

April 22, 2024

Tara Hall
MEDCAC Coordinator
Letter via email: MedCACpresentations@cms.hhs.gov
Cc: Tara.Hall@cms.hhs.gov

RE: MEDCAC Meeting, Devices for Self-management of Type 1 and Insulin-Dependent Type 2 Diabetes, May 21, 2024

Dear Ms. Hall:

Dexcom, Inc. is submitting this letter in response to the request for public comments to assist the Medicare Evidence Development and Coverage Advisory Committee (MEDCAC) in its deliberations regarding clinical endpoints of interest to CMS in studies of new devices for self-management of type 1 and insulin-dependent type 2 diabetes in older adults.¹

Founded in 1999, Dexcom, Inc. is the market leader in transforming diabetes care and management by providing superior continuous glucose monitoring (CGM) technology to help patients and healthcare professionals better manage diabetes. Since our inception, we have focused on better outcomes for patients, caregivers, and clinicians by delivering solutions that are best in class—while empowering our community to take control of diabetes. In 2017, we obtained first-time Medicare coverage for a CGM system, and we continue to innovate with the G7 CGM system.

There is a voluminous body of evidence demonstrating the clinical and economic value of CGM for individuals who use insulin. Notably, recent studies have shown that CGM results in reductions of per member per month expenditures that range between \$329-\$424.^{2, 3, 4} Unfortunately, CMS' own claims show that among Medicare beneficiaries with diagnosed diabetes who have been prescribed rapid-acting insulin, 38.14% have no record of glucose monitoring (CGM or test strips) and an additional 35.42% are non-adherent to their prescribed

¹ 89 FR 20656

² Isaacson, B, Kaufusi, S, Sorensen, J, Joy, E, Jones, C, Ingram, V, Mark, N, Phillips, M, Briesacher, M. (2022). Demonstrating the Clinical Impact of Continuous Glucose Monitoring Within an Integrated Healthcare Delivery System. *Journal of Diabetes Science & Technology*, 16(2): 383-389.

³ Norman, GJ, Paudel, ML, Parkin, CG, Bancroft, T, Lynch, PM (2022). Association between Real-Time Continuous Glucose Monitor Use and Diabetes-Related Medical Costs for Patients with Type 2 Diabetes. *Diabetes Technology & Therapeutics*. 24(7); 520-523.

⁴ Hannah, K, Nemlekar, P, Norman, G. (2023). Reduction in Diabetes-Related Hospitalizations and Medical Costs After Real-Time Continuous Glucose Monitor Initiation in Patients With Type 2 Diabetes on Intensive Insulin Therapy. *Diabetes*; 72(Supplement_1):991-P. doi.org/10.2337/db23-991-P [also submitted for journal publication]

glucose monitoring therapy.⁵ This is alarming given the dangers of mis-dosed insulin and the long-term complications attendant on poor glucose control. CMS should be making sustained efforts to ensure that currently eligible Medicare beneficiaries with diabetes who use insulin or experience significant hypoglycemic events are using CGM therapy. Additionally, a growing body of evidence now supports expanding the use of CGM to those who do not use insulin.^{6, 7} However, current Medicare coverage policy prevents nearly two-thirds of Medicare beneficiaries with diagnosed diabetes from accessing the most effective technology available for tracking and managing their glucose levels. We hope one outcome of this meeting is movement toward a coverage policy for people with diabetes who do not use insulin, who could benefit so greatly from CGM technology and we appreciate the opportunity to provide these comments.

COMMENTS

Before providing specific comments, we wish to enquire regarding the basis for this meeting. CMS does not provide a particular rationale for holding this meeting at this time, for example, the *Federal Register* notice does not mention that there are pending NCD reconsideration requests related to insulin pump coverage that have been with the agency for more than two years, nor does it identify a particular technology regarding which the agency wishes the advice of MEDCAC. Further, the notice does not acknowledge that the use of continuous glucose monitoring and insulin pumps by individuals with type 1 diabetes or insulin-requiring type 2 is settled science and the standard of care based on “A” level evidence.⁸ We could provide more helpful comments if CMS were to provide more specific information about the purposes and intents of this meeting.

CMS is asking the MEDCAC to consider three key questions related to 21 end points that have been grouped into four domains. The three specific questions are 1) whether the specific end point is appropriate for helping CMS make coverage determinations, 2) what the ideal follow-up time within a clinical trial should be for each end point, and 3) what the minimally clinically

⁵ Puckrein, G. A., Hirsch, I. B., Parkin, C. G., Taylor, B. T., Norman, G. J., Xu, L., & Marrero, D. G. (2023). Assessment of Glucose Monitoring Adherence in Medicare Beneficiaries with Insulin-Treated Diabetes. *Diabetes technology & therapeutics*, 25(1), 31–38. <https://doi.org/10.1089/dia.2022.0377>

⁶ Aleppo, G., Hirsch, I. B., Parkin, C. G., McGill, J., Galindo, R., Kruger, D. F., Levy, C. J., Forlenza, G. P., Umpierrez, G. E., Grunberger, G., & Bergenstal, R. M. (2023). Coverage for Continuous Glucose Monitoring for Individuals with Type 2 Diabetes Treated with Nonintensive Therapies: An Evidence-Based Approach to Policymaking. *Diabetes technology & therapeutics*, 25(10), 741–751. <https://doi.org/10.1089/dia.2023.0268>

