Diabetes Data Management in Clinic Setting

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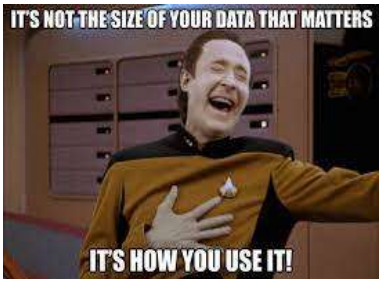
Objectives

- List key points in patient onboarding of diabetes technology
- Discuss barriers to diabetes data management in clinic setting
- Discuss practical implementation considerations of diabetes data in clinic setting.
- Define technical information about data, data structure, and interoperability
- Compare and contrast three diabetes data management platforms.

Diabetes Device Market

- Valued at 20.92 billion in 2018, projected to reach 33.55 billion by 2026
- A CAGR of 6.1%
- Top Players: Roche, Medtronic, Abbott, Dexcom, Tandem
- North America is projected to hold the highest market share
- CMS expanded CGM coverage to people with type 2


IT'S NOT THE SIZE OF YOUR DATA THAT MATTERS
IT'S HOW YOU USE IT!

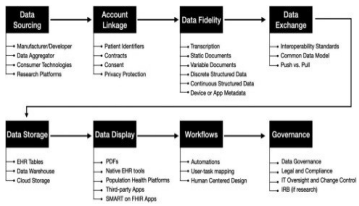

SO MUCH DATA
SO LITTLE TIME

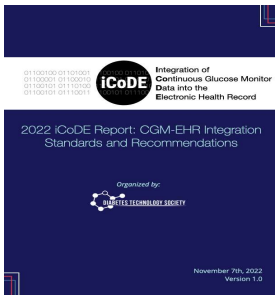
Data Barriers

"The ability of a system to exchange electronic health information with and use electronic health information from other systems without special effort on the part of the user"

Ideal Scenario

Barriers to Electronic Health Record Integration





https://www.diabetestechnology.org/icode/

iCoDE Work Groups

1. Data Standards
2. Account Linkage
3. Integration and interoperability
4. Analytics and visualization
5. Workflows
6. Contracting, Partnerships, Project management, business models

iCoDE Data Set

Minimum Dataset

- Number of days CGM worn
- % of time CGM is active
- Mean glucose
- Glucose Management Indicator
- Glycemic variability
- % of readings and time >250 mg/dl
- % of readings and time 181-250 mg/dl
- % of readings and time 70-180 mg/dl
- % of readings and time 54-69 mg/dl
- % of readings and time < 54 mg/dl
- Ambulatory Glucose Profile (AGP_

Expanded Dataset

- Minimum Dataset metrics
- Device identifiers (serial numbers)
- CGM settings
- Software/firmware version
- Sensor/Transmitter status
- Calibrations
- Events, human annotations
- Reference ranges
- Alarms
- Performance data (errors, failures, gap in data)
- Insights - recommendations for care
- User identification

Recommendations

- Healthcare organizations should pursue CGM-EHR integration in a way to improve patient care, documentation, clinical workflows, and overall quality and outcomes
- Patients retain the right to make decisions about their health data, how it is used and for what purpose.
- Patients should be able to view what institutions are accessing their data and should be able to "disconnect" from their data sources, particularly during care transitions.
- CGM manufacturers should develop, maintain, and expand the technical infrastructure necessary to make CGM data available for EHR integration.
- Healthcare organizations should establish minimum core professional competencies for team members using diabetes technology in patient care.

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SAGE journals

Departments - The Association of Diabetes Care and Education Specialists

Professional Competencies for Diabetes Technology Use in the Care Setting

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Purpose: The integration of diabetes technology into diabetes care and self-management is evolving so rapidly that providing sufficient support has become an obstacle for many health care professionals (HCPs) in practice. Diabetes technology requires HCPs to stay current with treatment goals and practice guidelines. Diabetes care and education specialists (DCESs) are well positioned to take on this challenge by seizing opportunities to apply their skills, knowledge, and experience to contribute to a technology-enabled practice environment. Diabetes technology includes devices, hardware, and software utilized to manage all aspects of diabetes care, including lifestyle management, glucose monitoring, and insulin delivery. The complexities of caring for persons with diabetes (PWD) who utilize diabetes technology is best accomplished in partnership with other members of the care team and support staff to cover all aspects of technology including prior authorizations, onboarding PWD, downloading and interpreting data, and supporting ongoing utilization. The purpose of this article is to introduce a comprehensive set of role-based competencies for HCPs, DCESs, and staff for the selection, implementation, and sustainability of diabetes technology when providing diabetes care, education, and support. The role-based competencies described in this article are intended to support the initiation, continuation, and optimal use of diabetes technology in practice through ongoing education and guidance of care team members.

