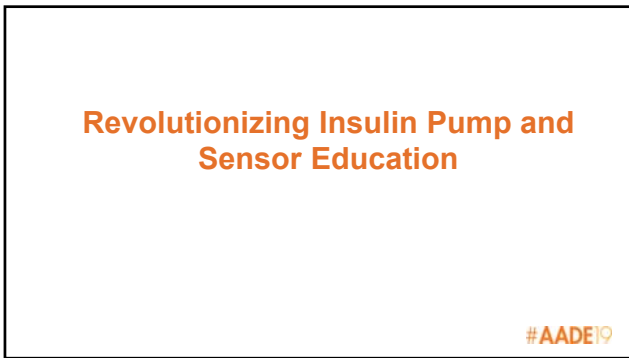
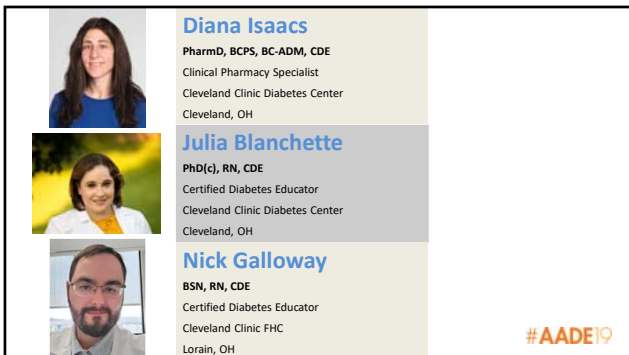


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3

Learning Objectives

1. Describe the optimal process to prepare people with diabetes (PWD) for insulin pump and sensor therapy.
2. Discuss the benefits of peer support and shared appointments when utilizing newer diabetes technology.
3. Provide practical pearls for educating and supporting the PWD with newer technology.

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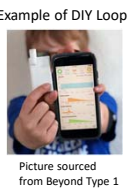
Disclosure to Participants

- Notice of Requirements For Successful Completion
 - Please refer to learning goals and objectives
 - Learners must attend the full activity and complete the evaluation in order to claim continuing education credit/hours
- Conflict of Interest (COI) and Financial Relationship Disclosures:
 - Presenter: Diana Isaacs, PharmD, BCPS, BC-ADM, CDE –speaker, Abbott
 - Presenter: Julia Blanche, PhD(c), RN, CDE- clinical consultant/financial- Tandem Diabetes, clinical consultant/financial- Dexcom
 - Presenter: Nick Galloway, BSN, RN, CDE- No COI/Financial Relationship to disclose
- Non-Endorsement of Products:
 - Accredited status does not imply endorsement by AADE, ANCC, ACPE or CDR of any commercial products displayed in conjunction with this educational activity
- Off-Label Use:
 - Participants will be notified by speakers to any product used for a purpose other than for which it was approved by the Food and Drug Administration.

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Insulin Pump Options



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CGM Options



Medtronic
Guardian
Connect



Freestyle Libre
14 Day



Dexcom
G5

Dexcom
G6



Eversense



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What is (NOT) the optimal process to prepare people with diabetes (PWD) for insulin pump and sensor therapy?


Insulin Pump Training Pitfalls

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Information Overload

- Adults focus on relevant information
- Too much information that is not useful is confusing, overwhelming
- Focus on the priorities of the training
- Provide follow-up for other areas



Knowles, M. S., Holton III, E. F., & Swanson, R. A. (2012). *The adult learner*. Routledge.

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Communication

Coordinating insulin pump settings?
 Who does the training?
 Who ensures the patient is ready?
 Who will follow-up?

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Realistic Expectations

- “Set it and forget it”
- “It’s an artificial pancreas”
- “You never have to do a fingerstick again”
- “It will prevent all your lows”
- “Your A1C will be guaranteed to be below 7%”

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Forgetting Key Educational Points

- Prescription for insulin vials
- Adhesive
 - Skin sensitivities
 - Options to help it stay on
 - Infusion set options
- Lag time
- When to remove or change
- Where to wear
- Understanding calibration limitations
- When to confirm with fingerstick
- Interfering substances (acetaminophen-some CGMs)

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Patient Cases

When Good Intentions Go Awry

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The Importance of Pre-Pump Training




Shannon contacted Omnipod before telling her provider and received her order. She has an appointment with her CDE to start the pump.

