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Barriers and Facilitators to Use of a Clinical Evidence Technology for Management of Skin Problems in Primary Care: Insights from Mixed Methods

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Background

Primary care providers (PCPs) must diagnose and treat a wide variety of acute and chronic conditions including skin problems. Skin problems represent a significant proportion of diseases presented in primary care.

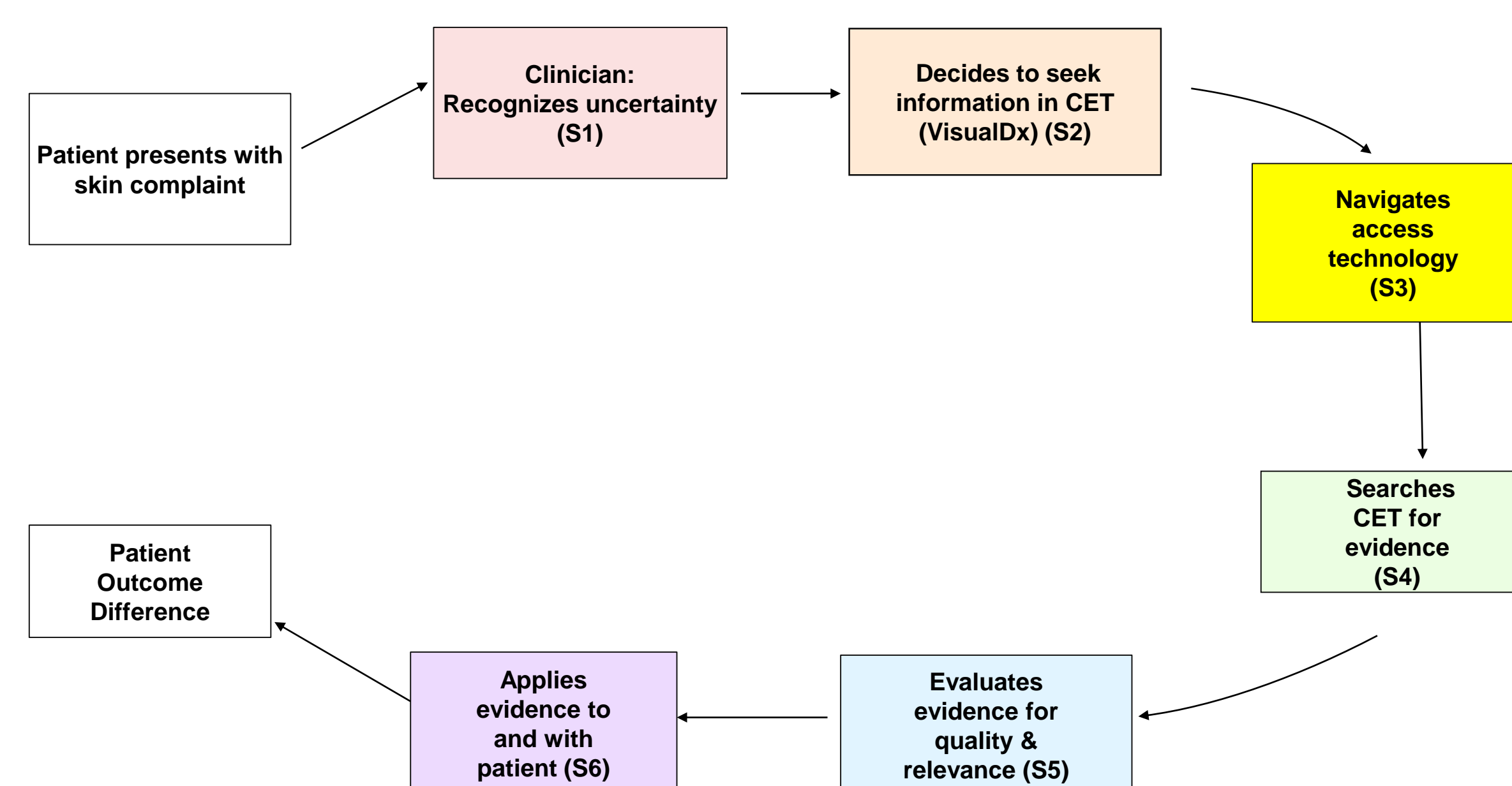
A 2016 cluster-randomized trial tested the effectiveness of a clinical evidence technology (CET), VisualDx, to improve the resolution of patient skin problems and reduce the number of return appointments [1]. There was no difference between groups in the outcomes measured in that trial.

