

Continuous Glucose Monitors and Automated Insulin Dosing Systems in the Hospital Consensus Guideline.

Title: Continuous Glucose Monitors and Automated Insulin Dosing Systems in the Hospital Consensus Guideline.

Publication year: 2020

Journal: Journal of diabetes science and technology

Authors: Emory University School of Medicine, Atlanta, GA, USA.

Society: European Respiratory Society

Origin country: International (Europe)

Target countries: Europe

DOI: 10.1177/1932296820954163

PMID: 32985262

Source: <https://pubmed.ncbi.nlm.nih.gov/32985262/>

J Diabetes Sci Technol J Diabetes Sci Technol 967 jdst 101306166 DST Journal of Diabetes Science and Technology 1932-2968 Diabetes Technology Society PMC7645140 PMC7645140.1 7645140 7645140 32985262 10.1177/1932296820954163 10.1177_1932296820954163 1 Original Articles Continuous Glucose Monitors and Automated Insulin Dosing Systems in the Hospital Consensus Guideline <https://orcid.org/0000-0002-9295-3225> Galindo Rodolfo J. MD, FACE 1 Umpierrez Guillermo E. MD, CDE 1 Rushakoff Robert J. MD 2 Basu Ananda MD, FRCP 3 Lohnes Suzanne MA, RN, CDCES, CPT 4 <https://orcid.org/0000-0002-3652-1612> Nichols James H. PhD, DABCC, FAACC 5 <https://orcid.org/0000-0002-9352-7172> Spanakis Elias K. MD 6 7 <https://orcid.org/0000-0003-0513-588X> Espinoza Juan MD, FAAP 8 Palermo Nadine E. DO 9 Awadjie Dessa Garnett MSN, FNP-BC, BC-ADM, CDCES 10 Bak Leigh MSN, APRN, ACNS-BC, CDCES 11 Buckingham Bruce MD 12 Cook Curtiss B. MD 13 <https://orcid.org/0000-0002-0406-9529> Freckmann Guido MD 14 <https://orcid.org/0000-0003-2493-1304> Heinemann Lutz PhD 15 Hovorka Roman PhD, FMedSci 16 Mathioudakis Nestoras MD, MHS 17 Newman Tonya JD 18 <https://orcid.org/0000-0002-0870-4032> O'Neal David N. MD, FRACP 19 Rickert Michaela MS, PA-C, RDN, CDE 20 <https://orcid.org/0000-0003-3100-0735> Sacks David B. MB, ChB, FACP, FRCPATH 21 Seley Jane Jeffrie DNP, MPH, MSN, GNP, RN, BC-ADM, CDCES, CDTC, FADCES, FAAN 22 Wallia Amisha MD, MS 23 <https://orcid.org/0000-0001-9687-9336> Shang Trisha BA 24 <https://orcid.org/0000-0002-3374-9777> Zhang Jennifer Y. BA 24 Han Julia BA 24 <https://orcid.org/0000-0001-6394-6862> Klonoff David C. MD, FACP, FRCP (Edin), Fellow AIMBE 25 1 Emory University School of Medicine, Atlanta, GA, USA 2 University of California, San Francisco, CA, USA 3 University of Virginia School of Medicine, Charlottesville, VA, USA 4 University of California San Diego Medical Center, La Jolla, CA, USA 5 Vanderbilt University Medical Center, Nashville, TN, USA 6 University of Maryland School of Medicine, Baltimore, MD, USA 7 Division of Endocrinology, Baltimore Veterans Affairs Medical Center, MD, USA 8 Children's Hospital Los Angeles, CA, USA 9 Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA 10 New York University Langone Health, NY, USA 11 Yale New Haven Hospital, CT, USA 12 Stanford University School of Medicine, Palo Alto, CA, USA 13 Mayo Clinic Arizona, Scottsdale, AZ, USA 14 Institute for Diabetes-Technology GmbH, Ulm, Germany 15 Science Consulting in Diabetes GmbH, Neuss, Germany 16 University of Cambridge, UK 17 Johns Hopkins University School of Medicine, Baltimore, MD, USA 18 Neal, Gerber and Eisenberg LLP, Chicago, IL, USA 19 University of Melbourne Department of Medicine, St. Vincent's Hospital, Fitzroy, Victoria, Australia 20 Oregon Health and Sciences University, Portland, OR, USA 21 National Institutes of Health, Bethesda, MD, USA 22 Weill Cornell Medicine, New York, NY, USA 23 Northwestern University Feinberg School of Medicine, Chicago, IL, USA 24 Diabetes Technology Society, Burlingame, CA, USA 25 Mills-Peninsula Medical Center, San Mateo, CA, USA David C. Klonoff, MD, FACP, FRCP (Edin), Fellow AIMBE, Mills-Peninsula Medical Center, 100 South San

