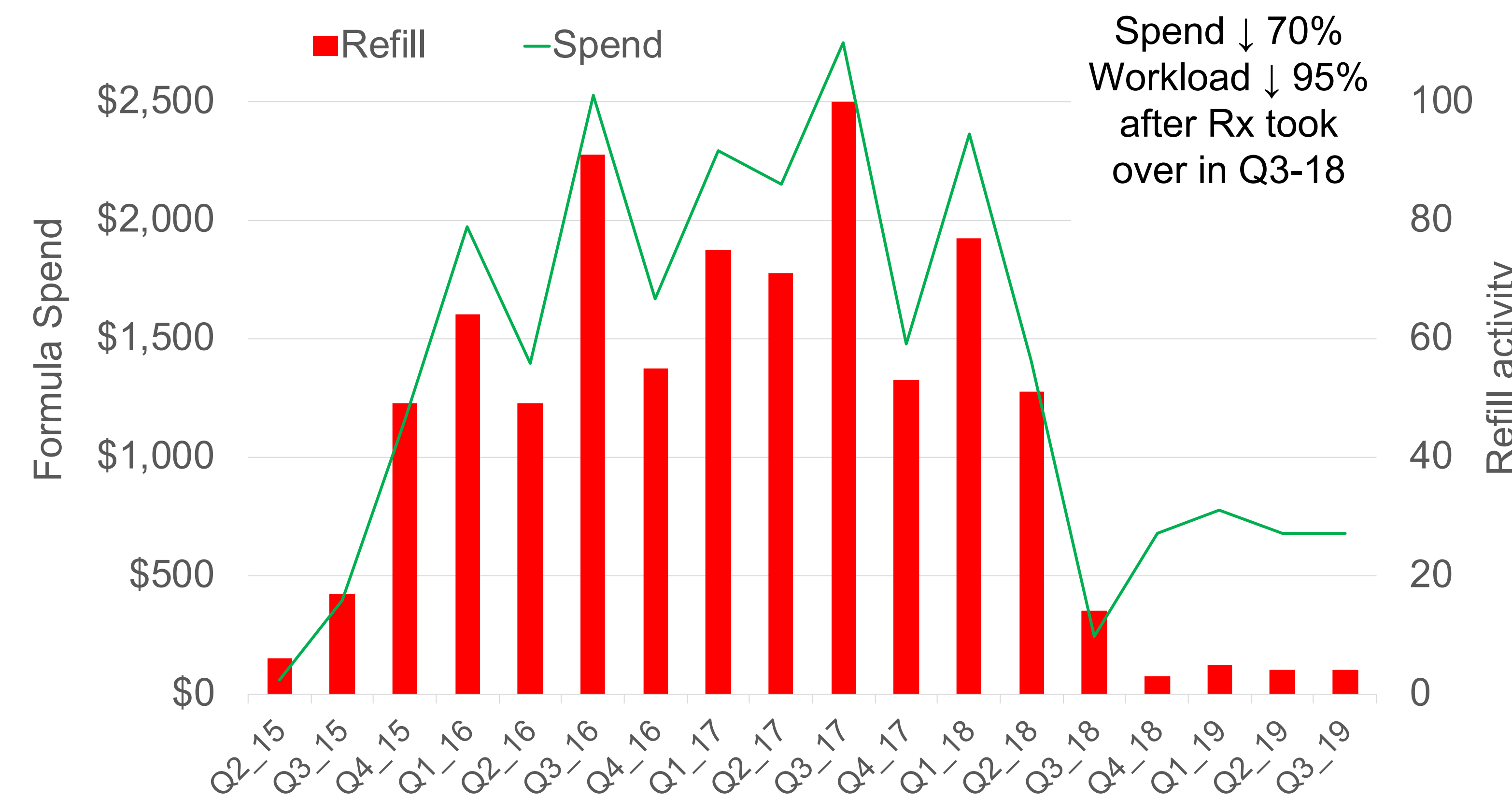
Objectives

- Leverage automation & electronic health record to manage formula logistics.
- Capitalize on Pyxis