



Pediatric Diabetes Webinar

November 20th, 2024

ELEVATING SPECIALTY PHARMACY

Pediatric Diabetes Webinar

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What is Pediatric Diabetes?

Pediatric patients can develop Type 1 or Type 2 diabetes

Type 1 Diabetes (T1DM)

Type 1 diabetes is an autoimmune disorder which destroys insulin producing beta cells meaning they are fully insulin dependent



Causes & Risk Factors

Exact cause is unknown; risk factors include genetics, family history, race, and environmental



Age of Diagnosis

T1DM typically develops in children and teens; common age ranges for diagnosis are **4 to 7** and **10 to 14**.¹



Treatment

Patients are **fully insulin dependent** and rely on either insulin injections or a pump to administer. CGMs also play an important role.

Type 2 Diabetes (T2DM)

Type 2 diabetes is a condition where the body is either not making enough insulin and/or where the body has become insulin resistant.



Causes & Risk Factors

Risk factors include **weight, inactivity, diet, genetics and race**.



Age of Diagnosis

Typically develops in **early teens but can occur at any age**



Treatment

Healthy eating, exercise, insulin or other **antidiabetic** medications, regular blood sugar checks

1. Type 1 diabetes: Causes, symptoms, Complications & Treatment. Cleveland Clinic. (2024, May 8). <https://my.clevelandclinic.org/health/diseases/21500-type-1-diabetes>

PDM in the US – Why Raising Awareness About PDM is Important

More than 350,000 children and adolescents under the age of 20 are living with diabetes in the US today¹

Increasing Prevalence of Type 1 and Type 2 Diabetes

*It is projected that there will be an increase in prevalence of both **Type 1 (65%)** and **Type 2 (673%)** over the **next 35 years.**²*

Lifestyle Trends Accelerating Growth of Diagnoses

*Growing obesity epidemic and sedentary lifestyles playing a role in the increased rate of **Type 2 diagnoses.***

Racial and Ethnic Disparities with Treatment

Stark inequities exist in areas such as access to insulin pump therapy, hypo/hyperglycemic events and A1C levels.³

1. Statistics about Diabetes. American Diabetes Association. (n.d.). <https://diabetes.org/about-diabetes/statistics/about-diabetes>

Bloomgarden Z, Rapaport R. Diabetes trends in youth. *Journal of Diabetes*. 2023;15(4):286-288. doi:10.1111/1753-0407.13382 Steven M. Willi, Kellee M. Miller, Linda A. DiMeglio, Georgeanna J. Klingensmith, Jill H. Simmons, William V. Tamborlane, Kristen J. Nadeau, Julie M. Kittelsrud, Peter Huckfeldt, Roy W. Beck, Terri H. Lipman, for the T1D Exchange Clinic Network; Racial-Ethnic Disparities in Management and Outcomes Among Children With Type 1 Diabetes. *Pediatrics* March 2015; 135 (3): 424-434. 10.1542/peds.2014-1774

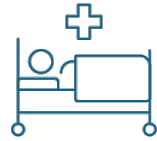
Needs and Challenges of Pediatric Diabetes Patients

Pre-Diagnosis



Matt is 10 yo and has been experiencing excessive urination, extreme thirst, abdominal pain and loss of appetite.

PDM Diagnosis



His parents take Matt to the hospital upon noticing these symptoms. He is diagnosed with Type 1 diabetes.

Medication & DME Education



Matt and his parents meet with a diabetes educator for 2 hours to discuss how to inject insulin. The educator recommends that Matt also start on a CGM.

Post-Discharge



Matt and his parents leave the hospital with new prescriptions and instruction for insulin injection feeling overwhelmed.

Support Network



Matt's parents need to inform Matt's teachers, school nurses, counselors, and babysitters about his new diagnosis.

Daily PDM Management



Matt's schedule is packed with activities – baseball, marching band, and gymnastics.

