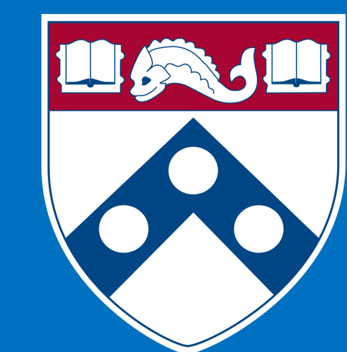
Liraglutide Use in Pediatric Type 2 Diabetes: Prescriber Perceptions of Barriers and Facilitators of Implementation into Clinical Practice



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Introduction

- Type 2 diabetes mellitus (T2DM) is increasingly common in youth and is characterized by relatively rapid pancreatic beta cell decline and high complication rates.[1-4]
- Glycemic targets are rarely met on metformin or insulin therapy in pediatric T2DM, the only two therapeutic options for pediatric T2DM for nearly two decades.[4,5]
- Fortunately, in 2019, the glucagon-like peptide-1 agonist liraglutide was the third therapeutic approved by the US Food & Drug Administration for pediatric T2DM.

Objectives

To explore pediatric diabetes prescriber's perceptions of the acceptability and appropriateness of prescribing liraglutide for youth with T2DM, as well as barriers and facilitators of its implementation into clinical practice.

Methods

- Semi-structured interviews were conducted with attending and fellow physicians and nurse practitioners who care for youth with T2DM at a large academic pediatric endocrinology clinic.
- Interviews were supplemented with a patient vignette, chart-stimulated recall, and review of a clinical practice guideline.
- Interviews were audio-recorded, transcribed, and analyzed using modified grounded theory by three coders with constant comparison techniques.

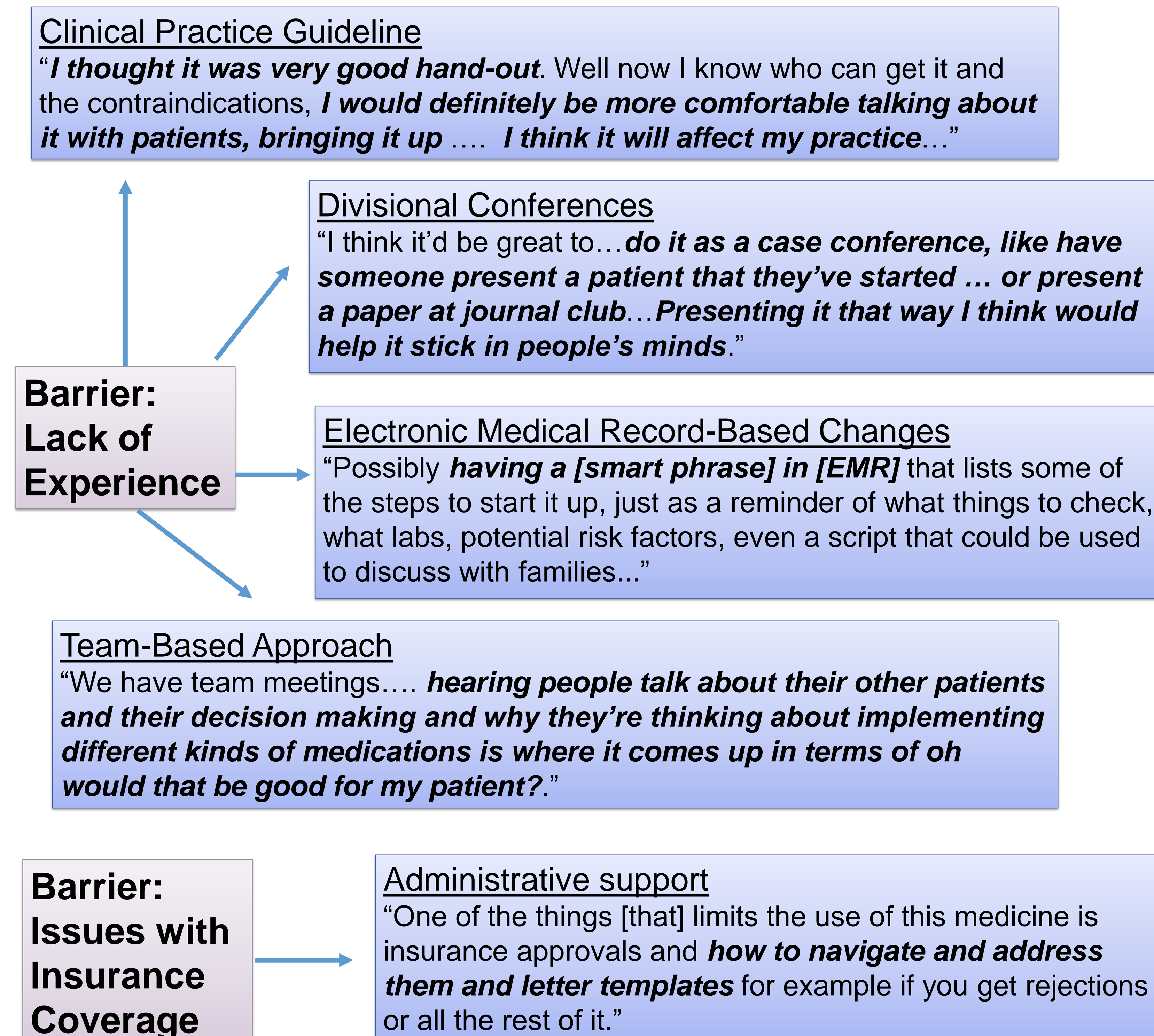
Table 1. Demographics of Interview Participants

