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Pediatric dermatology for the Upper Midwest ECHO Program Evaluation: Impact of a Longitudinal Multistate ECHO

McKenzie Burian³, DeAngela Ivory¹, Vanessa Trammell¹, Brailyn Weber³, Sarah Asch^{2, 6}

In reality, this was a much more collaborative effort:

Burian M³, Frazier C^{4,6}, Huynh T⁷, Ivory D¹, Miao C⁵, Trammell V¹, Weber B³, Asch S^{2, 6}.

University of Mississippi Medical Center, Center of Telehealth Excellence, Jackson, Mississippi¹, Hometown Pediatric Dermatology, PLLC, Minnesota², University of North Dakota School of Medicine, Grand Forks, North Dakota³, College of Medicine, University of Arkansas for Medical Sciences⁴, Department of Geography, Sustainability, Community, and Urban Studies, University of Connecticut⁵, Pediatric Dermatology Research Alliance⁶, University of Mississippi Medical Center, Department of Dermatology, Jackson, Mississippi⁷



Discuss the assessment (challenges and wins) of the impact of a:

- longitudinal (starting March 2024),
- open attendance (non-cohort based)
- subspecialty ECHO
- reaches across multiple states
- reaches multiple healthcare touchpoints - including schools, clinics, and hospitals



This collaboration began at a SEARCH virtual poster session...

Mission: To deliver high quality, timely pediatric subspecialty care to rural kids and adolescents

Sarah Asch MS, MD
Pediatric Dermatologist



Saurabh Chandra, MD, PhD, MBA

Project Director
Telehealth Center of Excellence,
University of Mississippi Medical
Center (UMMC)





Project ECHO: Moves Knowledge, not Patients

Problem

8 month wait for
Hep C clinic



Sanjeev Arora M.D.,
Hepatologist

Intervention

ECHO:
Extension for Community
Healthcare Outcomes



Hep C team at hub
+ willing PCCs collaborated.
10 min lecture

PCCs brought cases of current patients
Video Technology (2003 - WOW!)

Measured the response

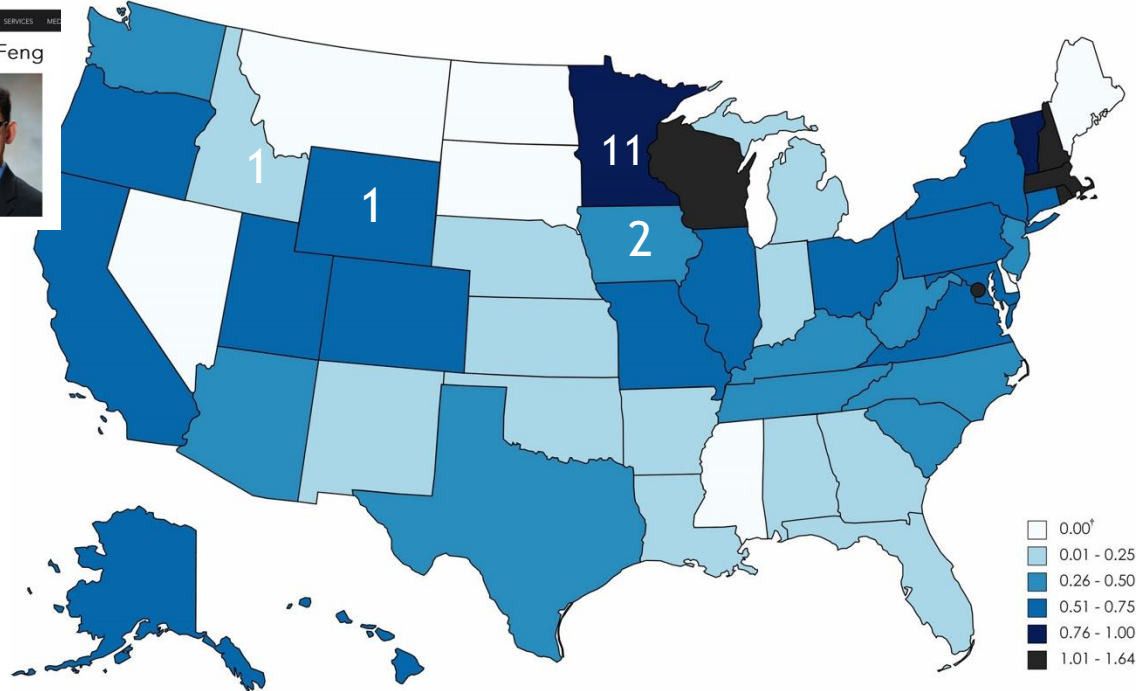
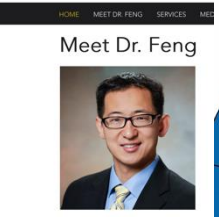


Reduced wait times, More patients treated

Outcomes of PCCs EQUAL to specialists
(with this subspecialty support)



Why an ECHO specifically for Pediatric Dermatology? A Problem identified.



Approximately 98% of pediatric dermatologists who currently practice in the U.S. work in a metropolitan area of the country.

The numbers of pediatric dermatologists in a given state do not reflect the complexities of distance, insurance, referral patterns

Pediatric Dermatology, Volume: 38, Issue: 6, Pages: 1523-1528, First published: 14 October 2021, DOI: (10.1111/pde.14824)
Shivani Sinha MS, Gloria Lin MD, MS, Micaella Zubkov BS, Rong Wu PhD, Hao Feng MD, MHS

Geographic distribution and characteristics of the pediatric dermatology workforce in the United States





Lack of dermatology training in pediatrics residency

> [Pediatr Dermatol](#). 2015 Nov-Dec;32(6):819-24. doi: 10.1111/pde.12662. Epub 2015 Sep 3.

Deficiencies in Dermatologic Training in Pediatric Residency: Perspective of Pediatric Residency Program Directors

Kate Khorsand ¹, Heather A Brandling-Bennett ^{1 2}

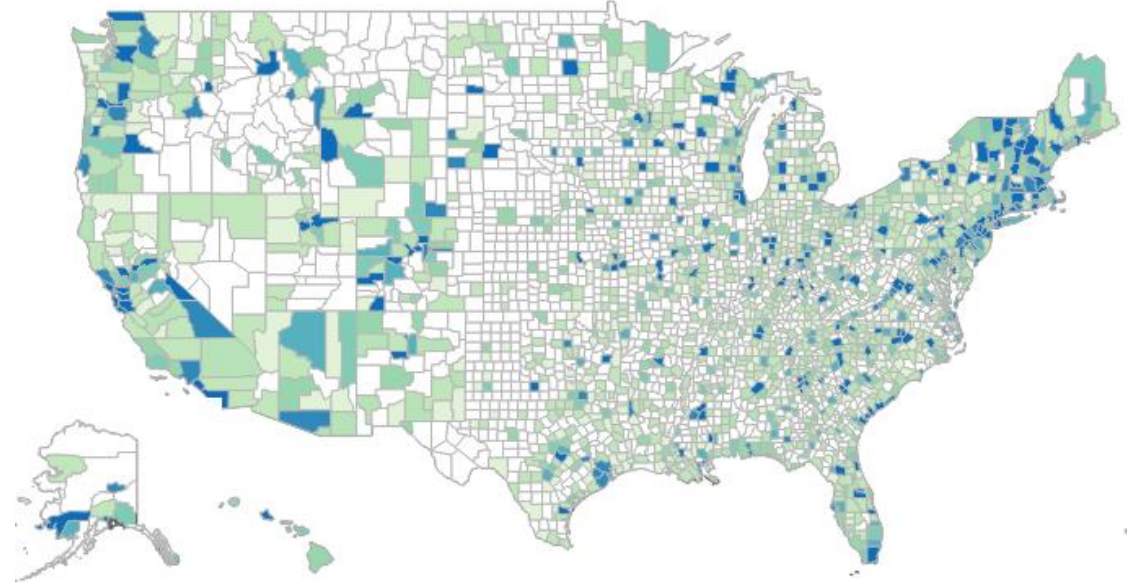
Affiliations + expand

PMID: 26337718 DOI: [10.1111/pde.12662](#)

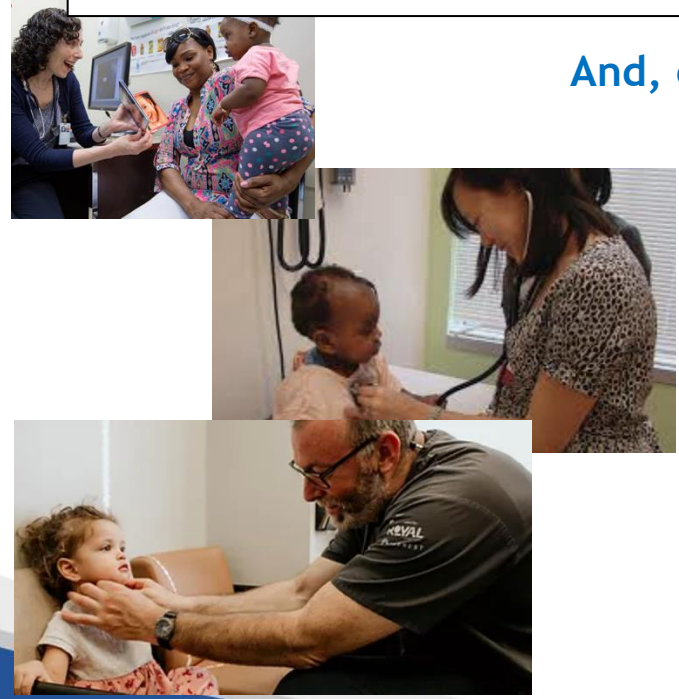
30% of pediatric primary care visits are for a primary skin problem.