- Before appointment, the CDE triaged her, wrote down her insulin requirements and instructed her on what to bring to the appointment.
- Shannon uses ~95 units of insulin a day
- Was shocked to learn she has to change pods every 1.5-2 days.
- Shannon also doesn't understand how the pump calculates insulin.

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Education Needs Before Pump Upgrade



Nancy was so excited to find out that she was eligible to upgrade to the Omnipod DASH! She goes to her CDE for DASH training.

- Nancy brought pods from an already opened box to training
- Disappointed to learn that DASH is only compatible with the new pods (blue cannula tab) and not old pods (clear cannula tab)
- Felt overwhelmed about using up old pods with old PDM
- Needed help ordering new pods from her pharmacy (new process)

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Caution With Transferring Pump Settings



Jack upgraded from a Medtronic 530g to a 670g by an out of health-system trainer. The doctor's orders said to transfer settings from the old pump. At follow-up CDE visit:

- On previous pump, Jack only gave manual boluses
- Carb ratio is outdated
- Jack stays high after eating and cant stay in auto mode

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The Importance of Continued Follow-Up



Nick's 6-Month Endocrinologist Visit:

- First 3 months: Automode 72% of the time
- Last 3 months: Automode 0% of the time
- Reports automode asks for too many calibrations and he is kicked out frequently from reaching max basal
- Feels the system is disruptive, causing lack of sleep and frustration

Could this have been prevented?

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Unusual Situations



Oliver comes to clinic and is excited to be DIY Looping!

- Oliver's provider supports Loop
- Time-in-range: 75%
- Post-prandial spikes
- Overnight hypos
- Can't figure out how to make adjustments
- **Wants to keep using DIY Loop but needs help**

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Ongoing Support Needed to Reduce Frustrations



Sandy is so excited about her Tandem X2 with basal IQ! But... at her two week follow-up CDE visit:

- Still having some lows
- Goes low every time she changes out the infusion set
- Infusion set keeps kinking
- Kids pull at it

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What to Carry?

- Lisa was excited to get a Freestyle Libre and not have to poke her fingers
- She has an Android phone which she later learned is not compatible
- She has already misplaced 2 of the readers
- She bought the wrong test strips and doesn't want to also carry her meter



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Introducing A More Optimal Insulin Pump/Sensor Training Model

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Benefits of Peer Support

Psychosocial support

- More time with others who have diabetes and the providers
- Encouragement and empowerment
- Group validation
- Shared group problem solving

Outcomes

- Gain knowledge
- Increase in self-management behaviors
- HbA1c reduction
- Less likely to have hospitalizations for acute diabetes complications
- Improved mental health
- Improved attitudes towards diabetes
- Improved quality of life

Davis, A. M., Sawner, D. R., & Vinci, L. M. (2008). The potential of group visits in diabetes care. *Clinical diabetes*, 26(2), 18-62.
 Hesse, J., Couch-Thiele, K., Winter, J.C., et al. *Can J Public Health* (2014) 105:418-419. <https://doi.org/10.1007/s00143-014-0409-7>
 Tremblay, M., Paisson, P., Borge, E., Tomalino, M., Bagard, M., Brucicchini, A., & Bordonio, P. (2005). A 3-year prospective randomized controlled clinical trial of group care in type 2 diabetes, hypertension, metabolism and cardiovascular diseases. *Diabetologia*, 48(4), 303-301.



