Revolutionizing Insulin Pump and Sensor Education
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.

Disclosure to Participants

- Notice of Requirements For Successful Completion
  - 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 Blanchette, 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, ARNP, ACEND or CDA 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

Insulin Pump Options

Medtronic 630G & 670G
Tandem X2
Omnipod DASH
Tandem X2
Omnipod
Example of DIY Loop
Picture sourced from Beyond Type 1
What is (NOT) the optimal process to prepare people with diabetes (PWD) for insulin pump and sensor therapy?

Insulin Pump Training Pitfalls

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

Communication

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

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%”

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)
Patient Cases

When Good Intentions Go Awry

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.

The Importance of Pre-Pump Training

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)
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 can’t stay in auto mode

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?

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 hypoglycemia
- Can’t figure out how to make adjustments
- Wants to keep using DIY Loop but needs help
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

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

Introducing A More Optimal Insulin Pump/Sensor Training Model
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

Preparation of 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

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
Introducing the CGM Shared Medical Appointment Experience

CGM Shared Medical Appointments (SMA)

2 Part Shared Appointment
5 (10) classes/Month
Professional CGM worn for 7 days

2 Choices

Patients (4-6)
Diabetes Educator (Nurse or Dietician)
Pharmacist

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
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

Discussion from a CGM Class

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?
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

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

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
Virtual Visits

- Diabetes education
- Insulin pump adjustment
- CGM interpretation

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

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
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

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

Clinical Pearls for Supporting the PWD with Technology
Insulin Pump/CGM: Preparation

Assess PWD's Self-Management Knowledge
- BG checking and targets
- Logging (BG, diet, insulin, activity level)
- Hypoglycemia detection & treatment
- Sick day management
- DMA prevention
- Carbohydrate counting skills

Provide Education
- Self-management (areas needed)
- Insulin pump: operation, infusion sets, maintenance, troubleshooting
- Calculate basal insulin rate, 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?

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

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

Assessing risk as we progress closing the loop

Interprofessional Team & Responsibilities

Provider
- Assess and consult(s) appropriate services
- Elicit appropriate technology readiness
- Evaluate CGM/pump reports and implement changes in plan of care

Diabetes Educator
- Assessment, technology readiness and implement DSME
- Technology trainer (CGM or insulin pump systems)
- Closed Loop report patient management

Dietitian
- Assess CGM pump technology reports and pump pattern management
- Meal planning with identified glycemic trends
- Provide additional MNT education

Pharmacist
- Pharmacological management and/or consult additional services (Dietitian or CDE)
- Assessment, technology readiness and implement DSME
- Technology trainer (CGM or insulin pump systems)
- Closed Loop report patient management

PWD
- Utilizing Technology

*Requires appropriate provider–pharmacist consult agreement

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!
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”
Case #2: Follow Up DSME

- 36 y/o male
- Wants very tight control
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
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.