And yet: 26% of pediatric residency program directors felt that their graduating residents received “INADEQUATE” training in dermatology.

And, even if that training was 100%, there are not enough pediatricians in our target rural areas



White spots = lack of pediatricians





How can we show the impact?

Project ECHO model has been well proven in the past

Evaluation of impact has unique challenges:

- Multistate delivery (multiple insurances/Medic aids)
- Clinics and schools (not all insurance or clinic captured care)
- Longitudinal nature (changing cohort for before/after assessments)
- Timelines for additional impacts are long (medical students choosing dermatology and rural practice is a minimum 6 year timeline from participation in this project)



Start with a quality improvement mindset

How well are we doing what we are doing?

Pediatric Dermatology

RESEARCH IN BRIEF

Efficacy of pediatric dermatology Extension for Community Healthcare Outcomes (ECHO) sessions on augmenting primary care providers' confidence and abilities

An unanswered question in ECHO, and specifically from prior pediatric dermatology ECHO, is how well is information retained?

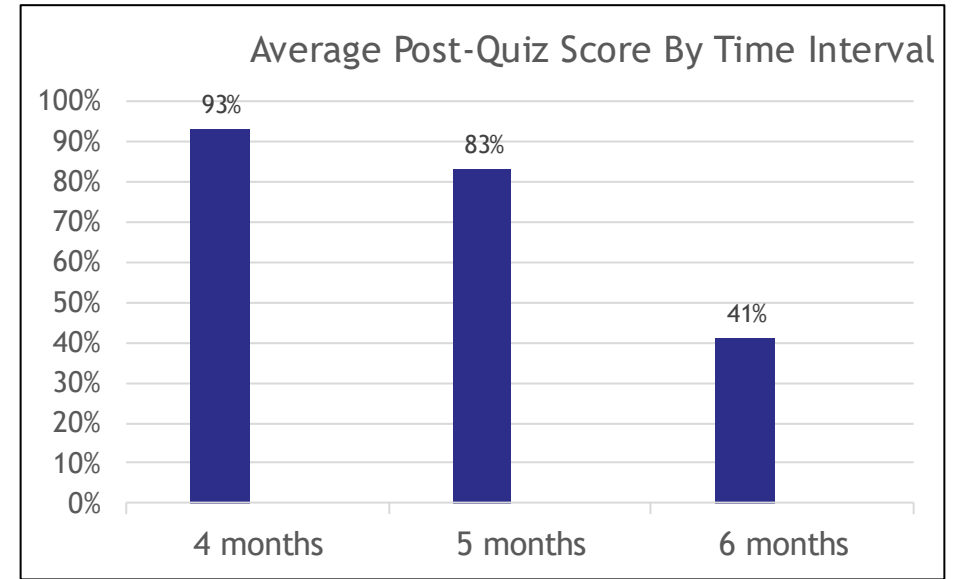
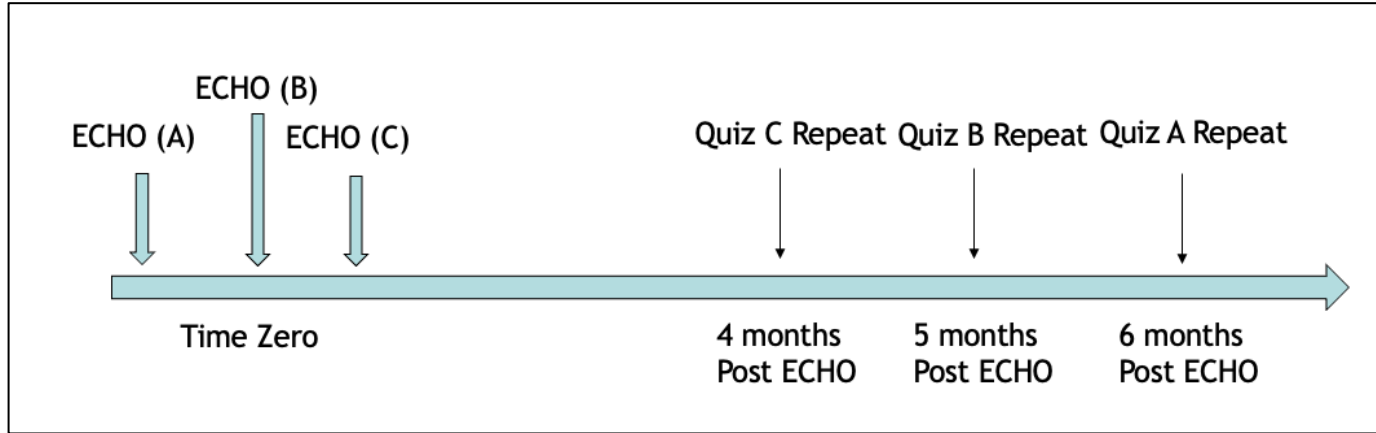
Step 1: Could we establish a baseline? Pilot.



What did we learn from our first year March 2024-2025?



Pilot Quality Improvement - Year 1



Response Rates By Profession			
Profession	Attendance	Recall	Rate
Pediatrics	19	7	37%
Dermatology	3	1	33%
School nurse or other nurse	32	11	34%

Average Response Rates By Time Interval	
Time Interval	Rate
4 months	45%
5 months	25%
6 months	43%

No trend, sample is small

Our baseline response rate was too small to assess a difference if we implemented an “improvement”

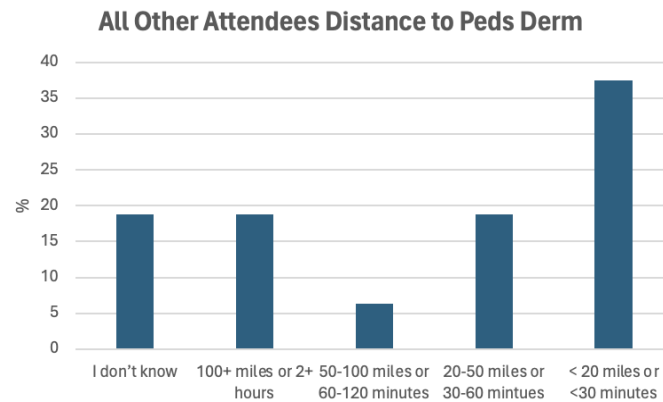
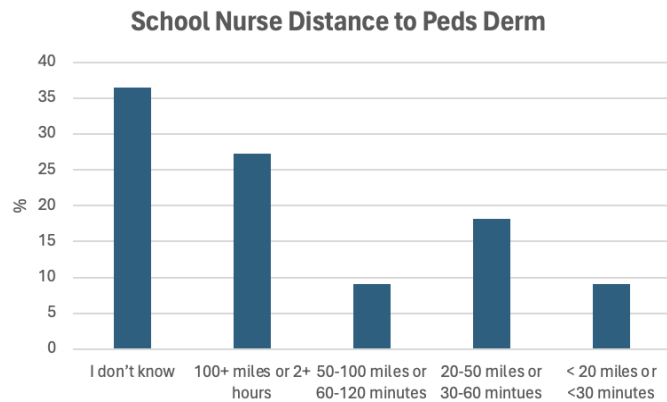
But we also learned:

School nurses made up nearly 50% of our participant population in the first year (March '24-25)
Decreased to 29% in our second year ('25-26)

Why does it matter?

School nurses were nearly twice as likely to be 100+ miles or 2+ hours from a pediatric dermatologist (or to be unsure of their closest pediatric dermatologist) compared to all other attendees.

