# Welcome!

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# Ground Rules

- Please join by video
- Please mute unless speaking
- Please don’t multitask
- Please be patient
- If you want to speak, please click on participant section and raise your hand – someone will call on you

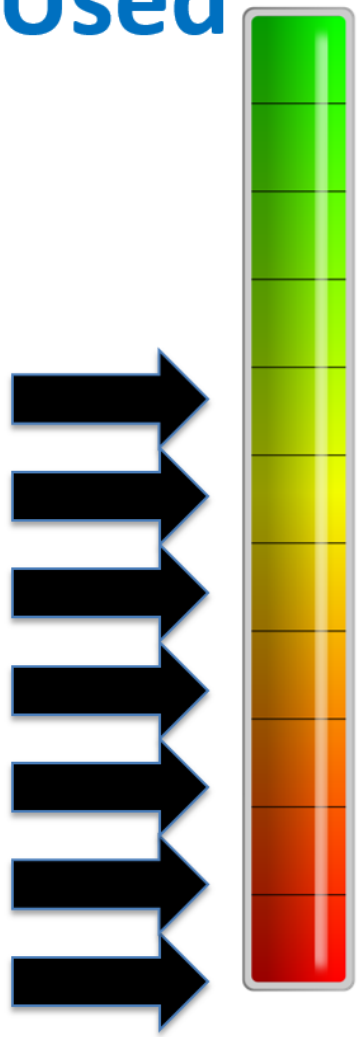
# ROI in Health Professions Education

Alan M. Leichtner, MD, MS-HPEd
Director of Department of Education

# What are ways to achieve stakeholder buy-in for educational projects?

# Actual Arguments We Used

1. Intrinsic value
2. Cost of replacing the service
3. Faculty and staff recruitment
4. Redundant costs
5. Public shaming
6. Safe and high value care
7. Money from on-line CE



# Kirkpatrick's Model of Evaluation

# The Business Model – 5th Level

# Why the Disconnect?

Health Professions Education interventions lack sustainable business models

Jeffrey Barsuk at AMEE 2017

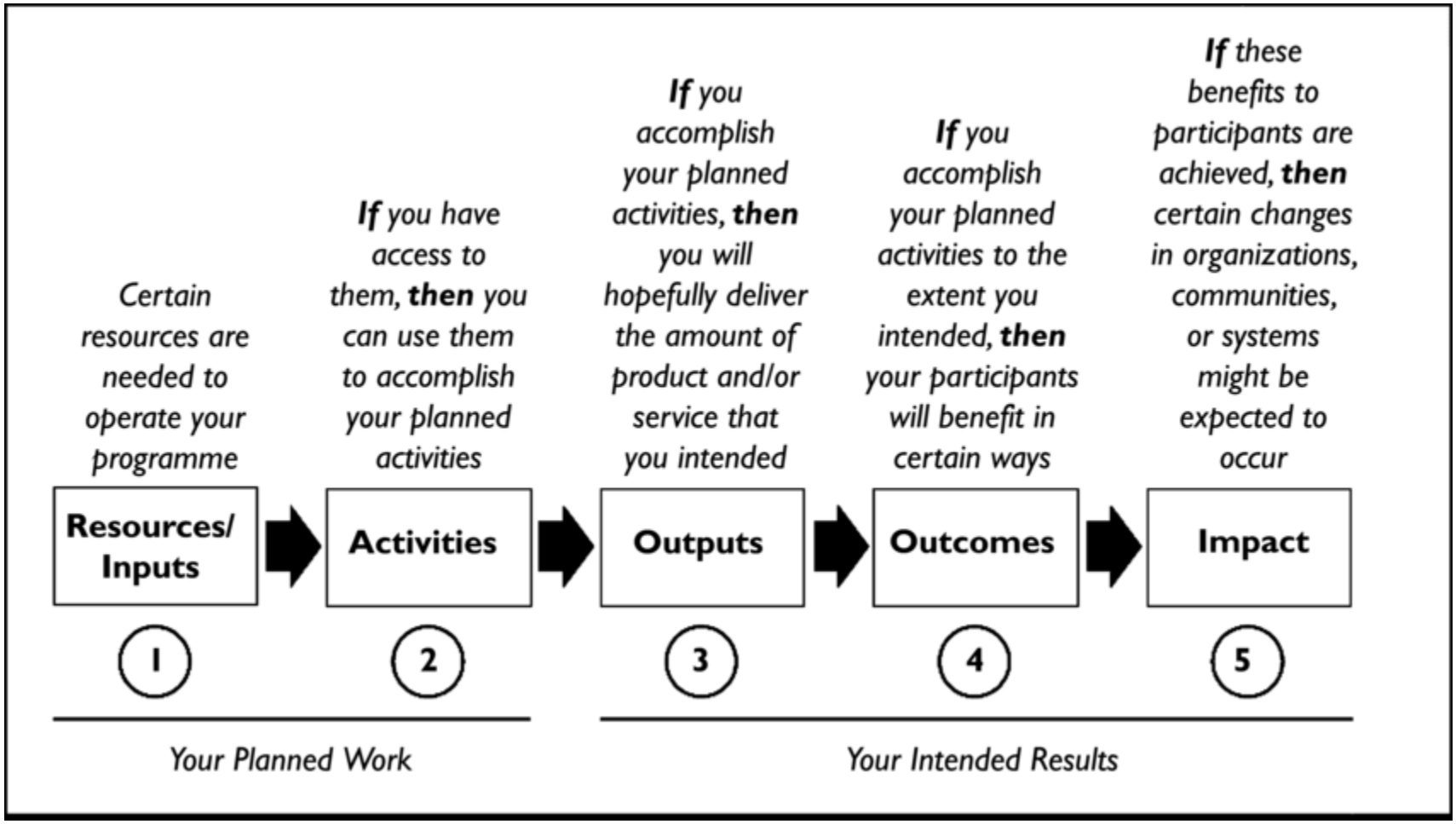
- Cost center only
- Under-resourced
- Silo mentality
- Educators lack business mindset and skills