Conclusion: This article describes the diabetes technology competencies essential for all levels of the care team and support staff in various care settings to deliver comprehensive diabetes management and support to PWD utilizing diabetes technology in their self-care regimen.

Roles	Licensure, Certification	Specialty Care, Adult and Pediatric (Outpatient and Inpatient settings)	Primary Care, Adult and Pediatric (Outpatient and Inpatient Settings)	Other Settings*
Prescriber	MD, DO, PA, NP, PharmD (if applicable, depending on state lic.), medical director of a diabetes specific camp.	Advanced Technology Competencies	Intermediate Technology Competencies	Intermediate Technology Competencies
DCES	DCES who might be CDCES and/or BC-ADM	Advanced Technology Competencies	Intermediate Technology Competencies	Intermediate Technology Competencies
Licensed Non-DCES-Group 1	RN, PharmD, RD, School Nurse, Diabetes Camp Nurse; Camp Healthcare Team; Pediatric Psychologist and CMA in Specialty Setting, Care Coordinator/Case Manager, SNF staff, Long Term Care staff; Exercise Physiologist; Physical Therapist; Occupational Therapist	Intermediate Technology Competencies	Fundamental Technology Competencies	Basic Technology Competencies
Licensed Non-DCES-Group 2	MA/LPN; Social Worker, Psychologist in non-specialty setting, virtual coach, retail pharmacist/tech	Intermediate Technology Competencies	Basic Technology Competencies	Basic Technology Competencies
Non-Licensed Staff	Call center staff, schedulers, patient access coordinators, Diabetes Camp/Camp Counselors, Community Health Worker, group home staff, peer support community	Fundamental Technology Competencies	Basic Technology Competencies	Basic Technology Competencies

*Community settings such as schools, camps, long term care facilities, rehabilitation facilities, group homes, home based care etc.

Domains of Diabetes Technology Competencies

- Domain 1: Staff Knowledge
- Domain 2: Device Data
- Domain 3: Glycemic Targets and Diabetes Management
- Domain 4: Patient Education, Preparation for Onboarding and Durability of Use
- Domain 5: Clinical Processes, Billing, and Coding
- Domain 6: Psychosocial
- Domain 7: Schools and Camps

Competencies

Staff Knowledge

- Demonstrate knowledge of meters, CGMs, insulin pumps, and AID systems, including individual components.
- Educate licensed and non licensed staff to assist all PWD to respond to alarms and alerts
- Demonstrate knowledge of diabetes technology to individualize choices for each PWD

Device Data

- Describe the type of data collected by devices
- Apply ability to connect devices to data-sharing platforms or clinic accounts directly or via apps to upload data
- Utilize data-sharing platforms
- Compile device data and upload to EHR

Competencies

Glycemic Targets/DM Management

- Demonstrate basic knowledge of glycemic targets based on the population and setting
- Identify need to set and change individualized BGM
- Utilize AGP data for pattern management

Patient Education/Onboarding

- Identify resources to support continued use of technology
- Utilize patient education curriculum to support safe, competent, and successful engagement with technology
- Create backup pan for insulin pump failure
- Discuss individualized glucose meter, CGM, Smart pen settings, alerts, alarms, and reminders with PWD

Competencies

Clinical Process/Billing/Coding

- Utilize a team approach for technology integration in diabetes care
- Create and utilize a streamlined process for obtaining technology supplies
- Evaluate disparities in technology utilization
- Utilize billing/CPT codes for reimbursement for diabetes technology services

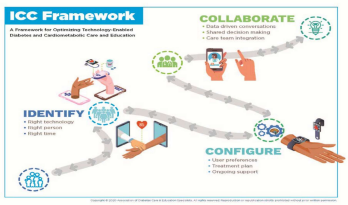
Psychosocial

- Utilize respectful language about diabetes technology
- Evaluate the potential for data overload, burnout, and disengagement of individuals and teams
- Demonstrate knowledge of and refer to peer network or community resources