An unexpected connection and of particular importance to rural children



Year 2: 2025

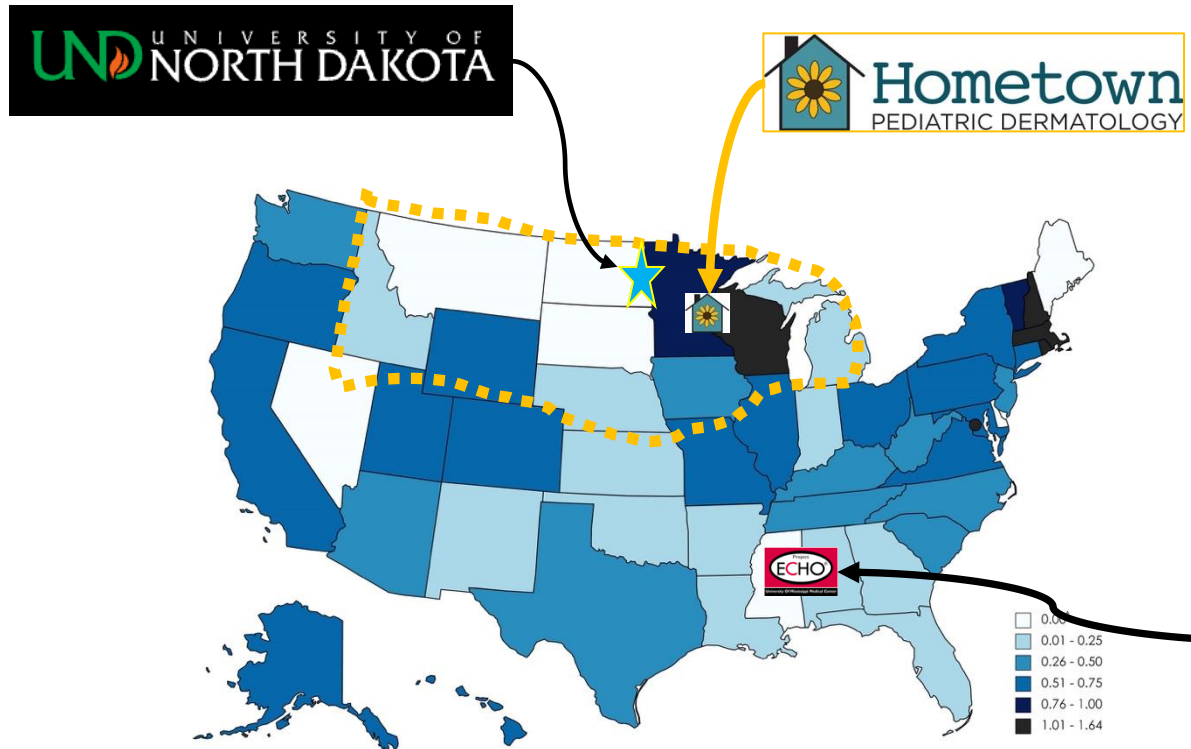
Hub team: DeAngela Ivory, Vanessa Trammel (UMMC)

Physician lead: Sarah Asch, MD (Minnesota)

NEW Medical Student: McKenzie Burian (North Dakota)



Big picture: deliver high quality, timely pediatric subspecialty care to rural kids and adolescents



Pediatric Dermatology, Volume: 38, Issue: 6, Pages: 1523-1528, First published: 14 October 2021, DOI: (10.1111/pde.14824)

1. Need more dermatologists in these areas (Mentor and sponsor medical students)
2. Need pediatric facing clinicians who will treat (train more pediatricians and ECHO to support)
3. Need awareness of the diseases and treatments for those providers there now (ECHO)
4. Awareness of Tele-specialists to help fill gaps



Shivani Sinha MS, Gloria Lin MD, MS, Micaella Zubkov BS, Rong Wu PhD, Hao Feng MD, MHS





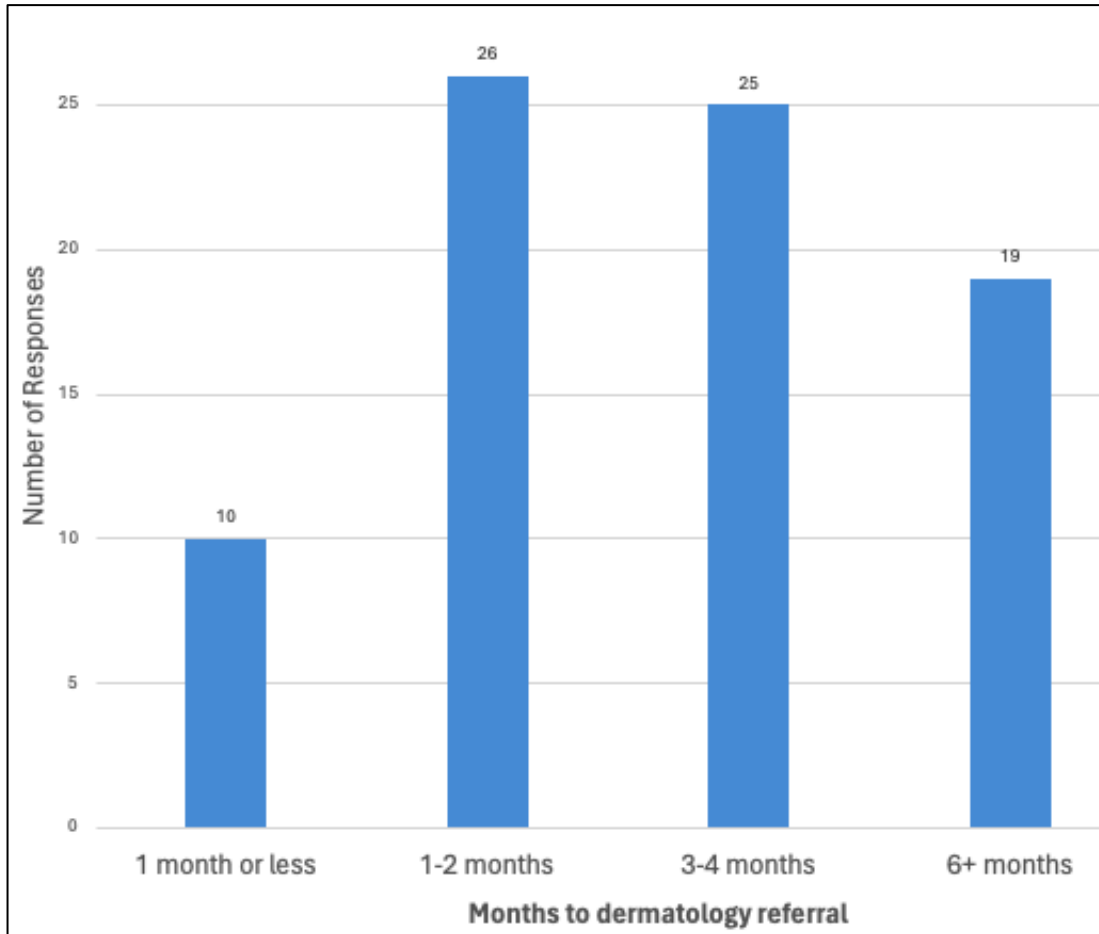
Rural Access to Dermatology

The strongest known indicator of eventual rural practice is rural origin.

Yet, rural trainees are underrepresented in medicine.

1. Recruit more medical students from rural areas to dermatology
2. Get them accepted to these very competitive programs

Estimated wait time for dermatology of attendees communities is many months



Q. For your pediatric patients, what is the average wait time to see a dermatologist after making a referral?

80 referring clinicians (represented here)

22 school nurses who do not refer directly to dermatology or pediatric dermatology

9 "other" responses

Free text answers are messy, but revealing...

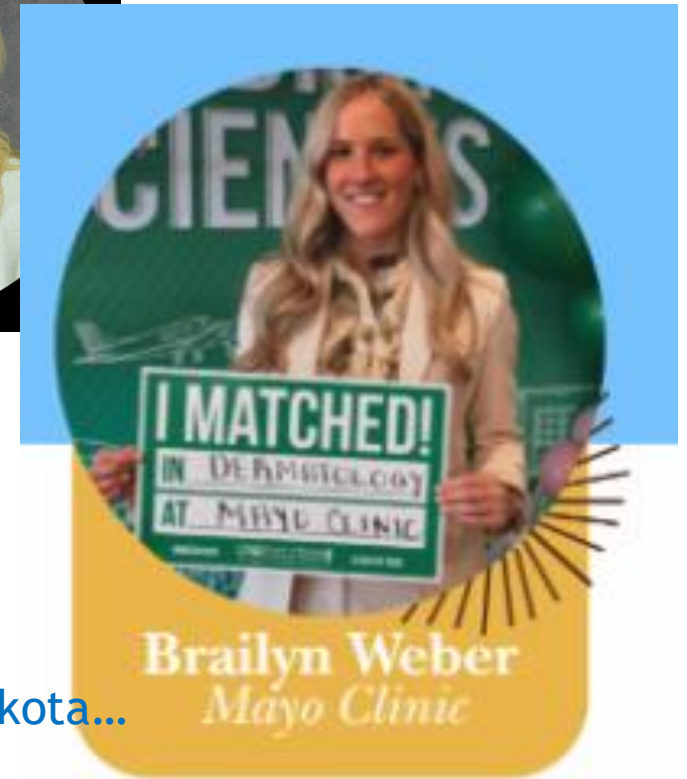
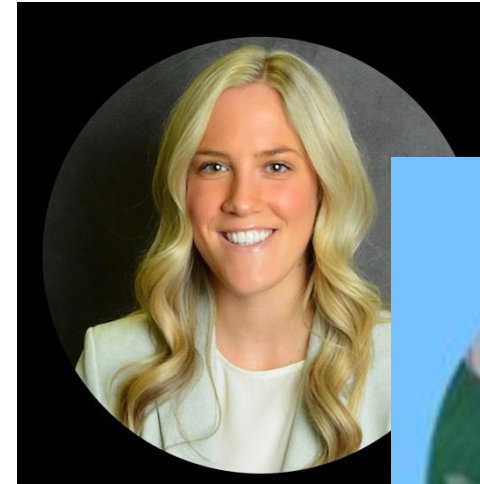
We used to have a ped dermat on staff at xxx who could see patients within a few months, but now xxx has left, so we will refer to Twin Cities and can be many months

For dermatology, 6+ months (closer to a year). For peds dermatology, 1-2 months. However, families have to drive.