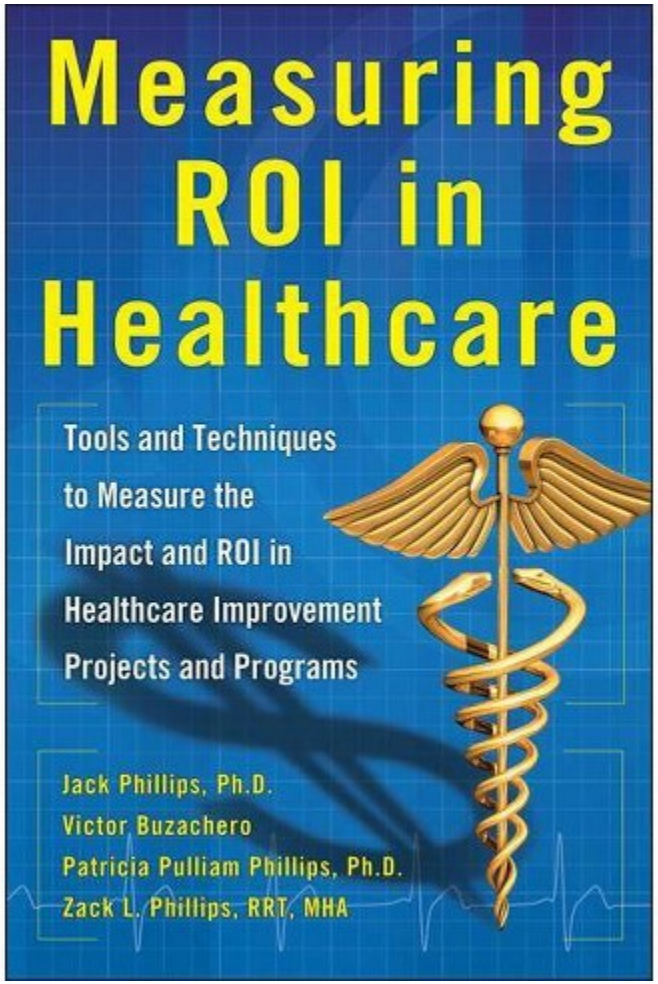
# "Show Me the Money!"

$$\text{ROI (\%)} = \frac{\text{Net Project Benefits (Benefits – Costs)}}{\text{Costs}} \times 100$$

If benefits were equal to costs – there would be 0% ROI
If benefits were twice the costs –there would be a 100% ROI

# Kellogg Foundation Logic Model




Measuring ROI in Healthcare
Tools and Techniques to Measure the Impact and ROI in Healthcare Improvement Projects and Programs
Jack Phillips, Ph.D.
Victor Buzachero
Patricia Pulliam Phillips, Ph.D.
Zack L. Phillips, RRT, MHA

# ROI Methodology 1

| | Items | Explanation |
|---|---|---|
| **Needs** | Payoff | Cost of problem and likelihood of the project succeeding? |
| | Business | Is this a problem for your institution? What would be improved: productivity, quality, efficiency, time, cost? |
| | Performance | What needs to be done to fix the problem in your institution? |
| | Learning | What are the learning needs to get the project done (skills, knowledge, dissemination of policies)? |
| | Preference | Will participants be engaged? |
| **Inputs** | Access | What people? Where? How much time? |
| | Costs | Preparation and needs assessment, equipment/supplies, administrator, teacher, and learner time, space, other |

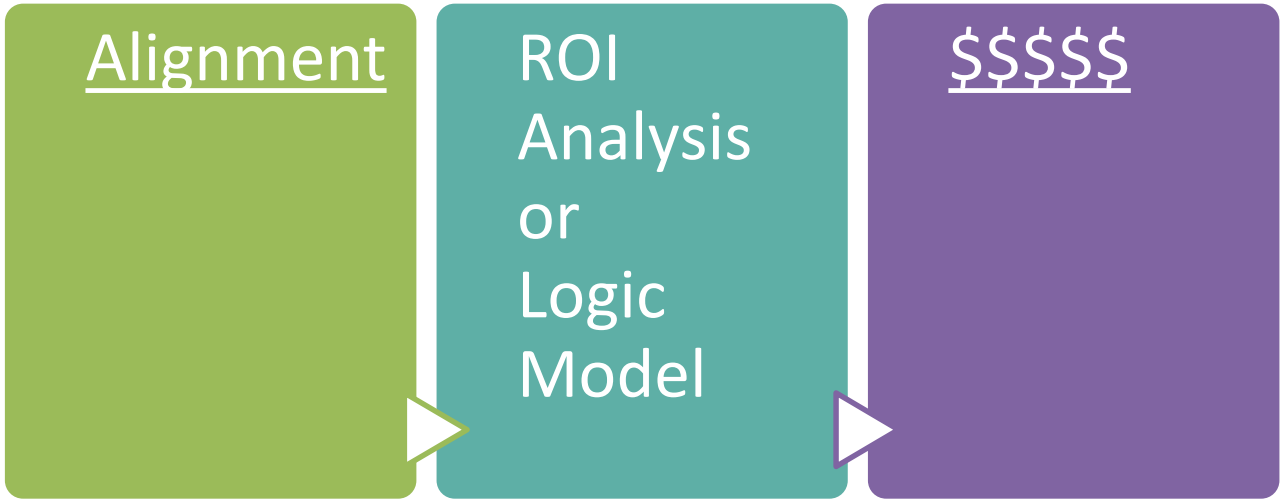
Buzachero VV, Phillips J, Phillips PP, Phillips ZL. Measuring ROI in Healthcare. 2013. New York: McGraw Hill.

# ROI Methodology 2

| | Items | Explanation |
|---|---|---|
| **Outputs** | Reaction | Participants' or stakeholders' reaction to project |
| | Learning | Measurement that learning has occurred |
| | Application | Evidence that project was implemented |
| | Impact | Patient outcomes, decrease in adverse events, decrease in costs |
| | ROI | $$$$ |

Buzacheri VV, Phillips J, Phillips PP, Phillips ZL. Measuring ROI in Healthcare. 2013. New York: McGraw Hill.