Competencies Schools and Camps

- Identify personnel to assist child with responding to device alarms and alerts
- Identify device malfunction and identify appropriate times to contact diabetes care team or parent for assistance
- Support the camper with diabetes, including advocating for access to camp Wi-Fi and ability to charge devices, share data per camp policy and obtain support for device use
- Create individualized care plan to implement technology use based on the student's Diabetes Medical Management Plan

Identify-Configure-Collaborate ICC Model



Setting Up a Clinic for Successful Technology Integration

- Identify Champion
- Identify team members
- Define Roles and Responsibilities
- Staff On boarding and Training - Staff Competencies, clinician training
- Identify equipment needed
- Establish Patient Experience Components – New user, Pre-clinic, Clinic, Post-clinic – patient on boarding
- Billing and Coding

		Task by Role		
Events and Time Points	**Time Estimate**	**Patient**	**Clinical Staff**	**Clinician**
Pre-Clinic	5 min	-Reviews checklist -Uploads data -Arrives 30 minutes before scheduled visit -Access support staff assists with uploads	-Reminder is sent to patient to upload data up to 48 hours prior to visit -A number is provided to call tech-support for questions or barriers to uploading data	
Check-In	5 min	-Arrives for appointment -Checks in at front desk	-Checks in patient -Registers in EHR -Verifies if data has been uploaded -Directs to tech support staff or personal device kiosk if data isn't uploaded	
Data Upload	5 min	-Uploads data prior to visit - no further action -Uploads data during check in -Meets with tech support	-Patient devices synced -Assigned to the patient's account.	
Data Request	10 min	-Patient is processed for visit	-Place data pull request in EHR	
Clinical Encounter	45 min	-Visit with clinician		-Access summary report from EHR and review
Check Out	5 min	-Schedules follow up	-Review upload instruction -Print after-visit summary	
Equipment and Space		*-Clinic room -Kiosk -Mobile van -Personal device -Clinic device*	*-Two devices to access web-based upload site and EHR -Private clinic space for data/device support to not delay check in for other individuals -Need two people assigned to each role per day (point person and back up)*	*-Two screens (one with EHR and one with link to trend data)*

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By dreamed

TIDEPOOL

Tidepool

- 501 (c) 3 non-profit organization founded in 2013 by people with diabetes, caregivers and healthcare providers, receives support from JDRF
- Open source - making their code, designs, and regulatory quality systems openly available - to drive innovation and collaboration
- Free for clinicians and patients, HIPPA and GDPR (General Data Protection Regulation) compliant
- Integrates data from multiple devices, meters, CGM, pumps, Inpen, APPs (mySugar, Onedrop)
- Allows for third party software apps to be built on the platform
- Single sign-on, EHR integration, easy to navigate dashboard, copy and past into HER
- Tidepool Web, Uploader, Mobile app
- Tidepool Loop - do-it-yourself automated insulin dosing

Glooko

- Device-agnostic unified platform, meters, CGM, insulin pumps, smart pens, activity trackers
- Collects and aggregates data from multiple sources
- HIPPPA and GDPR ready, FDA cleared digital therapeutic module for long acting insulin titration for type 2 - MIDS
- Mobile App connected
- Professional tools and support, account management
- Monthly clinic reports to provide key insight's to management of patient population
- EHR integration
- Population tacker
- Subscription Fees - Glooko Enterprise

Endodigital

- Founded by physicians and engineers
- Single platform to acquire patient data - cloud-based platform
- FDA cleared AI enhanced decision support - turn every provider into an expert, unifying standard of care across providers and care settings, insulin pump and MDI - fixed meal recently approved by FDA
- Patient Mobile APP - bolus calculator - send treatment changes directly to patient
- EHR integrations - copy and past feature, enhanced coding and billing

Features and benefits

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State-of-the-art cloud-based endocrinology clinical decision support system AI platform

1. Diabetes device and health data uploader

Single platform to acquire patient device data

- Blood glucose meters
- Continuous glucose monitors
- Insulin pen/pump
- Meal log
- *Physician activity (future)*
- *EMR inputs (future)*

2. Patient evaluation reports

Time saving, meaningful, easy to use

- ***Ambulatory Glucose Profile (AGP), daily report, logbook report***
- ***Insulin therapy recommendations***
- ***Behavior tips***
- *Rx selection and dosing (future)*
- *Next treatment steps (future)*

3. AI enhanced decision support

Standardize care by turning every provider into an expert

- ***Type 1 pump users****
- ***Type 1&2 insulin injections****
- *Type 2 non-insulin Rx (future)*

***FDA cleared**

4. Patient app

Remote care plan delivery, enhanced adherence

- ***Provider approved treatment plans***
- ***Provider initiated insulin bolus calculator***
- ***Events diary***

5. Reimbursement support**

Increase reimbursement as part of the standard workflow

- ***Billings reports to facilitate reimburse for CGM, RPM and other related CPT codes***

**In development

Seamless integration into the EMR workflow

Endo.digital uploader compatibility guide.