When we say “drive” in the Upper Midwest, we are usually talking 5+ hours

SUCCESS! Making more dermatologists for North Dakota

Pediatric Virtual Grand Rounds at regional rural centers => Meeting a medical student => mentorship/sponsoring => successful Match



Limited local mentorship opportunities for dermatology

Plans to return to North Dakota to practice

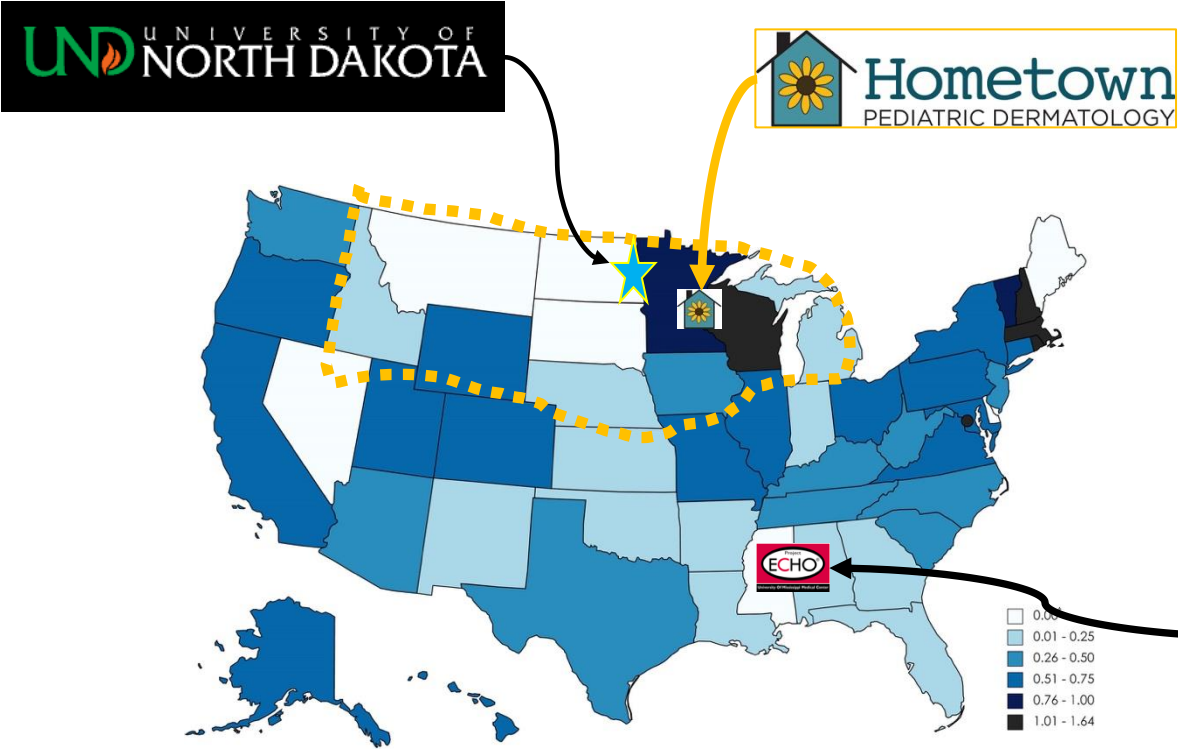
Now MATCHED(!) to Mayo Clinic for Dermatology Residency

McKenzie Burian is our current dermatology interested student also from North Dakota...



New pediatric residency in Fargo!

- 1. Need more dermatologists in these areas (Mentor and sponsor medical students)
- 2. Need pediatric facing clinicians who will treat in those areas (train more pediatricians and use ECHO)
- 3. Need awareness of the diseases and treatments (ECHO)
- 4. Awareness of Tele-specialists to help fill gaps



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Pediatric Dermatology ECHO
Monthly on 1st Wednesday
12pm-1pm CT

Shivani Sinha MS, Gloria Lin MD, MS, Micaella Zubkov BS, Rong Wu PhD, Hao Feng MD, MHS





Rural medical student, Clayton Frazier; PeDRA awardee

Dr. Megan Evans and UAMS med student Clayton Frazier presented a poster entitled "A Cross-Sectional Network-Based Geographic Examination of Patient Access to Pediatric Dermatologists Across the U.S."



Identifying care gaps by mapping geographic access to pediatric dermatologists

One-hour service areas around each pediatric dermatologist office was generated using road networks and speed limits. **23+ million children (31.4%) reside beyond a one-hour drive from a provider**

Clayton is in Arkansas and has some support in his home dermatology program (Dr. Megan Evans is a pediatric dermatologist there) and Dr. Thy Huynh at UMMC

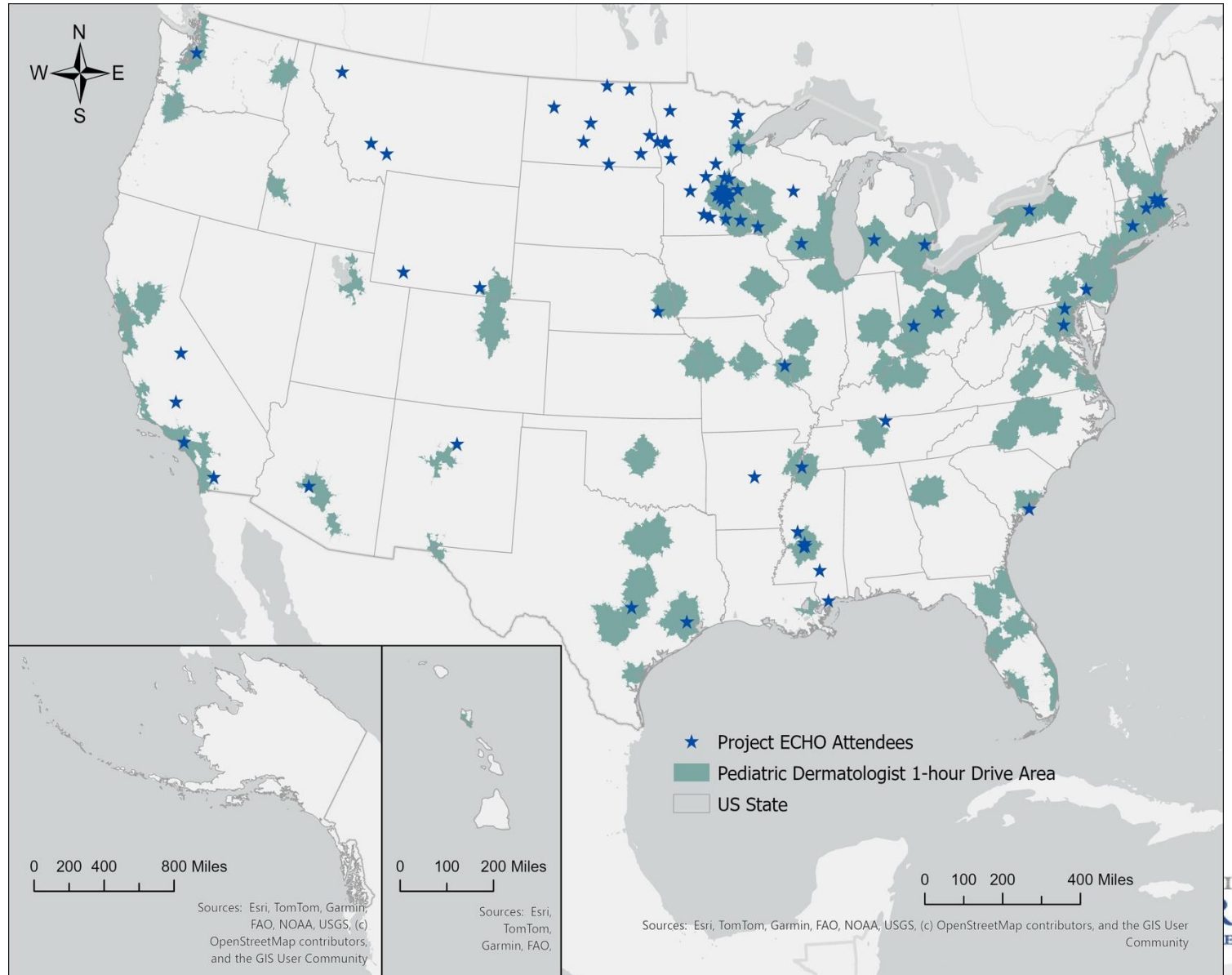


Is our ECHO reaching the geographic targets where we lack pediatric dermatologists?