Question: Why did the CET fail to make a difference in the outcomes tested?

Objectives

- 1) Learn why use of VisualDx did not make a difference in skin problem resolution or return appointments from the perspective of participating PCPs.
- 2) Identify facilitators and barriers at each behavioral step as experienced by the PCPs.

Model: Steps to Acquire, Appraise and Apply Evidence



Methods

Mixed Methods study design
Survey of 21 PCPs – 13 Active, 8 Control
Interviews of 11 Active arm PCPs

Qualitative Interview Results: Steps 1–4

Step 1: Recognize Uncertainty

Barrier	Confidence	“There were a lot of patients where I felt comfortable with what the problem was.” PCP11 (24 yrs.)
Facilitator	Uncertainty	“[Dermatology] is way harder because we just don’t have the exposure, and so much of it is how it looks rather than a description of symptoms, so something like VisualDx helps. PCP07 (3 yrs.)

Step 2: Seek Evidence in CET (VisualDx)

Barrier	Time	“When you are already 45 minutes behind schedule and someone comes in with an [odd] rash, it’s easy to say, “Try this. If it doesn’t work call me back”. PCP10 (22 yrs.)
Facilitator	Intention	“ I used it close to every time I saw a skin problem, unless it was super obvious...but even then, I would use it to get treatment recommendations. PCP08 (3 yrs.)
Barrier	Other sources (instead)	“I was next to a skilled older practitioner so my first recourse might be to go to him. So that may have decreased my use” PCP09 (4 yrs.)

Step 3: Navigate Access Technology

Facilitator	EHR access	“If I’m seeing patients, I’m already in the EHR, and VisualDx is there. It’s easy to find. 99% of the time that’s what I’d do.” PCP11 (24yrs.)
Barrier	Access failure	“[It was] moderately useful in the beginning but then, I couldn’t access it...and I didn’t use it again.” PCP05 (40 yrs.)

Step 4: Search/Acquire Evidence Using CET

Facilitator	Ease of use	“Once I knew what I was doing, it wasn’t hard to use.” PCP06 (4 yrs.)
Barrier	CET interface	“I remember staring at it saying, “Where do I put the information in?” So it wasn’t as user friendly for data input” PCP10 (22yrs.)

Quantitative Survey Results

Protocol adherence Active Group (100%)
Control PCPs (88%)

Active group use

PCPs \leq 5 years in practice (Med.) 15 times
PCPs \geq 6 yrs. in practice (Med.) 10 times

VisualDx was “Somewhat easy” (Med.3,scale 1-4)
VisualDx was “Occasionally useful”(Med.2,scale1-4)

Other evidence sources used:

UpToDate (11), textbooks (6), Google (4)

Qualitative Interview Results: Steps 5-6

Step 5: Evaluate evidence for quality and relevance

Facilitator	Useful-Diagnosis	“I did, on a few occasions have no idea what I was looking at in a patient, and used [VisualDx]...to figure it out” PCP08 (3 yrs.)
Facilitator	Useful-Confidence	“I can definitely say it helped me feel more confident about a diagnosis.” PCP02 (32 yrs.)
Facilitator	Useful- Treatment	“[For] a fungal nail infection ...there was a new topical treatment that had recently been FDA-approved and I hadn’t used it before.” PCP02 (32 yrs.)
Barrier	Irrelevant information	“If you put basal cell carcinoma in VisualDx, it’s a thousand pictures of every ... way it can show up. It’s not showing the typical ones” PCP03 (34 yrs.)
Barrier	Other sources	“I have a favorite dermatology book I use like I would use VisualDx.” PCP10 (22 yrs.)

Step 6: Apply To and With Patient

Facilitator	Patient communication	“I used it with patients, especially if they had something that went away; then they could say,” Oh, it did look like that”. Helpful for patient communication? Absolutely.” PCP04 (17 yrs.)
Facilitator	Shared decision-making	“I would open it up in the patient room oftentimes, and go through it [all] with them.” PCP06 (4yrs.)
Barrier	No Difference	I can’t think of a particular instance where it clinched it for me or made a clinical decision distinction or difference.” PCP09 (4 yrs.)

Mixed Methods Results Summary

Facilitators:

1. Easy to access
2. Benefit to diagnosis and treatment
3. Patient communication.

Barriers:

1. Irrelevant search results
2. Other sources preferred
3. Limited application to patients.

Conclusions

PCPs **did not** use VisualDx frequently or exclusively enough to make a difference in patient level outcomes.

VisualDx may support trainee **education** and **PCP life-long learning** in management of skin disease