Mateo Drive Room 5147, San Mateo, CA 94401, USA. Email: dklonoff@diabetestechology.org

Declaration of Conflicting Interests: The author(s) declared the following potential conflicts of interest with respect to the research, authorship, and/or publication of this article: RJG is supported in part by a grant from the National Institute of Diabetes and Digestive and Kidney Diseases of the National Institute of Health under Award Number 1K23DK123384-01 and P30DK11102. RJG received research support (to Emory University) for investigator-initiated studies from Novo Nordisk and Dexcom, and consulting fees from Abbott Diabetes Care, Eli Lilly, Sanofi, Novo Nordisk, and Valeritas. GEU is partly supported by research grants from the National Center for Advancing Translational Sciences of the National Institutes of Health under Award Number UL1TR002378 from the Clinical and Translational Science Award program and a National Institutes of Health (NIH) grant U30, P30DK11102, and has received research grant support to Emory University for investigator-initiated studies from Sanofi, Novo Nordisk, and Dexcom. AB received grant support through NIDDK 085516 and 106785. JHN received research grant support and professional speaking honoraria from Abbott and Roche Diagnostics. EKS was partially supported by the VA MERIT award (#1I01CX001825) from the United States Department of Veterans Affairs Clinical Sciences Research and Development Service. EKS has received unrestricted research support from Dexcom (to Baltimore VA Medical Center and to University of Maryland) for the conduction of clinical trials. JE's efforts were supported by the Food and Drug Administration under award number P50FD006425 for The West Coast Consortium for Technology & Innovation in Pediatrics. The funding source had no involvement in the development of this manuscript or in the decision to submit the paper for publication. The content is solely the responsibility of the authors and does not necessarily represent the official views of the FDA. BB is on medical advisory boards for Convatec, Medtronic, and Tolerion. GF is general manager and medical director of the Insitute for Diabetes Technology (Institut für Diabetes-Technologie Forschungs- und Entwicklungsgesellschaft mbH an der Universität Ulm, Ulm, Germany), which carries out clinical studies on the evaluation of BG meters, with CGM systems and medical devices for diabetes therapy on its own initiative and on behalf of various companies. GF has received speakers' honoraria or consulting fees from Abbott, Ascensia, Dexcom, i-SENS, LifeScan, Menarini Diagnostics, Metronom Health, Novo Nordisk, PharmaSense, Roche, Sanofi, Sensile, and Ypsomed. RH reports having received speaker honoraria from Eli Lilly and Novo Nordisk, serving on advisory panel for Eli Lilly and Novo Nordisk; receiving license fees from BBraun and Medtronic; having served as a consultant to BBraun, patents related to closed-loop insulin delivery, and director at CamDiab. DNO has served on advisory boards for Abbott, Medtronic, MSD, Novo, Roche, and Sanofi; received research support from Medtronic, Novo, Roche, Lilly, and Sanofi; and travel support from Novo and MSD. AW received research support from United Health Group and Eli Lilly, and received research funding from Novo Nordisk. DCK is a consultant to Dexcom, Eoflow, Fractyl, Lifecare, Novo Nordisk, Roche Diagnostics, and Thirdwayv. RJR, SL, NEP, DGA, LB, CBC, LH, NM, TN, MR, DBS, JJS, TS, JYZ, and JH have nothing to disclose.

28 9 2020 11 2020 14 6 368311 1035 1064 28 09 2021 28 09 2021 17 11 2020 17 02 2026 © 2020 Diabetes Technology Society 2020 Diabetes Technology Society This article is the work product of the Continuous Glucose Monitor and Automated Insulin Dosing Systems in the Hospital Consensus Guideline Panel, which was organized by Diabetes Technology Society and met virtually on April 23, 2020. The guideline panel consisted of 24 international experts in the use of continuous glucose monitors (CGMs) and automated insulin dosing (AID) systems representing adult endocrinology, pediatric endocrinology, obstetrics and gynecology, advanced practice nursing, diabetes care and education, clinical chemistry, bioengineering, and product liability law. The panelists reviewed the medical literature pertaining to five topics: (1) continuation of home CGMs after hospitalization, (2) initiation of CGMs in the hospital, (3) continuation of AID systems in the hospital, (4) logistics and hands-on care of hospitalized patients using CGMs and AID systems, and (5) data management of CGMs and AID systems in the hospital. The panelists then developed three types of recommendations for each topic, including clinical practice (to use the technology optimally), research (to improve the safety and effectiveness of the technology), and hospital policies (to build an environment for facilitating use of these devices) for each of the five topics. The panelists voted on 78 proposed recommendations. Based on the panel vote, 77 recommendations were classified as either strong or mild. One recommendation failed to reach consensus. Additional research is

needed on CGMs and AID systems in the hospital setting regarding device accuracy, practices for deployment, data management, and achievable outcomes. This guideline is intended to support these technologies for the management of hospitalized patients with diabetes.