# How is this different from how we normally think?



# As you consider

## Examples

- Simulation
- Professional Development of Educators

## Themes

- Alignment
- Business Model
- Money

# The Obvious Example: Simulation

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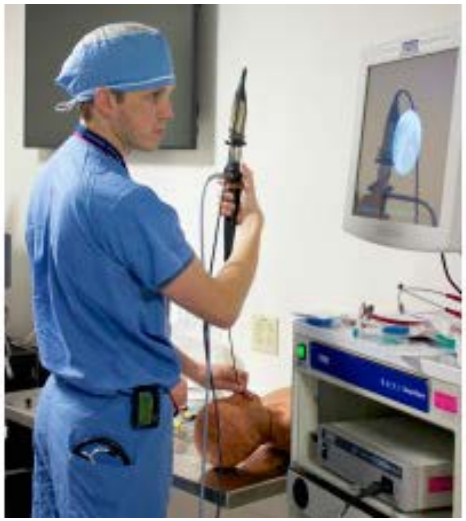
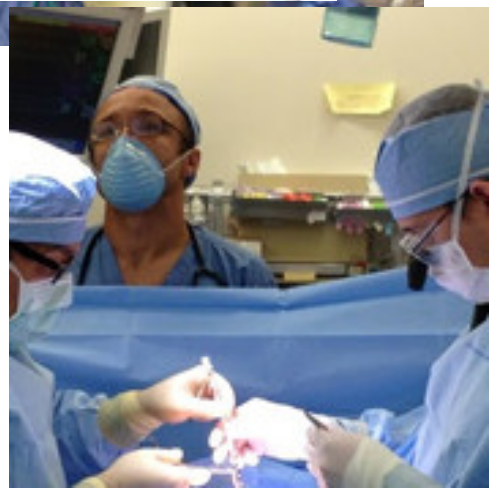
# Range of Uses of Simulation







http://simpeds.org/program-overview/

# CLABSI

## Central Line Associated Blood Stream Infection

Courtesy of V. Brazil

### Proposed Project

1. <u>OR placement</u>
- Surgical standardization and competency evaluation
- OR Team Training In Simulation Center

2. <u>Maintenance in hospital</u>
- Protocols for dressing changes

3. <u>Home</u>
- Training of caretakers and home nurses in Simulation Center

# CLABSI

| | | |
|---|---|---|
| Needs | Payoff | High rate of CLABSI associated with lower value care; high likelihood of succeeding |
| | Business | CLABSI rate; Cost per admission; Readmission rates; External ratings – U.S. News |
| | Performance | Variability in techniques used pre-program; Lack of defined procedures; Accessing lines not limited to trained clinicians |
| | Learning | Ability to use simulation center with task trainers and team training to facilitate learning |
| | Preference | Clinicians understand problem and are committed to training |

# CLABSI

| | | |
|---|---|---|
| Inputs | Access | Must include surgeons, OR teams, inpatient nursing teams, home care – In Simulation Center |
| | Costs | Needs assessment – already clear |
| | | Will need task trainers and central lines and dressings |
| | | Time of simulation staff, designated trainers (clinical champions), and learners |
| | | Overhead of Simulation Center – cost per hour |

# CLABSI

| Outputs | Reaction | Surveys, focus groups and interview of participants |
|---|---|---|
| | Learning | Evidence that staff and home care providers have participated and completed training |
| | Application | Evidence that protocols are now standard of care |
| | Impact | Reduction in rate of CLABSI; Decreased length of stay; Fewer readmissions |
| | ROI | Cost saving on shorter admissions and prevention of readmissions – Approximate savings $50,000 per occurrence |

# A Community of IPE Practice

# BCH Academy for Teaching and Educational Innovation and Scholarship

## MISSION

- Improve Clinical Teaching
- Foster Scholarship in Education
- Support career development and recognition of educators

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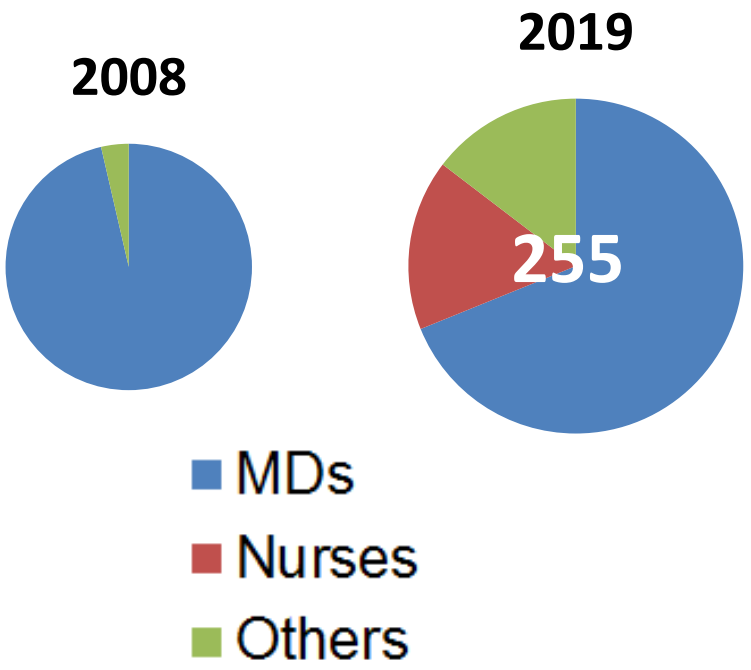
# BCH Academy for Teaching and Educational Innovation and Scholarship

**BCH Academy Activities**

- Seminars monthly
- Retreats twice monthly
- Peer Observation and Coaching of Teaching
- Career Development Advising
- Research and Scholarship Resources
- Award Program