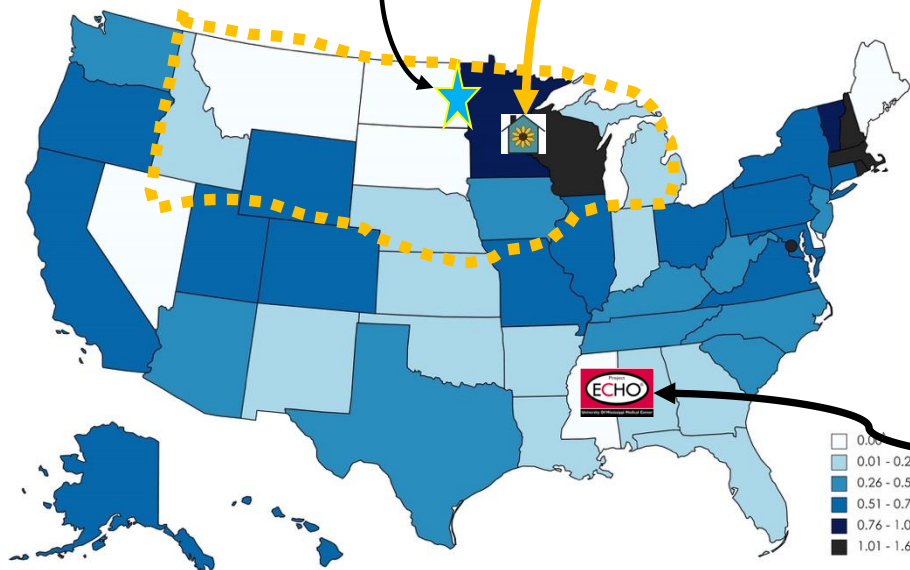
61% of participants of the Pediatric Dermatology of the Upper Midwest ECHO are in fact from the Upper Midwest which is our target region

Our ECHO Attendees = ★

And, we can see many of the stars are outside of the 1 hour service area of a pediatric dermatologist

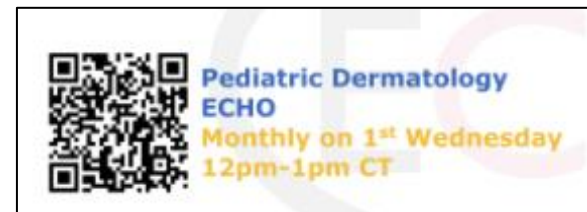


Building on successes with a long term view



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1. Need more dermatologists in these areas (Mentor and sponsor medical students)
2. Need pediatric facing clinicians who will treat in those areas (train more pediatricians and use ECHO)
3. Need awareness of the diseases and treatments among local providers (ECHO as stopgap)
4. Awareness of Tele-specialists to help fill gaps

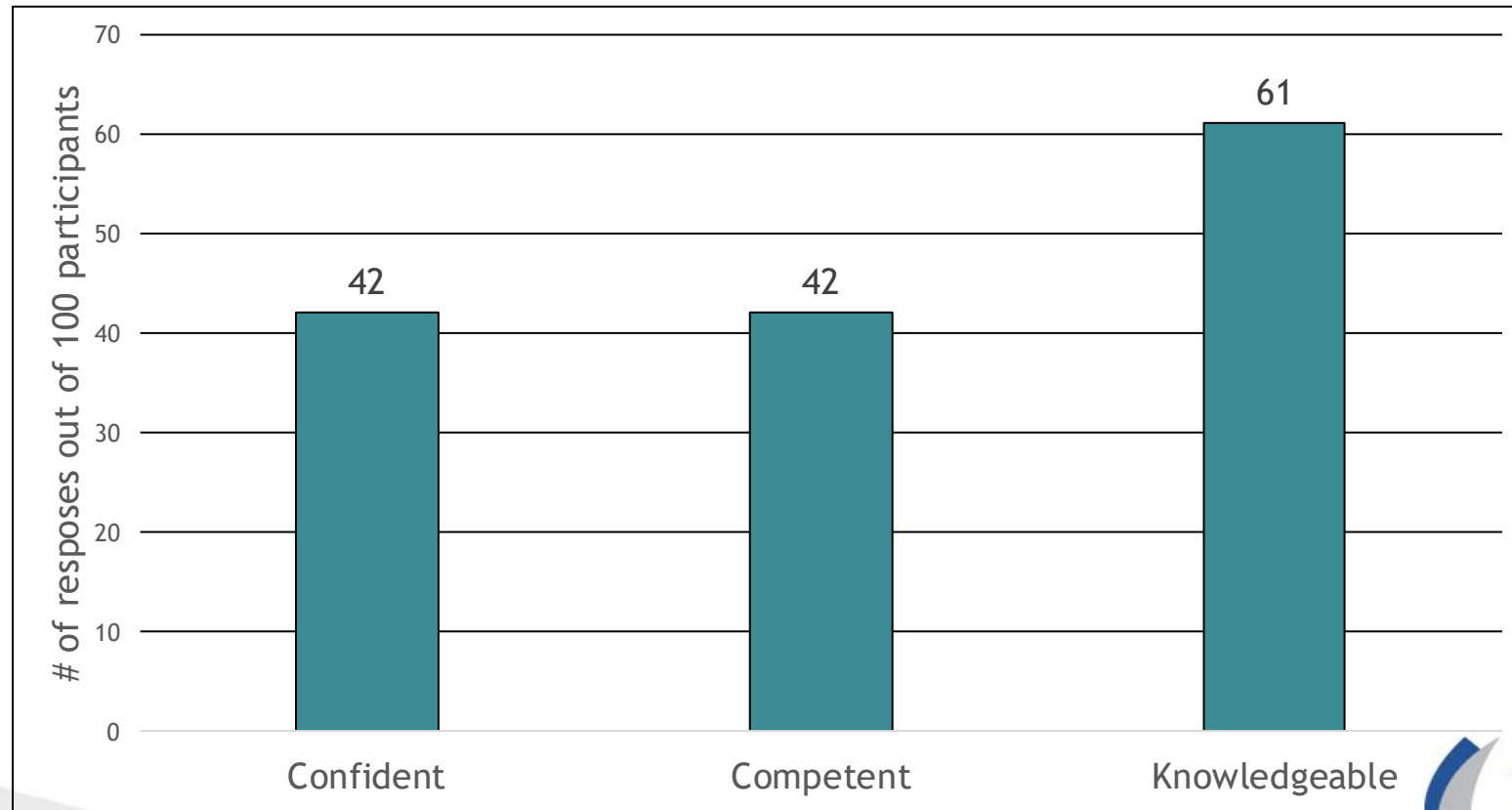


Shivani Sinha MS, Gloria Lin MD, MS, Micaella Zubkov BS, Rong Wu PhD, Hao Feng MD, MHS



Competent, Confident and Knowledgeable

From an ECHO by the AAP, we learned that endorsing these statements shows downstream clinically meaningful improvements with new knowledge acquisition.



Since our response rates on recall quizzes were low, we wanted a way to measure at the initial post-survey an estimate of our efficacy of presentations



Make it relevant to daily practice

74% of returning participants learned information in a previous ECHO that helped a patient

83% of returning attendees share tips learned at a previous ECHO with their colleagues



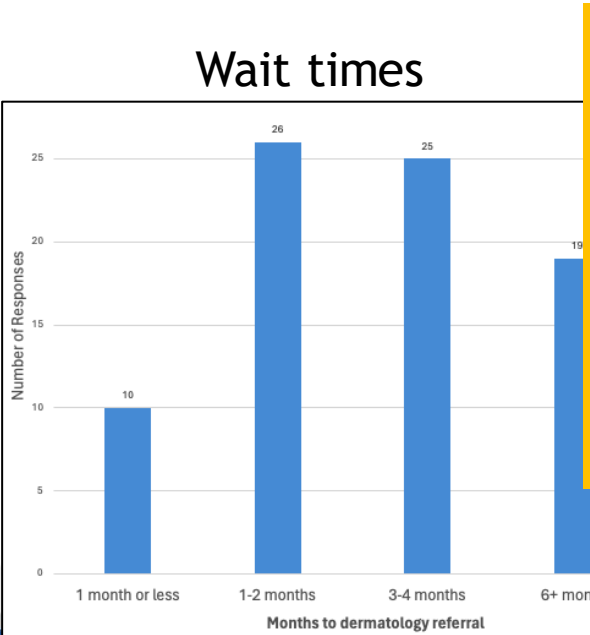
We keep it relevant by basing our topics on an open ended “what do you want to learn about?” question



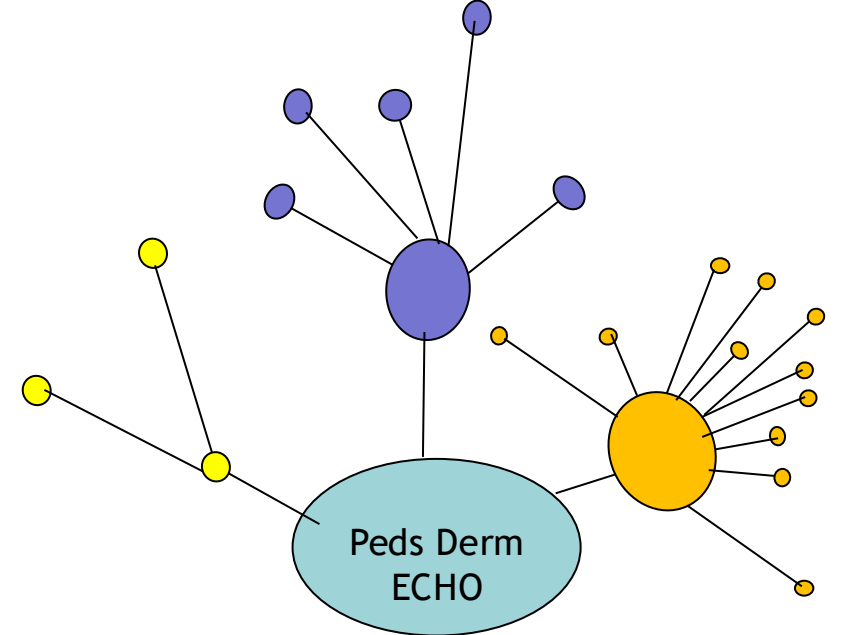
Meaningful impact for kids and families

As a pediatrician, I will now order MRIs of the brain and spine for large CMNs while waiting for the Dermatology referral to make sure it can occur without contrast within the first 6 months