Characteristics	Attending Physician	Nurse Practitioner	Fellow Physician	Total
Response Rate	15/20 (75%)	7/11 (64%)	4/4 (100%)	26/35 (74%)
Years of Experience as Diabetes Provider, Median (IQR)	9 (3.8-13.2)	16 (9.5-18.5)	1.5	8 (3-15.8)
Current Number of Patients with Type 2 Diabetes Followed, Median (IQR)	10 (6-16.3)	15 (11-25)	3 (2-4.3)	10 (5-18.8)
Current Percentage of Patients with <u>Diabetes</u> Followed Who Have Type 2 Diabetes, Median (IQR)	30% (10-45)	10% (7.5-17.5)	17.5% (8.8-27)	10% (10-33)

Table 2. Themes Derived from Interviews

Themes	Sub-Themes	Example Quotes
Drivers to Prescribing	1) Promote/maintain weight loss 2) Avoid/reduce insulin 3) Additional therapeutic option 4) Improve glycemic control	"I think it's a better way to manage type 2 diabetes than insulin alone. And I was happy that this actually provides a much better alternative to insulin since it's weight sparing".
Barriers to Prescribing	1) Patient's dislike of injections 2) Provider hesitancy due to: A) Lack of experience B) Concerns about adherence C) Side effects D) Insurance coverage	"I can't remember the last person I actually prescribed it on. And a lot of that I think is because I have…a limited patient population…over 90 percent of my patients are Type 1." "The biggest pause is concern for potential non-adherence and throwing in more medications doesn't fix that." "It got rejected by their insurance, I had to appeal, I had to fill out paperwork…I realized it had taken a couple of hours of my time to try to do that."
Patient Acceptability and Adherence	1) Patient Acceptability: <u>Highest with:</u> A) Family experience B) Interest in weight loss C) Interest in reducing insulin <u>Lowered by Concerns on:</u> A) Dislike of injections B) Side effects 2) Positive patient adherence compared to other medications	"Most of the patients have if not parents, very close family members, who are on some sort of injectable diabetes medication, so it's …not usually too much of a limitation because usually the families are pretty familiar with it." "So I have had patients that, I mention the daily injections, that are not as keen on that idea." "I just had a patient this morning who stopped taking her insulin, but she tells me she takes the Liraglutide...I think because it's once a day, I think it's easier to remember."
Practice Improvement	N/A	"I think we probably need to have more – we need to revisit it with our teams – with our practice center just to make sure everybody's maximizing it appropriately."
Extended Indications	1) Use in different populations (type 1 diabetes) 2) Different order/timing of prescribing 3) Other GLP-1 agonists	"We ought to create our own sort of criteria for kids where we start with dual therapy for some of those patients who have a higher A1C" "If I can't get [liraglutide] itself covered, some insurances do have a preference for [once weekly GLP-1 agonist] even though that doesn't have a pediatric approval. If that's the preferred for the insurance, I'm okay with prescribing [it]."

Figure 1. Suggested Implementation Strategies for Provider-Specific and Process-Specific Barriers



Conclusions

- This study identified several factors that promote prescribing of liraglutide for pediatric T2DM; however, barriers to prescribing were also significant.
- With the introduction of additional medication options for pediatric T2DM, **therapeutic inertia** may now become a more urgent problem to address in the pediatric population, as we found that **provider hesitancy to prescribe liraglutide was common.**
- In order to facilitate optimal implementation of new therapeutics in pediatric T2DM care, **prescribers can be best supported through the implementation strategies identified** (Fig 1.).

Selected References

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