# Recent Scholar Projects Funded by Pilot Grants

| Funding Period | Title of Grant |
|---|---|
| 2017-2019 | Development and pilot implementation of a virtual home visit curriculum for pediatric residents in the care of children with medical complexity |
| 2018-2019 | A Spaced Education Curriculum addressing Insulin Pumps and Continuous Glucose Monitors for Pediatric Endocrinology Fellows |
| 2018-2019 | Developing and Evaluating a Family-Provider Safety Education Intervention to Improve Hospital Safety |
| 2018-2019 | Innovation in Port Access Education for Pediatric Emergency Nurses |
| 2020-2021 | Development and Implementation of a Colonoscopy Training Feedback System using myTIPreport |
| 2020-2021 | Interprofessional Collaboration to Care for Patients with Autism Spectrum Disorder |

# BCH Academy

| Needs | Payoff | Not clear |
|---|---|---|
| | Business | Learning environment is a problem for institution;<br>Poor recruitment and retention of future staff |
| | Performance | Foster professional development of teachers |
| | Learning | Programs focused on clinical teachers |
| | Preference | A small group will certainly be engaged; Most will not |

# BCH Academy

| | | |
|---|---|---|
| Inputs | Access | Target those with a defined clinical education role; Time limited by clinical responsibilities; On-site at hospital |
| | Costs | Supplies, catering, software licenses, website costs, honoraria for outside speakers |
| | | Salary for administrator, director of professional development, director of educational technology; volunteer leaders; clinician educators |
| | | Conference room space, office space for staff |

# BCH Academy

| | | |
|---|---|---|
| Outputs | Reaction | Periodic surveys and solicitation of comments in annual reports |
| | Learning | Attendance at events and interest in membership |
| | Application | Improvement in teaching as noted through peer observation; learner ratings of teachers |
| | Impact | Improvement in student/trainee assessment of learning environment; recruitment metrics; improved staff engagement and well-being; increase in scholarship and promotion or advancement of educators |
| | ROI | Less turnover and less need to recruit externally |

# Exercise

Apply the ROI analysis to an education project – **prompted by the COVID-19 pandemic, you want to help trainees and providers improve their telehealth skills by establishing a scenario with actors in the simulation center** – participants will have an opportunity to actually practice perfecting telehealth skills. You need to ask Kevin Churchwell for the funds to create and offer the activity. You use the ROI algorithm to plan your argument and demonstrate ROI.

# Steps

- You will be assigned to a virtual break-out group for 10 minutes to create a plan
- After introducing yourself, please *quickly* assign one person to be the time keeper, and one person to take notes in order to present to the larger group. The note taker can either download the handout during the breakout or use the one attached to this email.
- You will then be returned to the large group to share your work

# Some Takeaways

- Think about institutional priorities and stakeholders – aim for alignment
- Try to create a business model – this won't work for many projects
- Don't "look down your nose" at individuals focused on money

Not all worthwhile education projects will net a monetary ROI, but it certainly helps