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Preparing the Program

- Meet with insulin pump reps for resources/education/interpreting reports
- Educators demo all insulin pumps and CG
- Educators become certified trainers
- Set up contracts for reimbursement
- Train your patients
- Utilize in-person, virtual visits and technology for follow-up and insulin pump adjustments



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Pre-Pump Class

- Free class to learn about different CGM and insulin pump options
 - Unbiased device review
- Basics of insulin pumps:
 - Basal vs. bolus
 - Sensitivity
 - Carbohydrate ratio
 - Assess carbohydrate counting skills and readiness for the insulin pump
- Next step: Individual DSME or dietitian
- Trial a CGM
 - Also helps with insulin adjustments



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Introducing the CGM Shared Medical Appointment Experience

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CGM Shared Medical Appointments (SMA)

2 Part Shared Appointment

5 (10) classes/ Month

Professional CGM worn for 7 days

2 Choices

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CGM SMA Structure

1st Appointment

- Primary goal: Education and device insertion
 - Blood glucose and A1c targets
 - Use of CGM device
 - "Do's and "don'ts"
 - Calibration instructions
 - Food, activity, and medication log
- Length: 60 minutes

2nd Appointment

- Primary goal: CGM download and discussion
 - Successes and challenges
 - Review/interpret CGM data with food log
 - Provide lifestyle/medication recommendations
- Class length: 90 minutes







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Education Tools

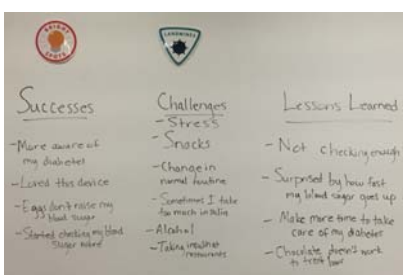
- Conversation maps
- CGM spaghetti graphs
- Taking pictures of meals during the week
- Food models-creating healthy meals and snacks ideas
- Sick day supply kit
- Recipe binders

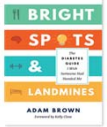






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Discussion from a CGM Class





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Cost & Revenue

Cost of Supplies

- Dexcom G4 kit ~\$800
- IPro2 system + 5 sensors ~\$999
 - Multiple patient uses/system
 - 1 patient at a time
- Freestyle Libre reader: \$65
 - Multiple patient uses/system
 - Multiple patients at a time
- Product specific sensors needed for all systems ~\$60/sensor

Revenue

- Medicare: \$193.30
- Private: \$395
- Profit:
 - Subtract \$60 sensor
 - \$133-\$335/patient
 - \$665-\$1675 for 5 patients
 - Up to \$8375 for 25 patients

Why aren't we doing more Professional CGM? #AADE19

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Professional → Personal CGM

- Determine insurance eligibility
 - Ex. Medicare: MDI, checking BG 4x daily
- Pharmacy vs. DME benefits vs procedure (Eversense)
- Chart provided to patients comparing the 4 personal CGM options
- Brochures provided to patients with rep contact information
- On the shelf CGM free trials
- Personal CGM interpretation shared appointment

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Insulin Pump Group Trainings

- Groups up to 4 starting the same insulin pump
- Optimal with at least 2 facilitators
- Peer support
- Time efficient
- **Tip: Careful when pairing devices with multiple patients**
- Protocol for insulin pump adjustments after training by diabetes educators

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Pump it Up Class

- Free class for insulin pump follow-up
- 1 hour class offered weekly
 - 15 minute topic
 - Open for questions
 - Insulin pumps downloaded
 - Pump adjustments made

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Virtual Visits

- Diabetes education
- Insulin pump adjustment
- CGM interpretation

Increase Efficiency and Lower Costs

Stay Current With Patient Expectations

Expand Patient Access

Prepare Capabilities for Future of Healthcare

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Case Study: Max

- Max is a 27yoM with type 1 DM x 2 years. A1c=8.4%
- Meds: Insulin glargine 24 units daily, insulin aspart 1 unit for 15g CHO
- He is interested in learning more about technology
- He attends pre-pump class
- He wants a hybrid closed loop system, but isn't confident with his carbohydrate counting skills
- He meets every 2 weeks with the diabetes educator
- During this time, he attends the CGM SMA
- After 2 months, Max is ready
- The diabetes educator helps Max contact the insulin pump company and discusses with Max's endocrinologist