Challenges Situations

Matt's mother started to notice these symptoms, but it was **difficult** for Matt to **communicate about his discomfort**.

No one in Matt's family has Type 1 Diabetes and the family has very **limited knowledge about the disease state**.

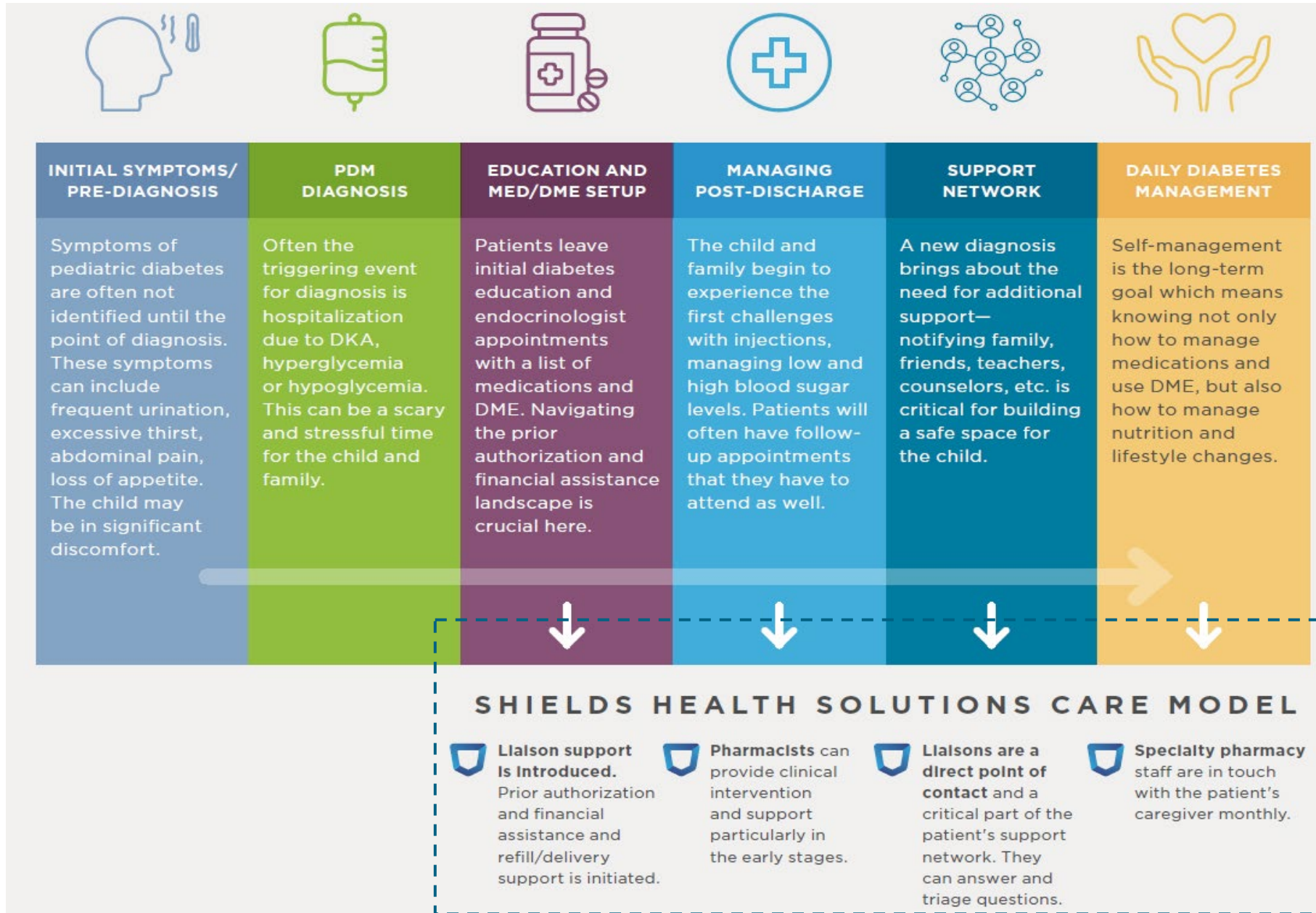
Matt has **needle phobia** and would like to use a CGM and insulin pump. However, the family is daunted by the process of getting this technology.