A. Leichtner, MD

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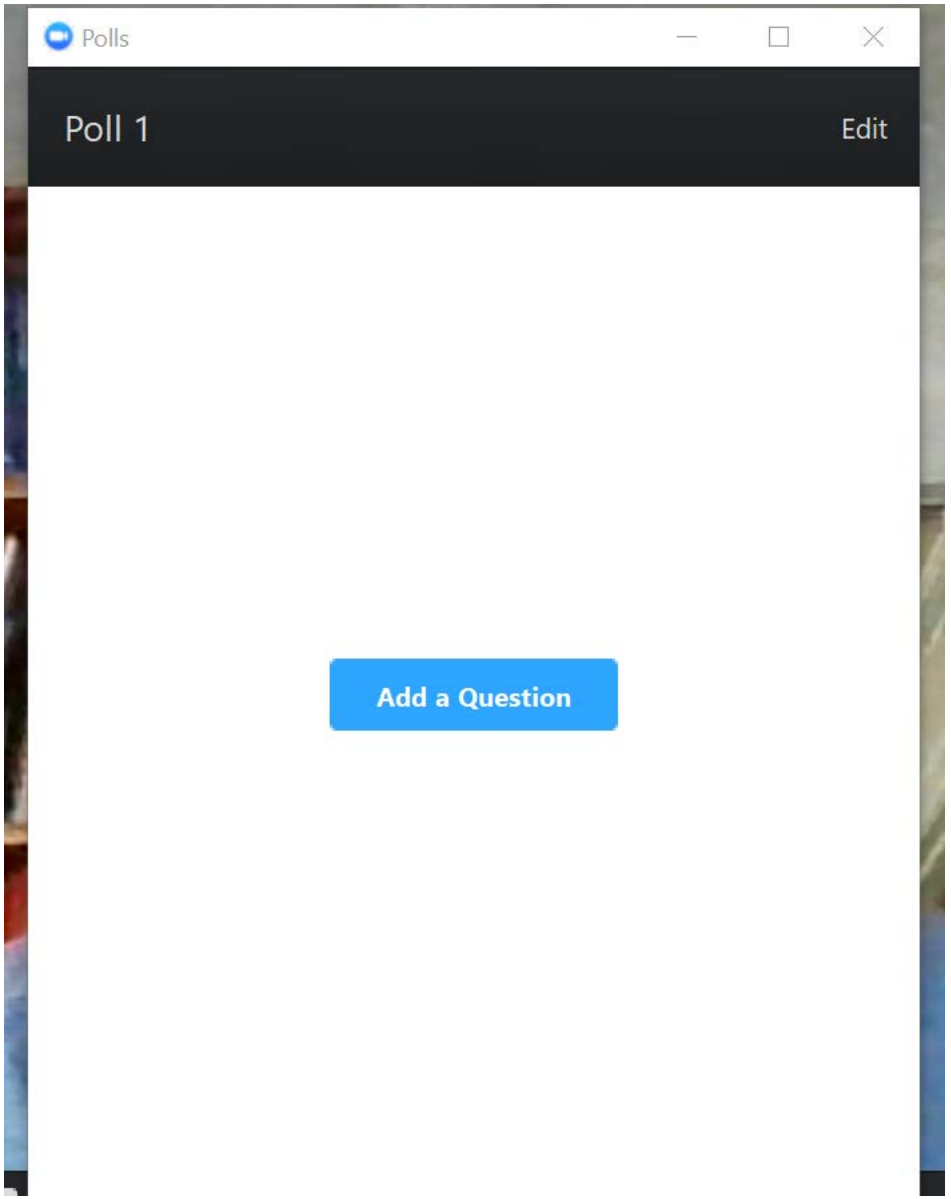
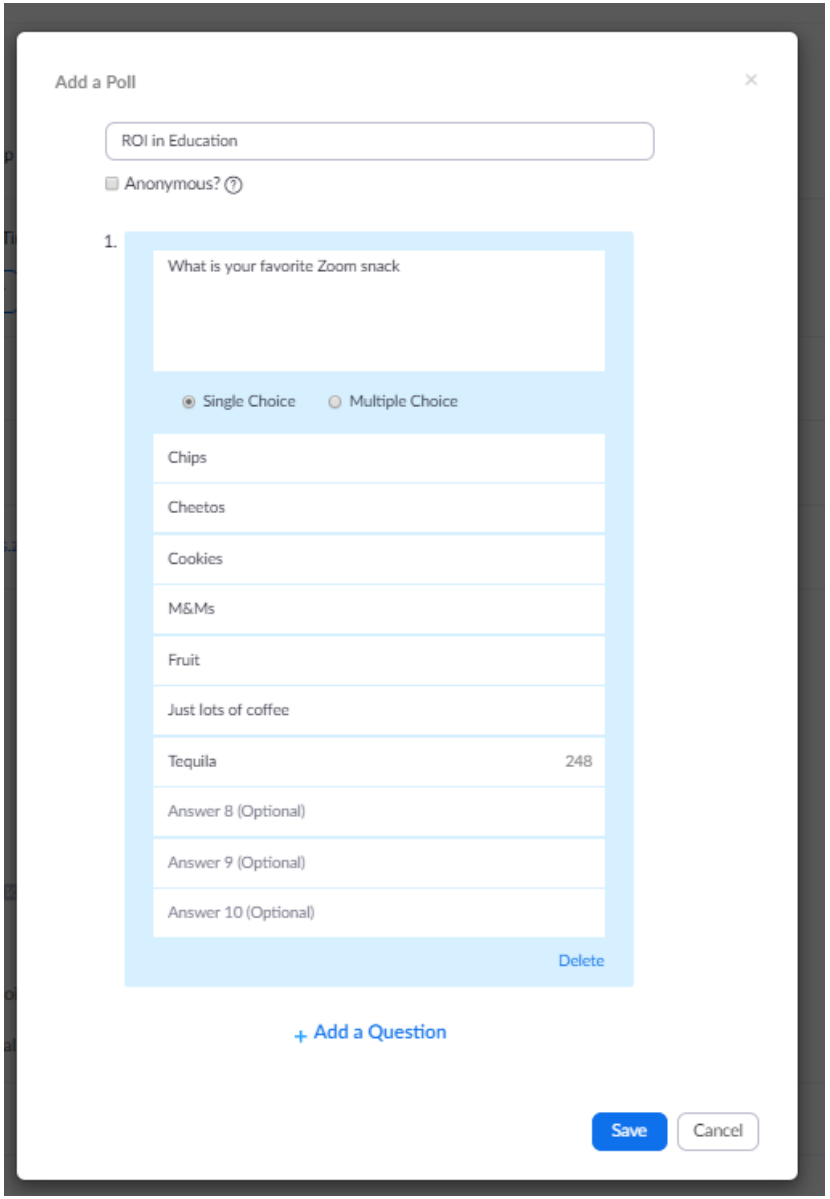
# Your homework:
# Try the ROI exercise with one of your own projects

