Northern Light Health

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Quality Improvement Project: Improving Rates of Vitamin D Supplementation in Breastfed Infants

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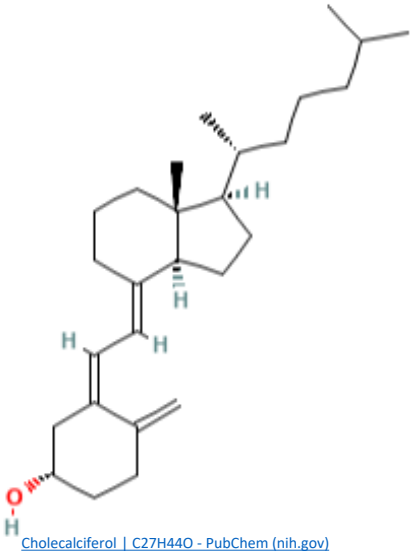
Background

Vitamin D supplementation in breastfed infants is a relatively simple intervention that can prevent deficiency that is linked to multiple poor health outcomes.

The AAFP and the Global Consensus Recommendation on Prevention and Management of Nutritional Rickets recommend 400 IU of cholecalciferol daily for infants up to 12 months of age.

- One cross sectional study estimates prevalence of vitamin D deficiency to be 12% and upwards of 40% of infants at suboptimal levels.
- Vitamin D deficiency has been linked to rickets, osteomalacia, seizures, tetany, cardiac arrhythmias, bone pain, muscle weakness, dental concerns, developmental delays, and decreased immune function.
- If infant intake of formula is < 1 liter daily, they are not meeting the recommended amount of vitamin D



Cholecalciferol | C27H44O - PubChem (nih.gov)

Objectives and Methods

The aim of this project is to increase the rate of vitamin D supplementation in breastfed infants in our clinic population as well as determining possible successful strategies for increasing appropriate supplementation for infants discharged from the EMMC newborn nursery going forward.

Do Babies Really Need Vitamin D Supplements? – Cleveland Clinic

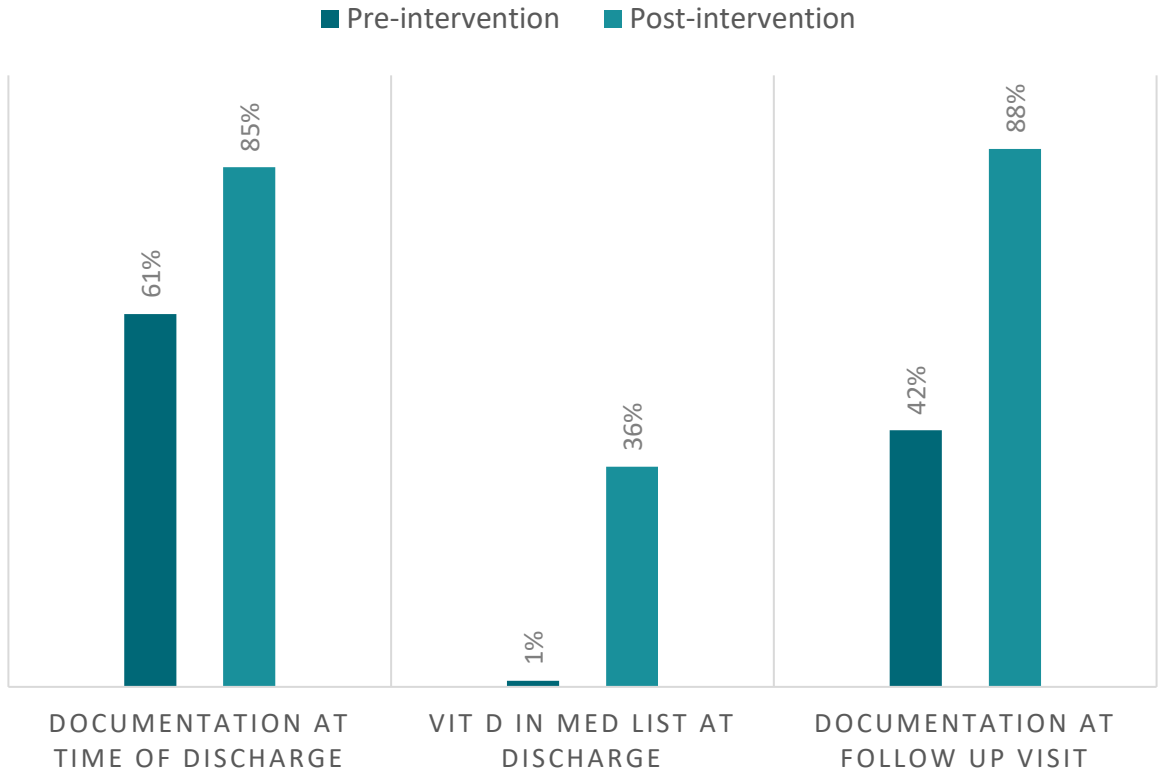
- Population: Infants born at EMMC who followed up with Family Practice Residency for at least 1 visit following discharge
  - Baseline population born between 1/1-2/28/21
  - Intervention population born between 10/1-12/31/21
- Intervention: provider education, aim to have vit D on discharge med list for all breastfed infants
- Primary outcome: percentage of infants with appropriate vit D supplementation documented during monitoring period
- Data was obtained exclusively through chart reviews pre and post intervention

Results

There was a 20-40% increase in documented supplementation of Vit D in breastfed infants after intervention.

- Baseline sample: 137 infants
- Follow up sample: 33 infants
- When Vit D was included in medication list at time of discharge, 88% of subsequent visits had documentation of Vit D supplementation compared to 58% of visits for those that were not discharged with Vit D on medication list

- Study published in AAFP analyzing data from Infant Feeding Practices Study 2005-07, only 5-13% of exclusively breastfed infants in US met recommended supplementation



Discussion

Increasing both provider awareness and documentation practices at time of discharge does increase the documentation of appropriate Vit D counseling and supplementation

- Further investigation should be done to determine if increased documentation results in increased supplementation
  - One example: vitamin D discussed at every visit and well documented but also documented parents were not supplementing
- Project did not capture counseling/recommendations that were not documented
- Unclear how often awareness should be completed to sustain positive change
- Discharge process could eliminate human oversight and simplify process for providers by automatically including Vitamin D on med list for breastfed babies or making it a discharge quality metric
- Lack of insurance covered supplement is also a likely barrier—would it be feasible to provide a bottle at time of discharge?

Conclusion

We can do better to increase appropriate vitamin D supplementation in infants

- Ensuring there is awareness of recommendations is a first step
- Increasing parental awareness of recommendation and reasoning behind recommendations should be further investigated
- Using the EMR to make things more efficient and improve outcomes would be ideal

References

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