Matt's parents have been **up at all hours throughout the night** trying to support Matt's blood sugar management.

Matt feels **embarrassed and overwhelmed by his new diagnosis** and does not like to answer questions from his classmates or adults at school.

Matt finds himself frequently with **low blood sugar levels** because of all his activities.

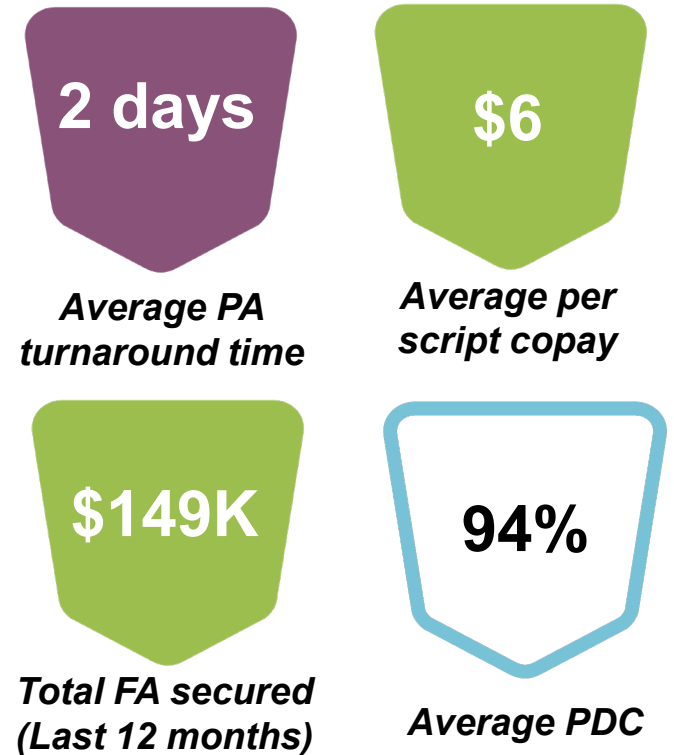
Health System Specialty Pharmacy (HSSP) Integration



Health System Specialty Pharmacy (HSSP) Impact

Pharmacy liaisons support patients and families navigating pharmacy-related challenges

The Shields Impact



Prior Authorization



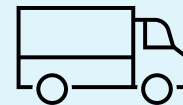
Pharmacy liaisons will submit any prior authorizations for medications or DME that the patient requires.

Financial Assistance



Financial assistance options are always investigated for the patient.

Monthly Refill and Delivery Coordination



Through proactive monthly refill calls, liaisons help patients stay adherent to their medications.



Patient Profile

- Veronica, Type 1 Diabetes
- Diagnosed at 6 years old
- Family history of diabetes
- Needle-phobia

The Integrated HSSP Experience

- ✓ Dexcom G7 CGM
- ✓ Supplies shipped directly to home (same or next day)
- ✓ Proactive outreach for insulin refills
- ✓ Reduced overall stress

Technology in PDM

CGMs



Insulin Pumps



Smart Pens



Key Characteristics/ Current State

Key Products: Dexcom G6/G7; Freestyle Libre 2 & 3

- ✓ Increase in adoption over the last decade¹
- ✓ Allows for parents and other caregivers to monitor their child's blood sugar levels
- ✓ Integration with multiple pumps

Key Products: Omnipod; Beta bionics pump (approved for ages 6+)

- ✓ Increase in adoption over the last decade³
- ✓ Replaces need for injection
- ✓ Closed loop Automated Insulin Delivery (AID)
- ✓ Improved time in range (TIR)