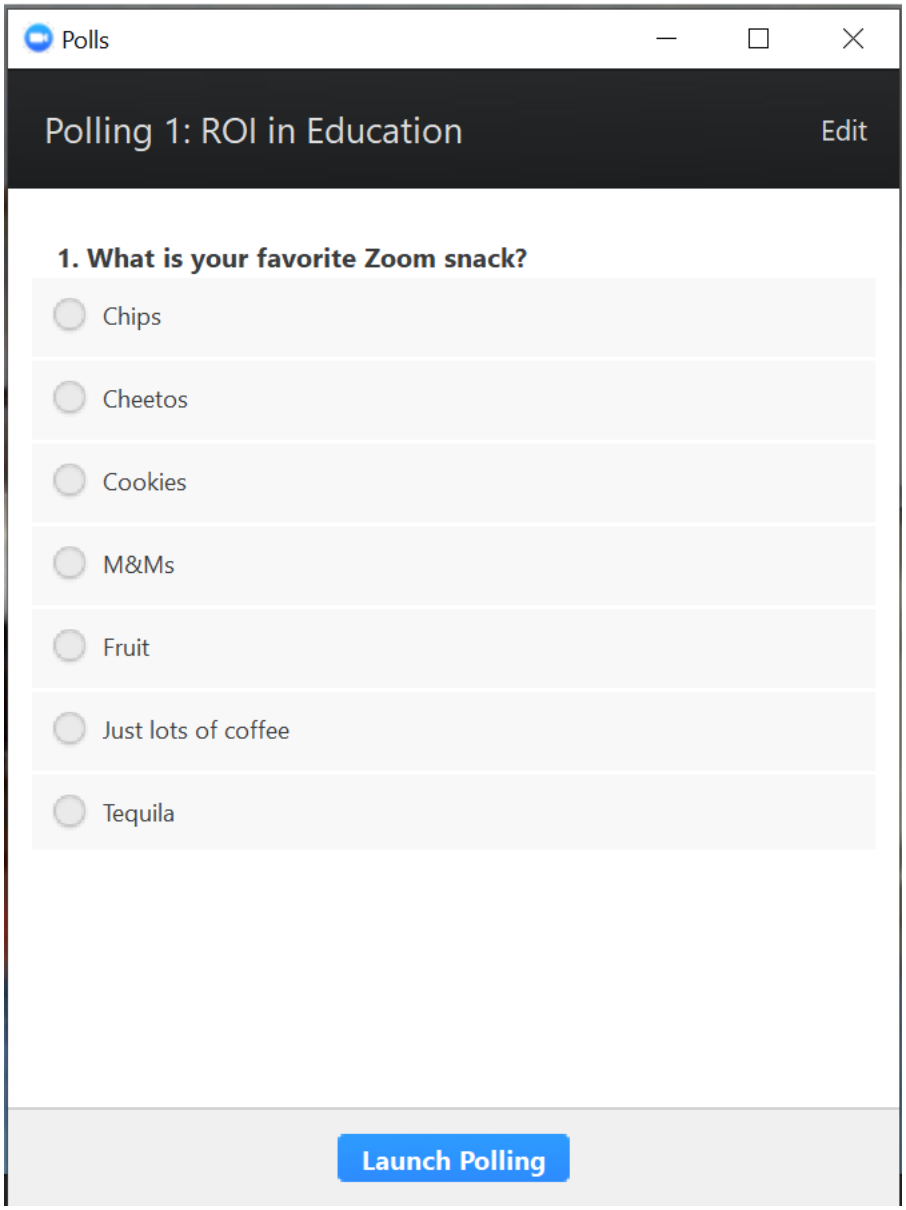
# Pulling Back the Curtain

- Advanced Settings
- Polling
- Drawing and Whiteboard
- Breakout rooms

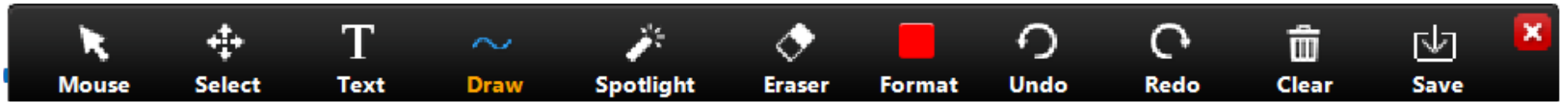
# Setting up a Poll



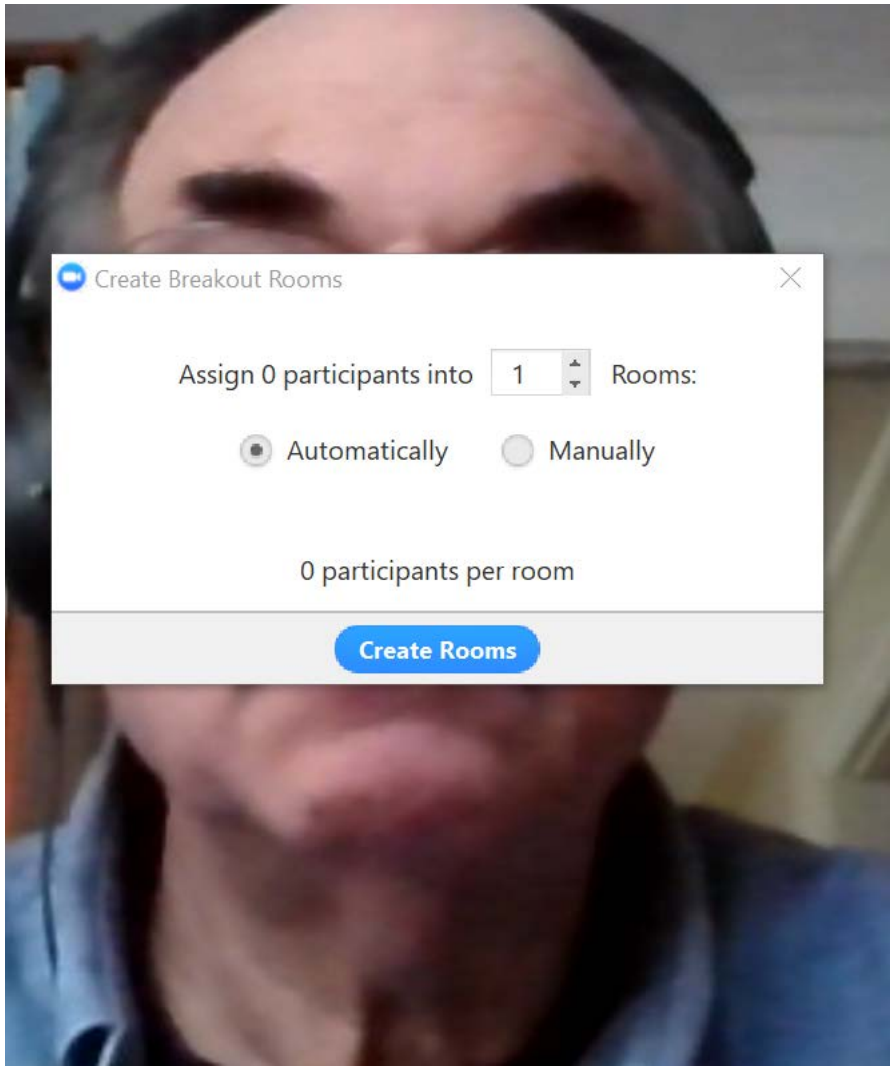

Add a Poll
ROI in Education
Anonymous?
1.
What is your favorite Zoom snack
Single Choice
Multiple Choice
Chips
Cheetos
Cookies
M&Ms
Fruit
Just lots of coffee
Tequila
248
Answer 8 (Optional)
Answer 9 (Optional)
Answer 10 (Optional)
Delete
+ Add a Question
Save
Cancel


Polls
Polling 1: ROI in Education
Edit
1. What is your favorite Zoom snack?
Chips
Cheetos
Cookies
M&Ms
Fruit
Just lots of coffee
Tequila
Launch Polling

# Drawing and White Board



# Breakout Rooms




zoom

# Appendix
# Additional ROI Example

# Ambulatory Care: Less is More

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# The Problem

Inappropriate referrals to pediatric specialists are **Bad**:

**Bad** for patients

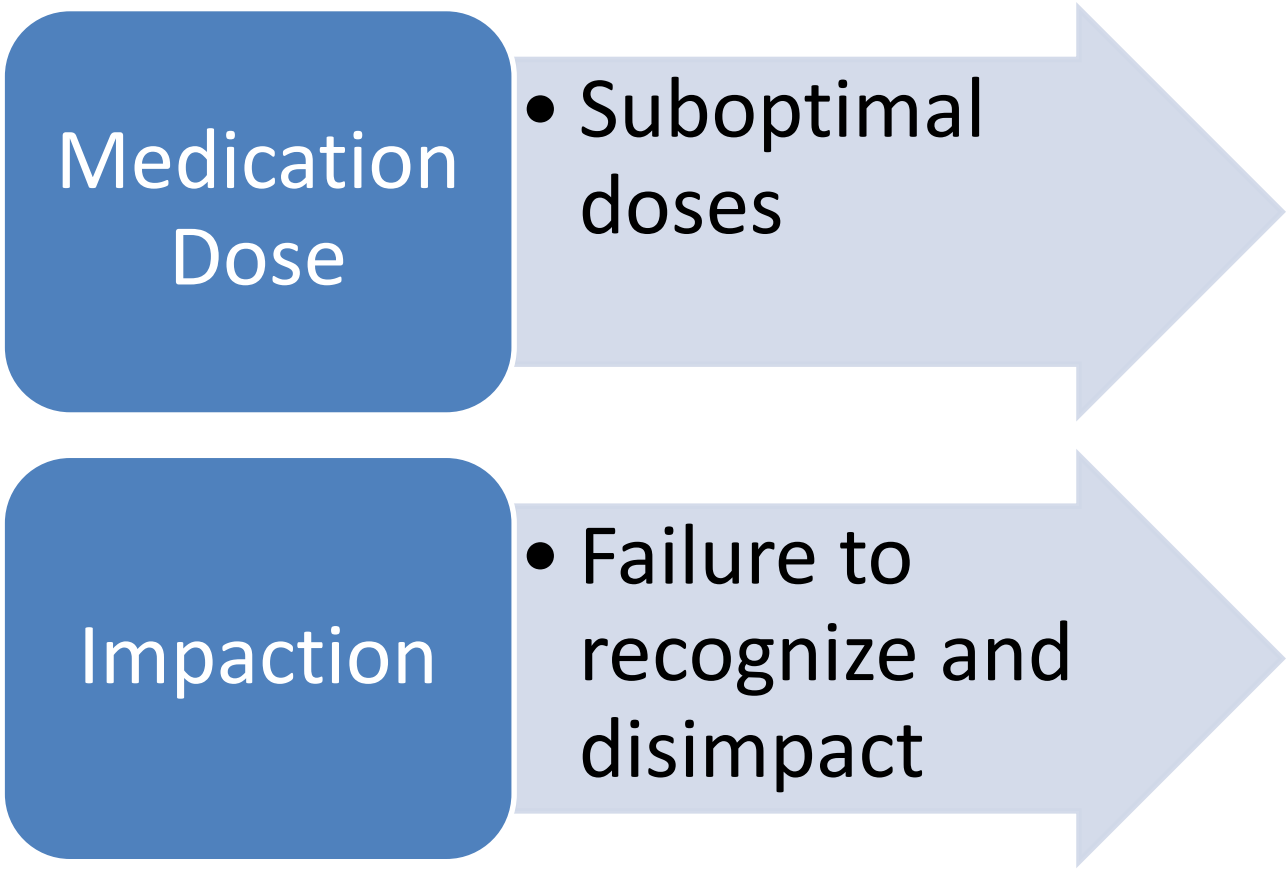
**Bad** for referring physicians

Even **Bad** for specialists

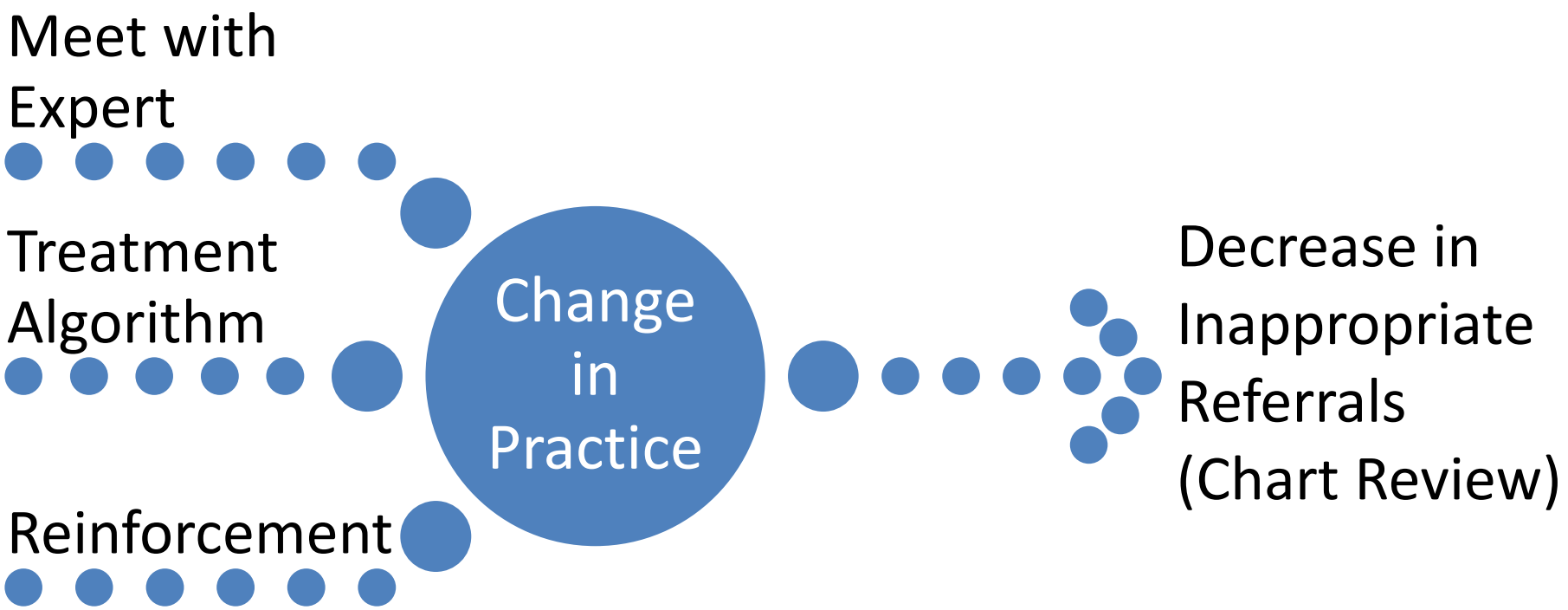
# Constipation in Children

- Very common
- One of top referring diagnoses to pediatric gastroenterologists
- Leading cause of abdominal pain
- Almost always functional – no serious underlying cause

# Problems in Management



# Referring Pediatricians and NPs Engaged in - “Shared Care”



# The Constipation Challenge

Select an answer ➔ Immediate feedback ➔Reinforced

**Question from "Constipation Challenge"** 200

A 7 month-old, 8-kg, previously healthy boy visits you due to concerns that he is crying and straining to pass stools which are very firm over the past 3 weeks. He continues to stool daily. He drinks cow's milk based formula, eats rice cereal and an array of pureed solid foods. His growth is on track and his abdominal exam is normal. A rectal exam reveals firm stool and a small anal fissure.

Which of the following the most appropriate medical treatment of constipation for this infant?

**Choices**

- ○ Magnesium hydroxide 1 tablespoon daily
- ○ Prune juice 8 oz. per day, mixed in formula
- ○ Glycerin suppository every other day until symptoms resolve
- ◉ Polyethylene glycol (PEG) 3350 1 teaspoon daily

# The Constipation Challenge

Select an answer ➔ Immediate feedback ➔ Reinforced

**Choices**

| You | Key | Choices | Responses |
|---|---|---|---|
| | ✗ | Magnesium hydroxide 1 tablespoon daily | 1% |
| | ✗ | Prune juice 8 oz. per day, mixed in formula | 46% |
| | ✗ | Glycerin suppository every other day until symptoms resolve | 4% |
| ▶ | ✓ | Polyethylene glycol (PEG) 3350 1 teaspoon daily | 47% |
| | | | 128 responses |

**Results**

**Congratulations, Your answer is correct!**

This question will be resent on 11/30/13

**Your total score: 280**

You just scored 80 points for answering correctly

On track for bonus points. Answer correctly on your next attempt for a bonus of 100 points

**Explanation**

**Take Home:** PEG 3350 (e.g. Purelax™, Miralax™) is safe in infants as young as 6 months.

**Explanation of correct answer:**
1 teaspoon contains roughly 4g of PEG 3350, which is 0.5g/kg in this child, which is in the lower part of the suggested dose range for miralax, 0.4-1g/kg/day.

**Explanation of incorrect answers:**
Prune juice is a traditional and safe treatment option for infants, however, 8 oz. of juice is more than the recommended 2-4 oz. and exceeds the maximum juice intake recommended for any child (6 oz./day). Glycerin suppositories are safe and can also be used intermittently, but regular and especially prolonged use of rectal stimulation is not recommended. If a patient stools only with rectal stimulation, further careful evaluation is warranted. Magnesium salts are not recommended in infants due to risk of hypermagnesemia.