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Uploading patient data for all compatible devices

Dexcom is directly integrated with endo.digital *(no need to upload data)*

Most used

- Insulet Omnipod DASH — Mac, Windows
- Insulet Omnipod — Mac, Windows
- Tandem t:slim X2 — Mac, Windows
- Abbott FreeStyle Lite — Windows
- Abbott Precision Xtra — Windows
- OneTouch Verio Flex — Mac, Windows
- Dexcom G6 — Advisor Web/Mobile

Additional supported

- Abbott FreeStyle Libre (Reader) — Mac, Windows
- Abbott FreeStyle Libre Pro (Reader) — Mac, Windows
- OneTouch Ultra 2 — Mac, Windows
- OneTouch Ultramini — Mac, Windows
- OneTouch Verio — Mac, Windows
- OneTouch Verio IQ — Mac, Windows
- Medtronic 530G — Mac, Windows
- Medtronic 630G — Mac, Windows
- Medtronic 720 — Mac, Windows
- Medtronic 523 — Mac, Windows
- Medtronic 670G — Mac, Windows
- Ascensia (Bayer) Contour Next Link 2.4 — Mac, Windows
- Ascensia (Bayer) Contour Next One — Mac, Windows

OneTouch,Verio Reflect
Trividia,True Metrix
Accu-Check,Aviva Connect
Accu-Check,Guide
Accu-Chek,Guide Me
Trividia,True Metrix Air
Trividia,True Metrix Go
Animas,Ping
Animas,Vibe
Medtronic,554
Medtronic,640G
Tandem,t:flex
Tandem,t:slim
Tandem,t:slim G4

Dexcom,G4
Dexcom,G5
Abbott,FreeStyle Freedom Lite,
Abbott,FreeStyle Optium Neo
Abbott,FreeStyle Precision
Ascensia (Bayer),Contour
Ascensia (Bayer),Contour Link
Ascensia (Bayer),Contour Next
Ascensia (Bayer),Contour Next EZ
Ascensia (Bayer),Contour Next Link
Ascensia (Bayer),Contour Next USB
Ascensia (Bayer),Contour USB
Abbott Libre, Libre 2

- Dexcom G5 — Advisor Web/Mobile

Note: we are working on Omnipod 5.

before endo.digital

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Uploader workflow

Multiple platforms

Multiple report templates to print

Provider workflow

Multiple screens to toggle

Manual EMR input

after endo.digital

endo.digital

Uploader workflow

- One uploader*

DreaMed*

Provider workflow

- One screen, no print outs

- One click to send treatment plan to patient
- One click to copy to EMR

EMR

*LibreView and select others still require direct upload due to device company constraints

Clinically proven

Study published in Nature Medicine, September 2020, with multiple world-class partners, participants and medical establishments

Joslin Diabetes Center

AUF DEM BULT

UF UNIVERSITY of FLORIDA

Univerzitetni Medicinski center Ljubljana

Yale University School of Medicine

HELMSLEY

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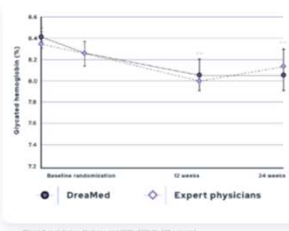
endo.digital provides similar level of glycemic outcomes as physicians from academic centers experienced with technology use



*Nimri R et al. Nature Medicine, Vol 26(9), 2020 (N=168 patients)

Outcomes repeatable in real-world

Presented at the 2021 Advanced Technologies & Treatments for Diabetes (ATTD)

1. **13%** increase in target range throughout the day (P=0.01)
2. **14%** decrease in high glucose values compared to the baseline (P=<0.01)
3. Significantly lower mean glucose (P<0.01)

*A 3-months analysis for matched population to the Nature Medicine publication (N=66)