Key Products: InPen, Tempo Pen

- ✓ Helps track injection frequently and confirm volume of insulin delivered
- ✓ Connects with Guardian and Dexcom CGMs or Bluetooth-enabled glucometers
- ✓ Reusable

Pipeline/Future State

- ✓ Biowearable for glucose AND ketones²

- ✓ Integration of glucagon with insulin pumps

- ✓ No near-term developments

1. Fang M, Xu Y, Coresh J, Ballew S, Selvin E, Shin J. 1444-P: Trends and Disparities in Continuous Glucose Monitoring Use in U.S. Youth and Adults with Type 1 Diabetes—2008–2022. Diabetes. 14 June 2024; 73 (Supplement_1): 1444–P. <https://doi.org/10.2337/db24-1444-P> 2. <https://www.abbott.com/corpnnewsroom/strategy-and-strength/abbotts-biowearable-one-sensor-for-glucose-ketones.html> 3. Gandhi K, Ebekoziem O, Noor N, McDonough RJ, Hsieh S, Miyazaki B, S Dei-Tutu, Golden L, Desimone M, Hardison H, Rompicherla S, Akturk HK, Kamboj MK, T1D Exchange Quality Improvement Collaborative. Insulin Pump Utilization in 2017–2021 for More Than 22,000 Children and Adults With Type 1 Diabetes: A Multicenter Observational Study. Clinical Diabetes. 15 January 2024; 42 (1): 56–64. <https://doi.org/10.2337/cd23-0055>

Therapy Updates

Gene/Cell Therapy & Other Diagnostics for Type 1 Diabetes

T1D Screening

- ✓ Detects the presence of **autoantibodies**
- ✓ Recommended for those with a **first-degree family member** with T1D
- ✓ TrialNet¹

Tziel (teplizumab-mzwv)²

- ✓ **Delay onset** of Stage 3 T1D (clinical diabetes)
- ✓ Daily infusion for 14 days

Lantridra (donislecel-jujn)³

- ✓ Allogenic pancreatic **islet cellular therapy**
- ✓ Currently approved for adult patients

Type 2 Diabetes Updates

T2D in Pediatrics

- ✓ Incidence has increase from **9.0 to 17.9 cases per 100,000** per year⁴

Obesity in Pediatrics

- ✓ **Incidence** has increased **tripled**
- ✓ As many as **1 in 5 children** is classified as obese⁵

GLP1 & SGLT2 Inhibitors

- ✓ **Increased prescribing** volume amongst PDM patients

1. Type 1 Diabetes Trialnet (2018). <https://www.trialnet.org/>

2. Tziel. Sanofi (2022). <https://products.sanofi.us/tziel/tziel.pdf>

3. Lantidra. CellTrans (2023). <https://www.fda.gov/media/169920/download>.

4. Pinhas-Hamiel O, Zeitler P. Type 2 Diabetes in Children and Adolescents- A Focus on Diagnosis and Treatment. [Updated 2023 Nov 7]. In: Feingold KR, Anawalt B, Blackman MR, et al., editors. Endotext [Internet]. South Dartmouth (MA): MDText.com, Inc.; 2000-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK597439/>

5. Managing Obesity in Schools. US Center for Disease Control and Prevention (n.d.) https://www.cdc.gov/school-health-conditions/chronic/obesity.html?CDC_AAref_Val=https://www.cdc.gov/healthyschools/obesity/index.htm

Conclusion

- ✓ Increasing prevalence of both Type 1 and Type 2 diabetes in pediatric patients is cause for concern
- ✓ A new Type 1 diabetes diagnosis changes the life of the patient and their family
- ✓ HSSP supports pediatric patients living with diabetes through PA/FA support, refill and delivery coordination which removes pharmacy burden from already stressed child and family
- ✓ Advancements in diabetes technology are key to improving patient lives
- ✓ Early integration of an HSSP care model for a patient living with pediatric diabetes can help set them up for long-term, effective self management and support
- ✓ Screening tools are available therapies available to help delay progression or even cure T1D in some cases

QUESTIONS?