Video Links: How many teaspoons of PEG 3350 in a capful?

References: Loening-Baucke V, Krishna R, Pashankar DS. Polyethylene glycol 3350 without electrolytes for the treatment of functional constipation in infants and toddlers. J Pediatr Gastroenterol Nutr. 2004 Nov;39(5):536-9. PMID: 15572895

Michail S, Gendy E, Preud'Homme D, Mezoff A. Polyethylene glycol for constipation in children younger than eighteen months old. J Pediatr Gastroenterol Nutr. 2004 Aug;39(2):197-9.

# Outcomes

| | Before Shared Care | After Shared Care |
|---|---|---|
| Duration of management before referral (months) | 6.9 | 10.5 |
| % of patients with fecal impaction noted at time of referral | 49 | 31 |
| % of patients referred for constipation | 0.36 | 0.22 |

Mallon D, Vernacchio L, Trudell E, Antonelli R, Nurko S, Leichtner A, Lightdale J. Shared care: A quality improvement initiative to optimize primary care management of constipation. Pediatrics 2015; 135:e1300-7.

# Shared Care

| | | |
|---|---|---|
| Needs | Payoff | High rate of inappropriate referrals limiting access of children with more complex issues to specialists with long-waiting lists |
| | Business | Improved access for more complex patients; More complex referrals generating more diagnostic testing and high technology treatments |
| | Performance | Educate referring providers and provide specialist advice before referral |
| | Learning | Face-to-face and on-line learning to enhance first-line care of children with constipation |
| | Preference | Both referring providers and specialists engaged |

# Shared Care

| | | |
|---|---|---|
| Inputs | Access | Specialists to provide education for primary providers; at referring practices or on-line; 6 hours of learner time; educator time |
| | Costs | Need baseline measurements through chart review to assess primary management |
| | | On-line platform, printing supplies |
| | | Time of specialists, referring providers, education staff, research assistant |
| | | Space in practices or nearby venue |

# Shared Care

| Outputs | Reaction | Survey of participants |
|---|---|---|
| | Learning | Evidence that practices have participated and completed training |
| | Application | Evidence that protocols are now standard of care in practices; Chart review to demonstrate change in referral pattern |
| | Impact | Improved access to gastroenterology program for new referrals; more lab, imaging and consultations per gastroenterology patient; higher quality care for patients with constipation |
| | ROI | More revenue from gastroenterology patients |