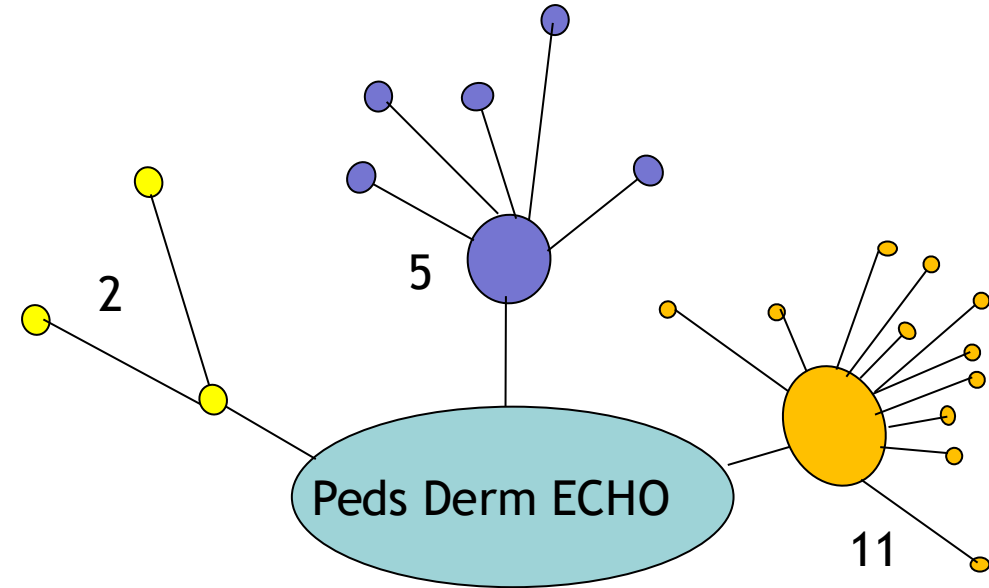
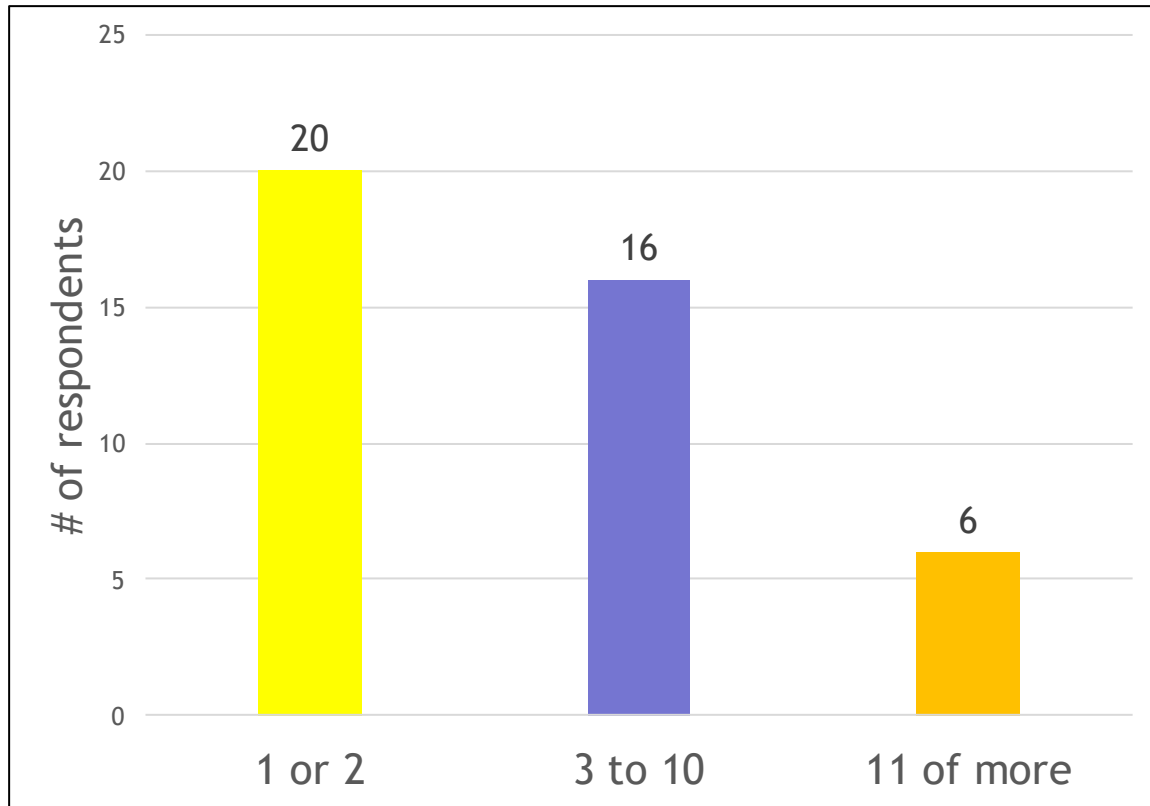
Am thinking of a few recent patients with birthmarks. Can confidently say to them now risk of malignancy for the birthmarks they have is minimal to none



MRI in the first 4-6 months is the best predictor of DEATH, seizures, need for neurosurgery in children with giant congenital melanocytic nevi

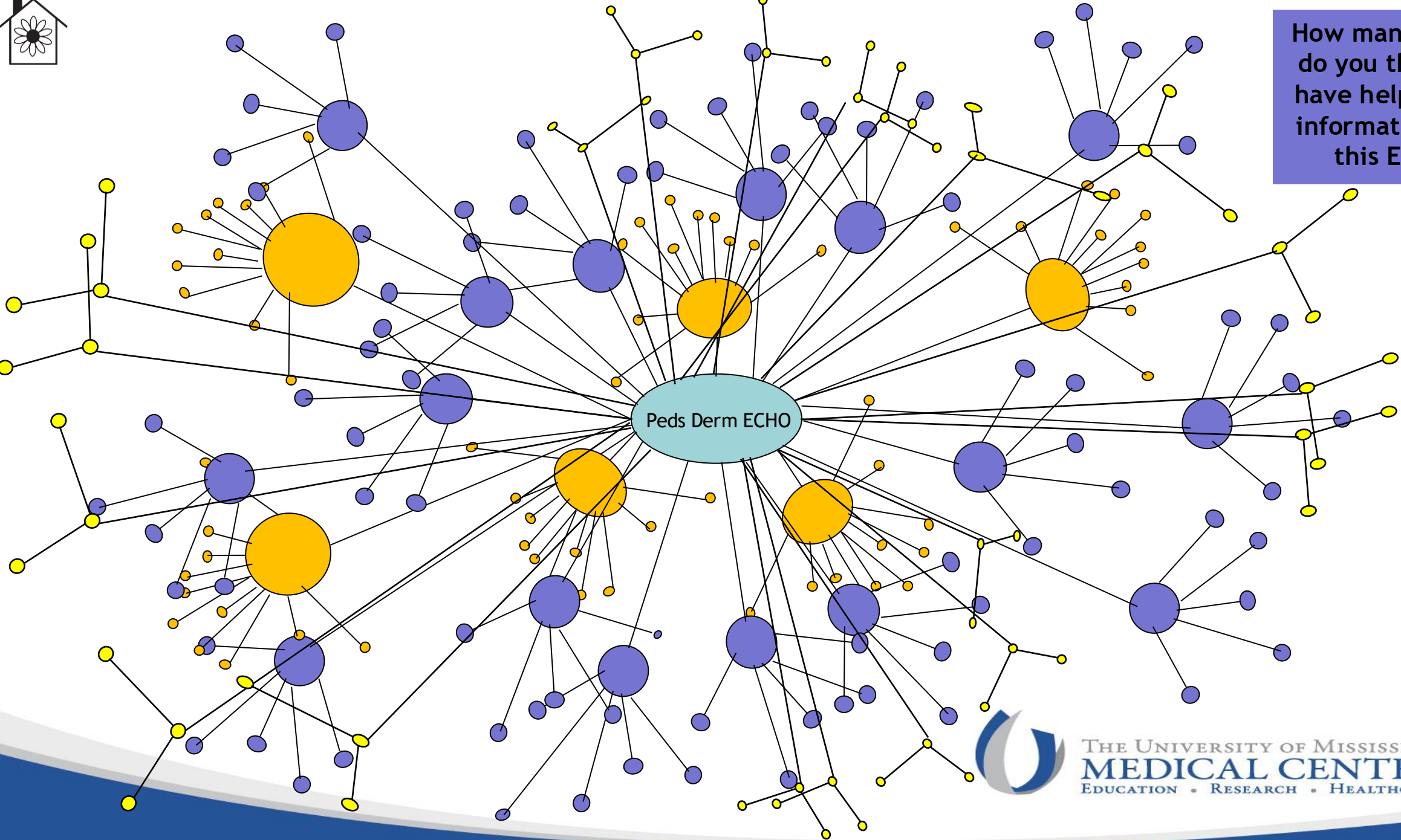


Q. Please estimate how many patients or students might have benefited to date from information you learned from attending the Pediatric Dermatology ECHO program





How many people do you think you have helped with information from this ECHO?