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Case Study: Max (Continued)

- The diabetes educator sees Max in the online portal and schedules his training once his supplies are shipped
- Insulin pump settings are created and sent to endocrinologist for approval
- Insulin vials ordered
- Max comes to a group training
 - Insulin pump (1st visit)
 - CGM (2nd visit)
 - Auto mode (3rd visit)
- Training documents submitted for reimbursements

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Case Study: Max (Follow-Up)

- Weekly “Pump it Up” for ongoing education and troubleshooting for 1 month post auto mode
- Next endocrinologist appointment, Max’s A1C=6.7% and he raves about his diabetes educator
- Attends monthly virtual visits to review CGM and insulin pump data with diabetes educator
- Continues to see endocrinologist every 3-6 months

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Diabetes Support Group

- Meets once a month at Panera Bread
- Facilitated by a CDE
- Open group in Northeast Ohio
 - Adults with T1D and their partners
 - Seen at any healthcare system
 - Everyone has a chance to speak
 - Group provides tips, support, feedback
 - CDE intervenes to moderate, rarely about unsafe medical advice
- Speakers each month, topics of interest
 - Other CDEs
 - PWD
 - Pump/CGM reps



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Clinical Pearls for Supporting the PWD with Technology

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Insulin Pump/CGM: Preparation

Assess PWD's Self-Management Knowledge

- BG checking and targets
- Logging (BG, food, insulin, activity level)
- Hypoglycemia detection & treatment
- Sick day management
- DKA prevention
- Carbohydrate counting skills

Provide Education

- Self-management (areas needed)
- Insulin pump: operation, infusion sets, maintenance, troubleshooting
- Calculate basal insulin rates, ICR, ISF
- What to bring to training
- What to expect for training and follow-up process
- Ordering supplies

Assess Emotional Readiness

- Is starting a pump or CGM too overwhelming?
- Will one be able to problem solve independently?
- What psychosocial support is needed before starting?

Grunberger, G., Abalseth, J., Bailey, T., Bode, B., Handelsman, Y., Hellman, R., & Rothermel, C. (2014). Consensus statement by the American Association of Clinical Endocrinologists/American College of Endocrinology insulin pump management task force. *Endocrine Practice*.

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Additional Considerations

- Dexterity
- Visual acuity
- Lifestyle
- Insurance coverage and/or financial costs
- Attachment to a medical device
- Technology savvy*
- Willingness to change routines

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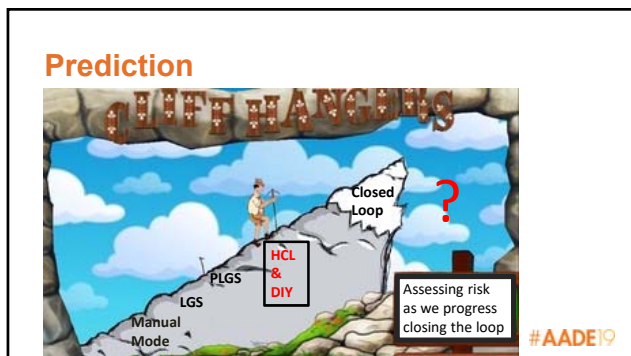
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Provider Referral

- Provider education
 - Technology buy in
- Selling services
 - Promote DSME services to assist with technology onboarding and vice versa

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Informed Decision

- Pre-pump/CGM class or individual visit with educator
- Reference product websites, literature, or reputable third party sites for additional product info
- Remove personal biases as much as possible, but attempt to share clinical insight with each available product
- Utilize product representatives as additional resource
- **Failure is an option...but intervene with serious safety concerns**
 - respect a person's autonomy... even when your mind is screaming DON'T CHOOSE THAT!