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Physician Satisfaction (5 scale score)

Using endo.digital is **intuitive and simple**

Score 4.4

I find endo.digital recommendations to be **reliable**

Score 4.4

endo.digital was **similar** to the **therapy adjustments** I would have made

Score 4.4

I find endo.digital recommendations **to be safe**

Score 4.6

*After 3-month usage, N=16 providers

Preliminary Analysis

endo.digital

Preliminary analysis suggests each endo.digital approved recommendation represents a net new CGM billable event

September & October analysis
- 108 net new 95251s billed YOY
- 105 endo.digital recommendations during this time period

New revenue potential for Billings (at current deployment scope)
- $6K per month
- $72K per year

Full scale potential
- $20K+ per month
- $250K+ per year

Billings Clinic 95251 Capture (source: Billings Clinic)

	Sept	Oct	Total
2021 95251	89	82	171
2022 95251s	136	143	279
YOY Increase	47	61	108
YOY % increase	53%	74%	63%

endo.digital launched Sept 13, 2022 (cumulative total)

	26-Sep	5-Oct	19-Oct
Approved recommendations	46	86	105

Comparison	
YOY CGM Code increase since endo.digital launch	108
endo.digital approved recommendations as of 10/19	105

Hypothesis: endo.digital is accounting for the increase in billed CGMM codes

New Revenue Projections (based on Jan 16 endo.digital report*)

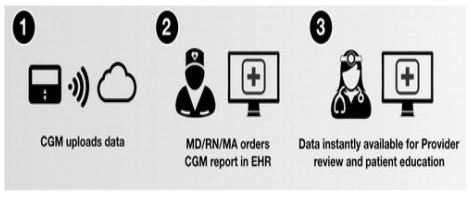
Customer revenue per 95251		$37	
		Current scope	Full scale
Cumulative patient starts		504	2000
Approved recommendations per week*		40	159
Projected per month		160	635
New revenue per month potential		$5,920	$ 23,492
New revenue per year potential		**$71,040**	**$ 281,909**

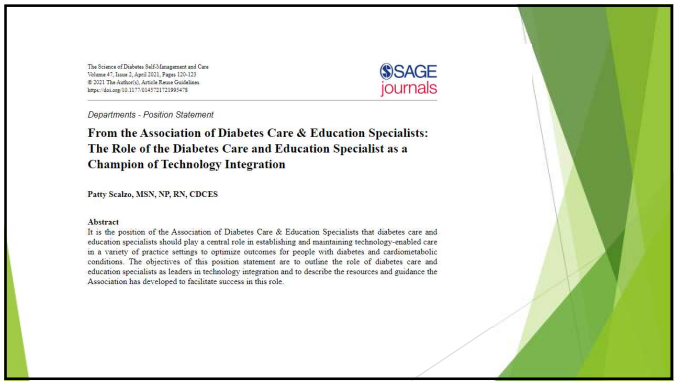
Feedback

endo.digital

March 2023

What are the 2-3 things you like most about endo.digital (technical features and/or service and support)?	What are the 2-3 areas where endo.digital has the most opportunity to improve (technical features and/or service and support)?
• Excellent support/customer service! • Algorithm recommendations.	• Ease of uploading data - sometimes you need to do the same thing 2-3 times before it works (uploading devices, sending reset password emails, invitations to patients).
• Copy/paste feature into our EMR • Customer support is easily accessible	• Integrate a carb counter? • Bolus calculator, breakdown of correction and carb coverage for patients to see this information.
• Like the integration into charting, saves a lot of time. • bolus calculator for carb/correction for patients • communication with patients on app	• Bolus calculator for correction dose • Sometimes doesn't upload data
• copy/paste function to EMR • patient app for MDI • staff engagement in trying to improve	• automatic uploading from devices





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SAGE journals

Departments - Position Statement

From the Association of Diabetes Care & Education Specialists: The Role of the Diabetes Care and Education Specialist as a Champion of Technology Integration

Patty Scalzo, MSN, NP, RN, CDCES

Abstract
It is the position of the Association of Diabetes Care & Education Specialists that diabetes care and education specialists should play a central role in establishing and maintaining technology-enabled care in a variety of practice settings to optimize outcomes for people with diabetes and cardiometabolic conditions. The objectives of this position statement are to outline the role of diabetes care and education specialists as leaders in technology integration and to describe the resources and guidance the Association has developed to facilitate success in this role.