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What participants are saying – in their own words

A patient with perioral dermatitis

"I saw a patient this morning and felt more confident treating with metronidazole – the family had already trialed Vaseline and hydrocortisone without improvement. We are hopeful to see improvement! Thanks, Dr. Asch, for sharing your expertise!"

clinical confidence

Aquaphor and the lanolin question

"A patient was using Aquaphor ointment and experienced stinging. I was able to explain that it was likely due to the lanolin – a tip I learned from the ECHO session."

counseling families

Rash recognition across skin tones

"Learning to recognize that skin conditions have a different appearance on different skin tones. Rash identification is difficult anyway – adding a change in skin tone increases the difficulty. This has changed how I approach assessment."

health equity

Q. Would you share this opportunity with a colleague or professional acquaintance? Why or why not?

Themes identified

Practical & relevant content

29 responses

Accessible & convenient

20 responses

Knowledgeable presenter

14 responses

Collegial atmosphere

11 responses

Free CME/CE value

7 responses

"Applicable to bread-and-butter pediatric care"

"Actually addresses what we see in primary care day in/out"

"Easy to attend and welcoming"

"Being able to have access to the slides is invaluable"


"Presentor/s were very knowledgeable and willing to share their expertise"

"A lovely no-pressure way to learn from colleagues all around the country"

"Helpful, succinct, and CE credits"

"Informative free CE"

We keep it relevant by basing our topics on an open ended "what do you want to learn about?" question



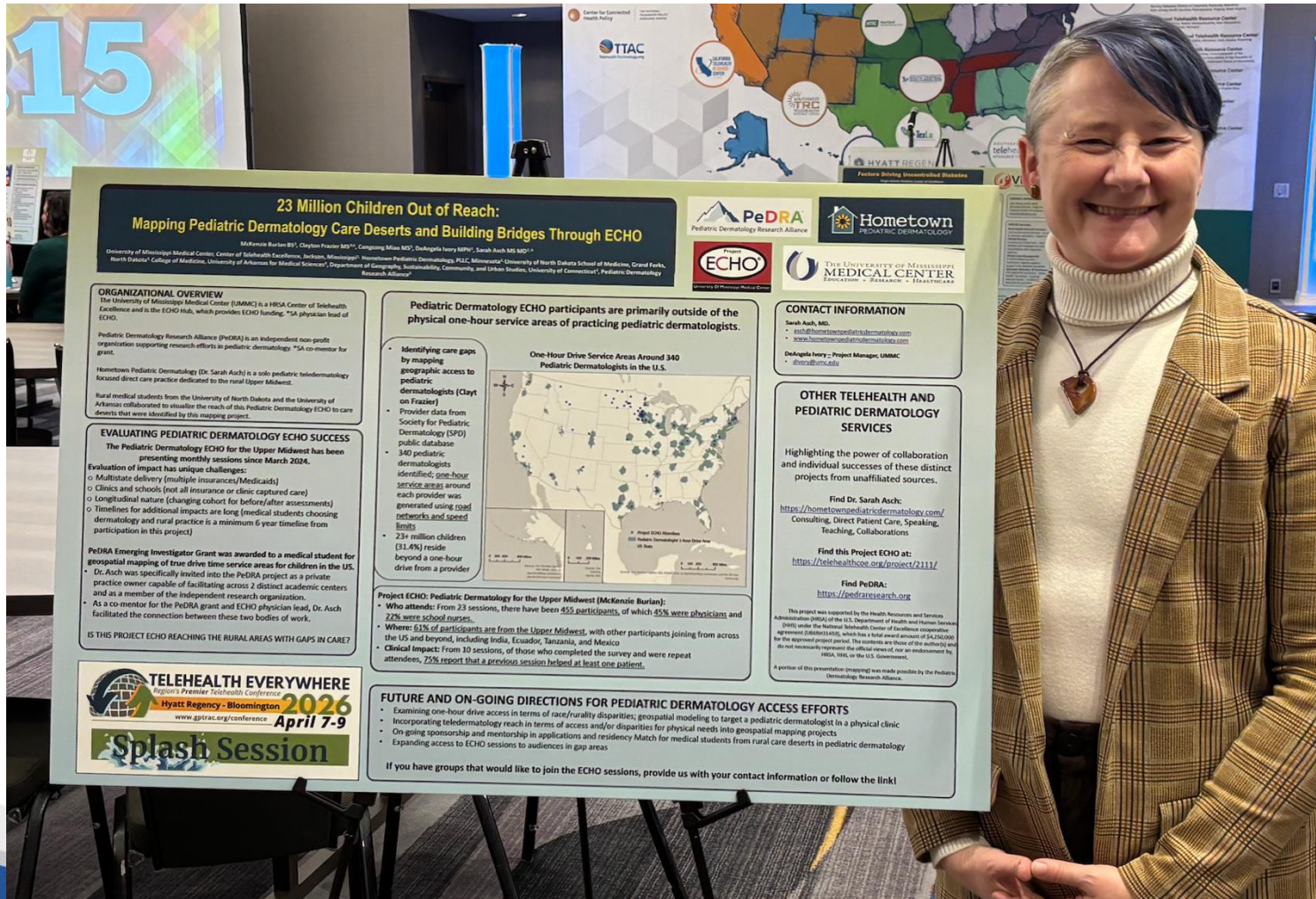
This is the estimated impact from the people who actually attend, not their colleagues who also learn from the sharing of tips



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gpTrac Telehealth Everywhere 2026: Splash Session



This is a mix of speed-dating and poster session and is excellent for generating thought-provoking questions and discussions

HIGHLY RECOMMEND

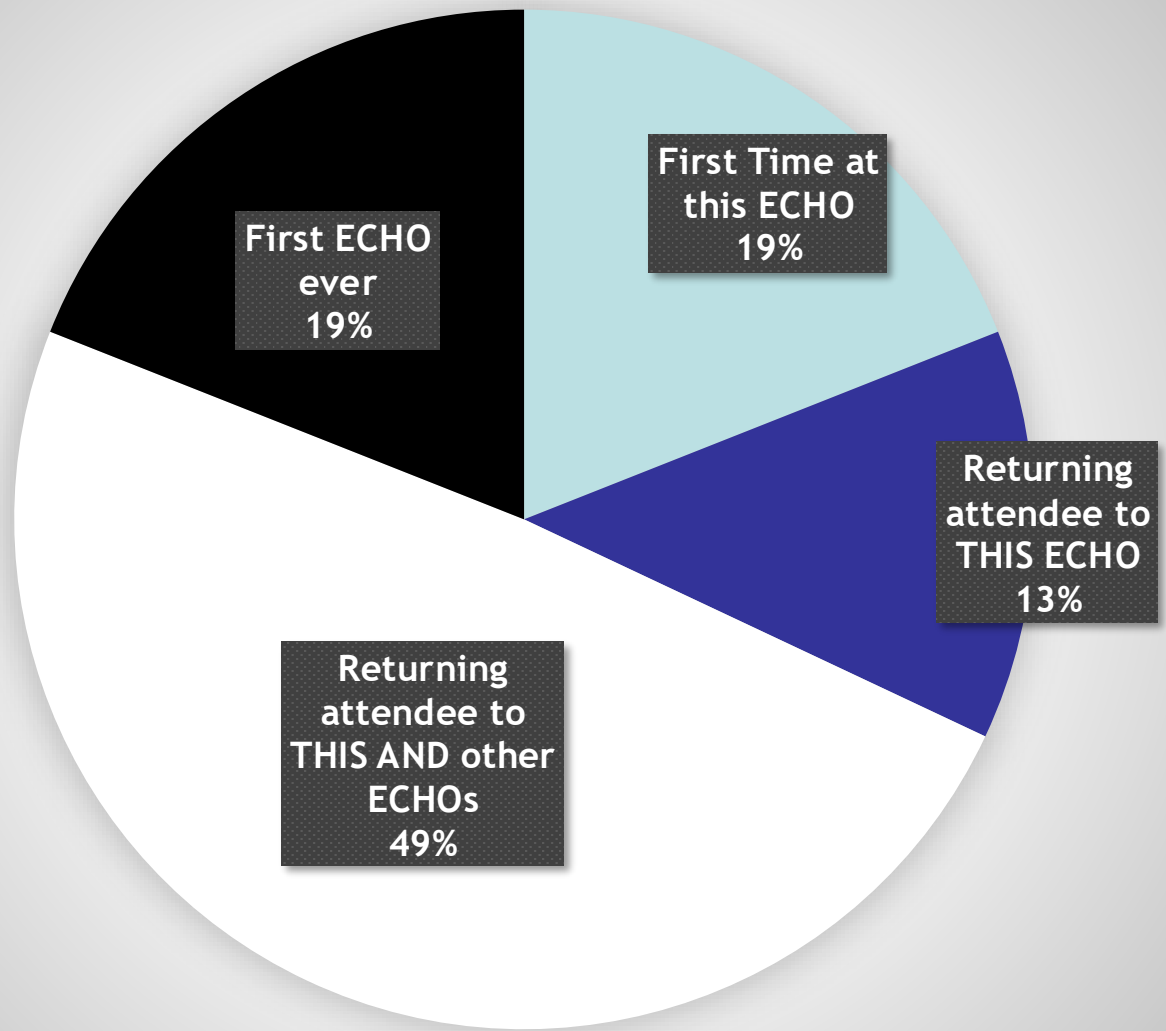
How do you get people to GO to ECHOs?