analytics to report formula dispensing patterns.
- Reduce formula use and improve exclusive breastfeeding rates.
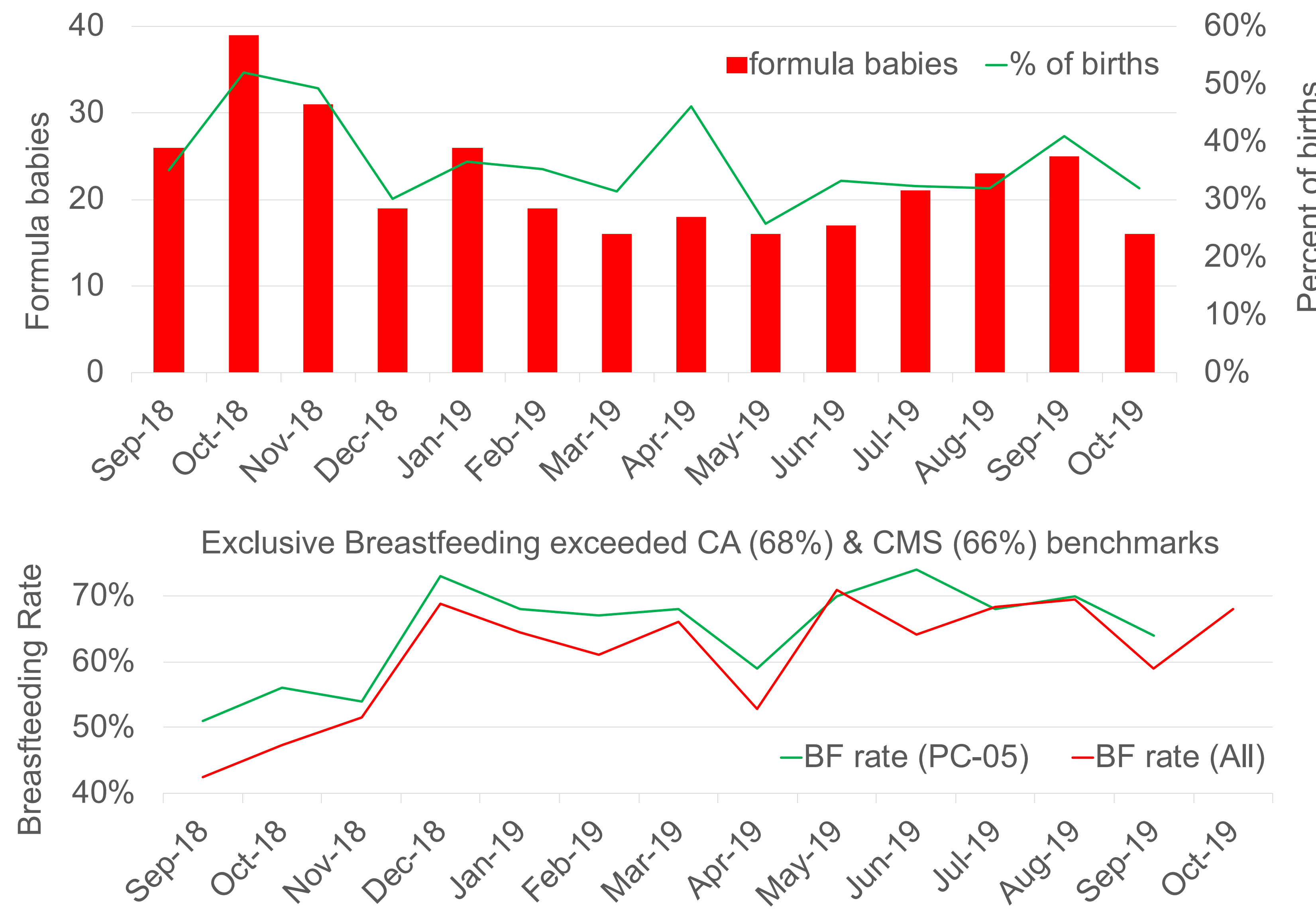
Methods

