

# **Blood Glucose Monitoring and Interpreting A1C Values**

Didactic lectures, case studies, and hands-on training for blood glucose (BG) monitors and interpreting hemoglobin A1c (A1C) values.

## **Session 1: CLINICAL NEED**

1. Benefits of self-monitored blood glucose (SMBG) in insulin-treated patients with diabetes
2. Benefits of SMBG in non-insulin treated patients with type 2 diabetes
3. Comparing BG monitor results to A1C
4. Calculating estimated average glucose
5. Assisted monitoring of blood glucose
6. Atypical patterns of hemoglobin glycation

## **Session 2: TECHNOLOGY**

1. The science behind BG monitors
2. Accuracy standards for glucose and A1C
3. Interfering substances for BG monitors
4. Control solution
5. Performing SMBG comfortably to obtain an adequate sample
6. Alternate site testing for glucose testing
7. Downloading and evaluating BG monitor data
8. Methods for point-of-care A1C testing

## **Session 3: APPLICATIONS (CASE STUDIES)**

1. Testing frequency and timing
2. Pattern analysis of glycemia
3. Structured testing
4. Ideas for adjusting insulin, diet, exercise, and medications
5. Motivating patients to test
6. Identifying glycemetic patterns with software
7. Using A1C to diagnose diabetes

## **Session 4: HANDS-ON TRAINING**

1. Disinfecting a BG monitor
2. Using BG monitors with control solution and setting codes
3. Event recording and use of embedded software
4. Analyzing patterns of glycemia
5. Working with algorithms for titrating insulin
6. Examples of software for recording and analyzing BG monitor data

# Continuous Glucose Monitoring

Didactic lectures, case studies, and hands-on training for continuous glucose monitoring (CGM).

## **Session 1: CLINICAL NEED**

1. Physiology of interstitial fluid glucose
2. Comparison of CGM and self-monitored blood glucose (SMBG) data
3. Protection from nocturnal hypoglycemia
4. Glycemic variability
5. Evidence review and major studies
6. Endocrine Society and American Association of Clinical Endocrinology clinical guidelines

## **Session 2: TECHNOLOGY**

1. The parts of both a real-time and a professional CGM system
2. Starting and running a CGM program
3. Choosing the right device for each patient
4. Insertion and set-up
5. Trend information
6. Alarms
7. When to calibrate
8. Troubleshooting a CGM

## **Session 3: APPLICATIONS (CASE STUDIES)**

1. Downloading data to a computer
2. Identifying patterns of glycemia
3. Determining glycemic variability
4. Adjusting insulin dosing using CGM
5. Adjusting diet and exercise using CGM
6. Avoiding insulin stacking
7. Motivating patients by using CGM

## **Session 4: HANDS-ON TRAINING**

1. Site selection and sensor insertion
2. How to calibrate
3. Device set-up
4. Understanding screens and interpreting on-screen reports
5. Selecting and setting alarms
6. Reading software reports of CGM data

# **Insulin Delivery: Pumps & Pens**

Didactic lectures, case studies, and hands-on training for insulin delivery via pumps and pens.

## **Session 1: CLINICAL NEED**

1. Overview of types and features of insulin pens
2. Indications for pump therapy
3. Outcomes of pump use compared with multiple daily injections
4. The pump initiation and training team
5. Patient characteristics for successful pump use
6. Insulin pump use in the hospital

## **Session 2: TECHNOLOGY**

1. The parts of a pump
2. Display screen information
3. Alerts and alarms
4. Infusions sets and needles
5. Patch pumps and controllers
6. Sensor-augmented pump
7. Emerging closed-loop technology
8. Troubleshooting a pump

## **Session 3: APPLICATIONS (CASE STUDIES)**

1. Determining total daily insulin doses
2. Determining and adjusting basal doses
3. Determining bolus doses
4. Calculating the insulin-carbohydrate ratio (ICR)
5. Calculating the insulin sensitivity factor (ISF)
6. Calculating insulin on board (IOB) and avoiding stacking
7. Choosing the right pump for each patient

## **Session 4: HANDS-ON TRAINING**

1. Insertion technique
2. Setting up basal and bolus doses
3. Programming the ICR
4. Programming the ISF
5. Setting alarms and alerts
6. Troubleshooting