What does an ECHO look like?



Why do people come?

People who like ECHO model, go to more than one ECHO.



Returners: 64% total

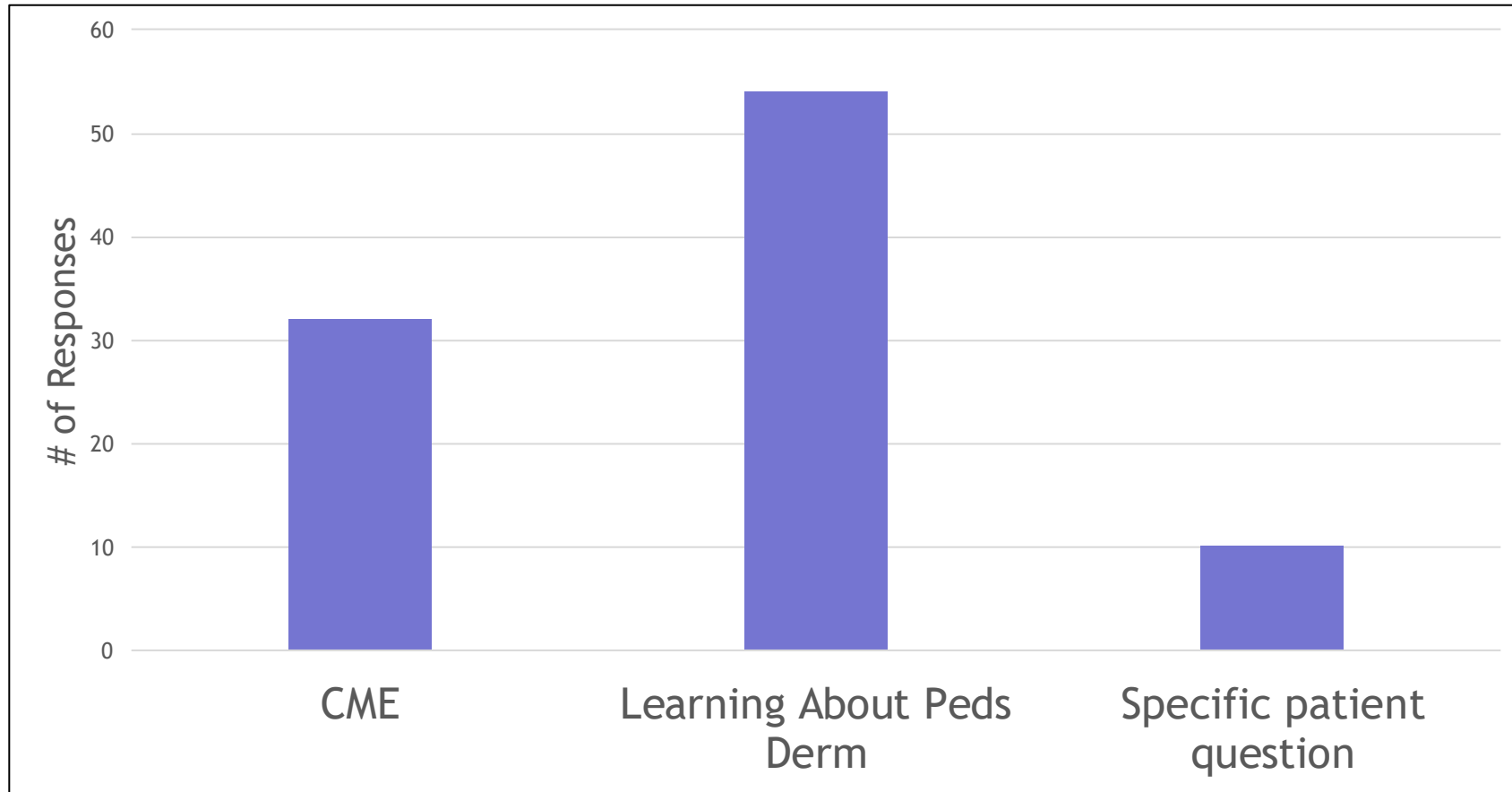
49% of those go this one AND other ones.

19% have been to another ECHO before

13% returners to this ECHO



Q. What brings you back to this ECHO? Check all that apply.



This ECHO is longitudinal and open attendance

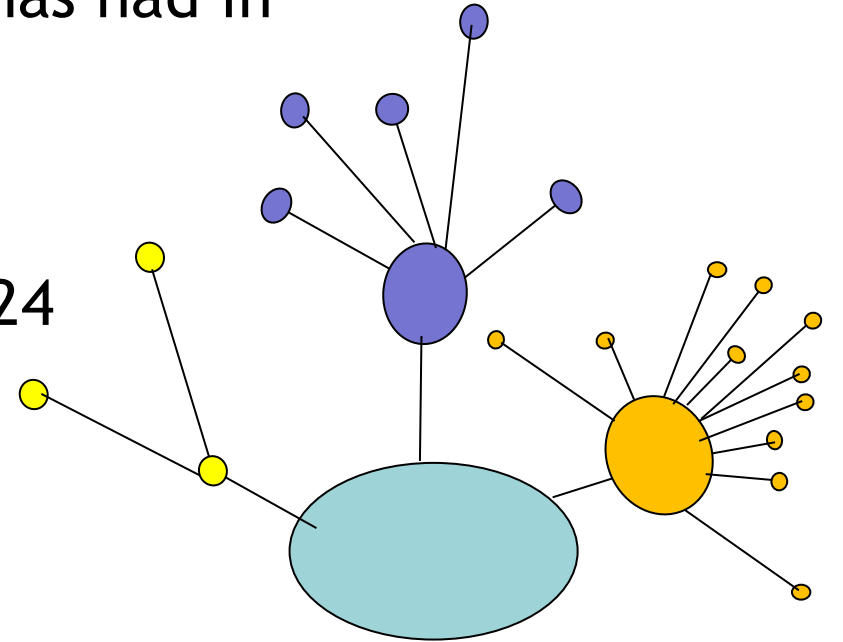
This came from an open ended question in the past, and we wanted to know the relevance of offering CME/CEUs vs. cases vs. general knowledge

One story is worth ten studies...

“After attending an ECHO session on eczema, I mentioned dupilumab to the family of one of my students who has been struggling with eczema. She has clearer skin than she has had in years and her confidence has gone through the roof!”

- School nurse attendee

Pediatric Dermatology ECHO for the Upper Midwest 2024



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Keep identifying problems and finding solutions



Elizabeth Seiverling, MD
Guest Speaker
Dr. Elizabeth "Vinny" Seiverling is an Associate Professor of Dermatology at Tufts University School of Medicine in Boston. She attended Penn State College of Medicine and completed an Internal Medicine internship at Massachusetts General Hospital followed by Dermatology residency at the University of California San Francisco. Prior to joining the Tufts Dermatology faculty in 2020, she was the Dermatology Division Director for Maine Medical Center and the medical director for Maine Medical Partner's Skin Oncology clinic.

► [PRiMER](#). 2023 Feb 3:7:276659. doi: 10.22454/PRiMER.2023.276659.

Impact of Dermoscopy Training for Primary Practitioners on Number Needed to Biopsy to Detect Melanoma

Biopsy the right thing

Elizabeth V Seiverling¹, Madeline A Prentiss², Kathryn Stevens², Henry Stoddard³, Peggy R Cyr⁴, Hadjh Ahrns⁵

Workshop + **monthly ECHO** + primary care clinics were provided with dermatoscopes = The number of nevi biopsied to detect one melanoma decreased from 34.3 to 11.3 following the training intervention.

► [JMIR Dermatol](#). 2022 Sep 23;5(3):e40888. doi: [10.2196/40888](#)

Get the right problems into the specialists

To Refer or Not to Refer in Teledermoscopy: Retrospective Study

[Esmée Tensen](#)^{1,2,3,∞,#}, [Femke van Sinderen](#)^{1,2,3,#}, [Marcel W Bekkenk](#)^{4,5}, [Monique W Jaspers](#)^{1,2}, [Linda W Peute](#)^{1,2}

GPs adjusted their referral decision in 52% , led to a reduction of unnecessary referrals AND referrals of patients with (pre)malignant skin lesions that GPs would not have referred directly to the dermatologist

Better interim monitoring for high risk patients

JMIR DERMATOLOGY

Research Letter

Direct-to-Patient Mobile Teledermoscopy: Prospective Observational Study

Winnie Fan^{1*}, BS; Gunnar Mattson^{1*}, BS, MPH; Amanda Twigg^{1,2}, MD

¹Department of Dermatology, School of Medicine, University of California San Francisco, San Francisco, CA, United States

²Department of Dermatology, San Francisco Veterans Affairs Health Care System, San Francisco, CA, United States

*these authors contributed equally

At-Home patient directed dermoscopy at the VA!