- MLKCH Medication Management Automation
  - BD Pyxis ES (MedStation) interfaced to Cerner Millennium (version 2015.23).
- Formula lockdown. *"It's easier to get fentanyl than formula……"*
  - Consensus reached to streamline to a single formula option.
  - Prescriber order required in electronic health record for formula to be given.
  - Formula order built into electronic order set (powerplan) to promote appropriate neonatal nutritional choices. Formula hidden as orderable (no one-off orders).
  - Formula set to auto-verify in PharmNet to prevent review delays in Pharmacy.
  - Dispensed from Pyxis MedStation as profiled item (no override allowed).
  - Clinical Data Category (CDC) designed in Pyxis to query user before removal.
    - *"Have you documented an alternative feeding method using mom's own breastmilk (e.g., spoon, cup, or syringe)?"*
  - Formula treated as a medication and included in Bar Code Med Administration.
- Formula Management Analytics Dashboard
  - Formula dispensing activity (Pyxis) and Cerner patient specifics reported monthly to inform leaders as to personnel ordering and dispensing patterns.
  - Monthly reports on usage, breastfeeding percentage, and frequency analysis.
  - Scatter plot analysis indicated high-use and low-use patterns per neonate.
  - User CDC responses analyzed for appropriate use and formula justification.
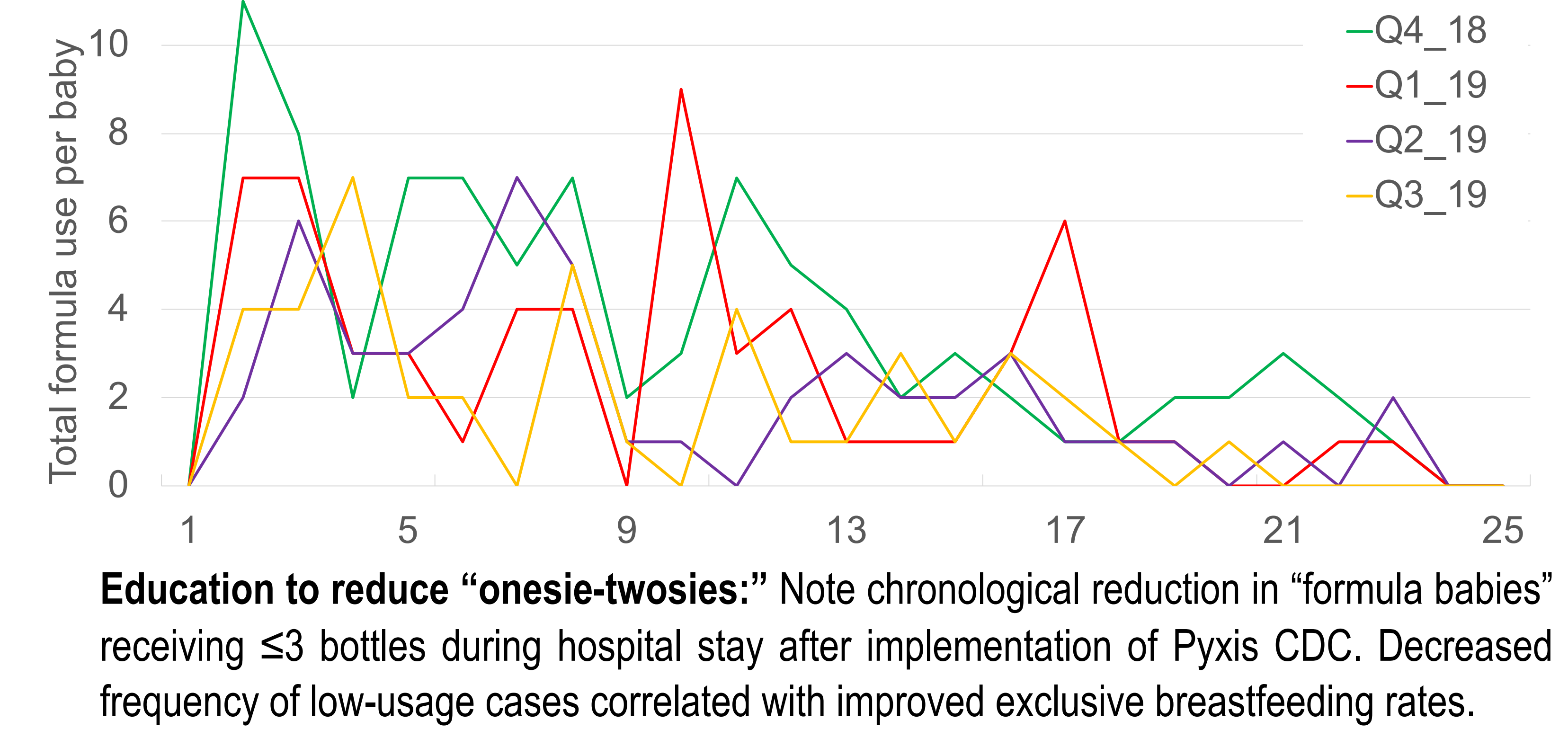
Results – Formula Logistics

Spend ↓ 70%
Workload ↓ 95%
after Rx took over in Q3-18

Results – Exclusive breastfeeding

Exclusive Breastfeeding exceeded CA (68%) & CMS (66%) benchmarks

Variably-defined Exclusive Breastfeeding : Breastfeeding (All) represents an internal MLKCH measure tracking all babies each month (no exclusions). Exclusive breastfeeding, as defined by CMS/TJC Core Measures PC-05, excludes transfers to higher-level care. *Baby-Friendly* allows exclusion of mothers inappropriate for breastfeeding (e.g., substance abuse or HIV+) or per mother's choice to formula feed when accompanied by risk/benefit education and support to identify and address breastfeeding barriers.

Results – Low-use formula consumption

Education to reduce "onesie-twosies:" Note chronological reduction in "formula babies" receiving ≤3 bottles during hospital stay after implementation of Pyxis CDC. Decreased frequency of low-usage cases correlated with improved exclusive breastfeeding rates.

Summary

- Results of applying automation analytics to formula management included:
  - Formula spend decreased by 70%.
  - Monthly formula usage decreased by 25%.
  - Formula refill and restock workload decreased by 95%.
  - Percent of neonates receiving formula decreased by 30%.
  - Low-usage consumption (≤3 bottles per neonate stay) decreased by 60%.
  - Bar Code Medication Administration scan rate for formula exceeded 95%.
  - Exclusive breastfeeding rates at MLKCH increased by 30%.
  - Exclusive breastfeeding rates exceeded CMS, TJC, & California standards.

Conclusion

MLKCH sought to improve neonatal care by collaborating with the *Baby Friendly Hospital Initiative* to promote breastfeeding and prioritize the use of breast milk over formula. By implementing required ordering of formula by prescribers only via EHR order set, pharmacy dispensing automation, and nursing/medical staff education, formula spend and usage decreased while exclusive breastfeeding rates increased without adversely affecting prescriber, pharmacy, or nursing staff workflow.

Disclosures