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CASE STUDIES

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Case #1: Quality of Life

- 50 y/o male, T1DM 19+ yrs, pancreas transplant 2007-rejected
- New to pump therapy for 7 months
–previously MDI
- Per provider note:
– *“Has issues linking CGM Medtronic to his 670-G insulin Pump: he does not know how to use his pump (It beeps all the time) , + knowledge deficit, batteries lasting only 3 days due to beeping all the time. + alarm fatigues”*

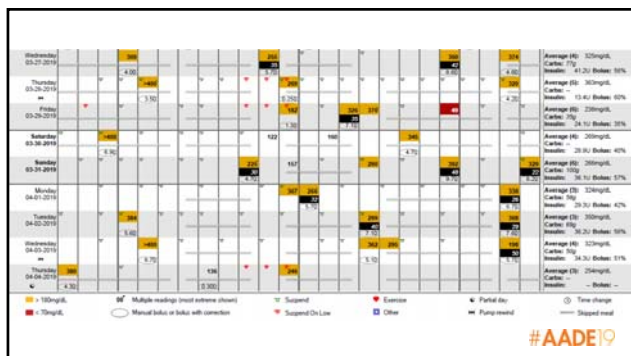
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Patient ID	Demographics		Diabetes Events				Pump Events				Total Events
	Age	Gender	Diabetes Type	Diabetes Duration	Diabetes Complications	Pump Type	Pump Duration	Pump Complications	Pump Duration		
101-01-001	50	M	1	19	0	0	0	0	0	0	0
101-01-002	50	M	1	19	0	0	0	0	0	0	0
101-01-003	50	M	1	19	0	0	0	0	0	0	0
101-01-004	50	M	1	19	0	0	0	0	0	0	0
101-01-005	50	M	1	19	0	0	0	0	0	0	0
101-01-006	50	M	1	19	0	0	0	0	0	0	0
101-01-007	50	M	1	19	0	0	0	0	0	0	0
101-01-008	50	M	1	19	0	0	0	0	0	0	0
101-01-009	50	M	1	19	0	0	0	0	0	0	0
101-01-010	50	M	1	19	0	0	0	0	0	0	0
101-01-011	50	M	1	19	0	0	0	0	0	0	0
101-01-012	50	M	1	19	0	0	0	0	0	0	0
101-01-013	50	M	1	19	0	0	0	0	0	0	0
101-01-014	50	M	1	19	0	0	0	0	0	0	0
101-01-015	50	M	1	19	0	0	0	0	0	0	0
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101-01-050	50	M	1	19	0	0	0	0	0	0	0

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Utilities	
Block Mode	Off
Time Format	12 Hr
Brightness	Auto
Backlight Timeout	60 s
Remote Bolus	On
Audio Options	Audio & Vibrate
Alarm Volume	5
Auto Suspend	2:00

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Case #2: Follow Up DSME

- 36 y/o male
- Wants very tight control

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Pump Settings

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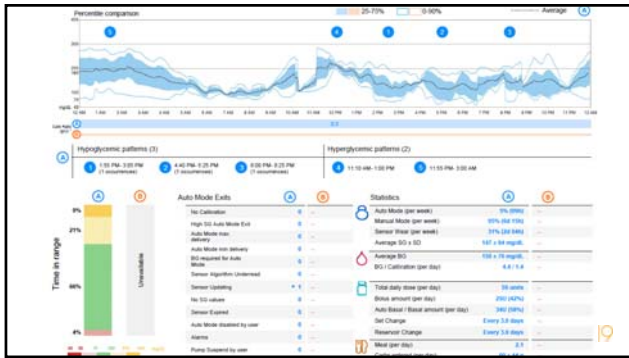
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Case 3#: Advocate

- 49 y/o female, LADA at age 24
- Add'n Hx: CKD stage 2, severe peripheral neuropathy, obesity, HTN, & anxiety
- Transition from Libre/Minimed Revel to 670G
- Labile glucose control and frequent hypoglycemia
- UHC insurance, lives alone, sedentary but high stress job, only family in area is mother ~1.5 hrs. away

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Summary

- There are many ways to do sub-optimal insulin pump and CGM training.
- A successful program includes innovative education, peer support, and close follow-up.
- Practical pearls include setting realistic expectations, having good team communication, and always having a back-up plan.

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