⁷ Ajjan, R. A., Battelino, T., Cos, X., Del Prato, S., Philips, J. C., Meyer, L., Seufert, J., & Seidu, S. (2024). Continuous glucose monitoring for the routine care of type 2 diabetes mellitus. *Nature reviews. Endocrinology*, 10.1038/s41574-024-00973-1. Advance online publication. <https://doi.org/10.1038/s41574-024-00973-1>

⁸ ElSayed, N. A., Aleppo, G., Aroda, V. R., Bannuru, R. R., Brown, F. M., Bruemmer, D., Collins, B. S., Hilliard, M. E., Isaacs, D., Johnson, E. L., Kahan, S., Khunti, K., Leon, J., Lyons, S. K., Perry, M. L., Prahalad, P., Pratley, R. E., Seley, J. J., Stanton, R. C., Gabbay, R. A., ... on behalf of the American Diabetes Association (2023). 7. Diabetes Technology: Standards of Care in Diabetes-2023. *Diabetes care*, 46(Suppl 1), S111–S127. <https://doi.org/10.2337/dc23-S007>

significant difference in that end point should be. While our comments do not address all three questions across all 21 end points, we have offered what we hope is some helpful perspective with regard to several of these queries. We have grouped our comments by domain, as generated by CMS.

Surrogate Markers Domain

With regard to the four domains, we believe that the surrogate markers are the most important end points to consider when making coverage decisions for diabetes devices used by the Medicare population.

Across all surrogate marker end points, we believe that the appropriate time for follow up in a clinical trial is 3 months. In our experience with numerous CGM trials, a change in glucose levels is usually evident in the 3-month time period. Typically, when participants establish a lower A1c in those initial few months they can maintain that lower level so long as they persist in CGM use. Discontinuation of therapy usually leads to a rise in A1c.

A1c

With regard to A1c, we acknowledge that the ADA and NICE have identified a change of $\geq 0.5\%$ as being clinically significant. We would point out, however, that there is support for defining $\geq 0.3\%$ as the minimally clinically significant difference. Guidance from both the FDA and the European Medicines Agency (EMA) use the 0.3% threshold when evaluating drugs to improve glycemic control.^{9, 10} Further, there is clinical evidence that a change of 0.3% is clinically meaningful. A study examining the relationship between changes in A1c and the rate of retinopathy found that reducing A1c by 0.3% in 19 patients would result in one less case of retinopathy 9-12 years from the point of treatment, when patients started with an A1c of 8.3%.¹¹

We have found that the level of change in A1c in interventional trials varies depending on the baseline from which a person starts. If their A1c is high then it is easier and more common for them to achieve a substantial drop in A1c, whereas if they are already moderately well controlled when beginning to use a CGM (e.g., in the 7.5% range) it may be difficult for them to achieve an additional drop of 0.5%. For well-controlled individuals, a change of 0.2%-0.3% would be meaningful. Further, the evolution of medical technology is such that each new iteration

⁹ See: https://www.ema.europa.eu/en/documents/scientific-guideline/guideline-clinical-investigation-medicinal-products-treatment-or-prevention-diabetes-mellitus-revision-1_en.pdf

¹⁰ https://downloads.regulations.gov/FDA-2008-D-0118-0003/attachment_1.pdf and <https://www.fda.gov/media/168475/download>

¹¹ Lind, M., et. al., The shape of the metabolic memory of HbA1c: re-analysing the DCCT with respect to time-dependent effects. *Diabetologia* (2010) 53:1093–1098. DOI 10.1007/s00125-010-1706-z

typically builds on the last, which means that incremental progress rather than notable leaps forward is more the rule than the exception. We do not believe that patients should be prevented from accessing the most effective technologies, even if the benefits conferred by those devices are incremental relative to the preceding generation. Because of these clinical realities, it would not be in the best interest of patients were CMS to establish an absolute MCID for A1c that would have to be met by any new technology to secure Medicare coverage, particularly if that bar is set at a reduction of 0.5%. Were CMS to establish an MCID for A1c, as noted above there is some evidence for doing so at the level of 0.3%, however we believe that because individuals start at various levels and thus experience different relative drops in A1c when initiating device therapy, and because the absolute MCID for A1c has not been conclusively proven, CMS should not establish an MCID for A1c.

Percentage of time in acceptable glucose range (70-180 mg/dL)

A 2019 study used the finger stick data from the Diabetes Control and Complications Trial (DCCT) to estimate time in range and then examined the rates of retinopathy and microalbuminuria that occurred at different percentages of time in range. Since the time in range (TIR) estimates were done in 10% increments, the change in these two complications for every 5% change in TIR were not calculated, however, there is a smooth curve in the rate of complications from the lower to the higher rates of TIR, clearly indicating that changes in TIR smaller than 10% would fall along that same curve and be clinically meaningful.¹² A separate trial looking at the relationship between TIR and cardiovascular autonomic neuropathy in individuals with type 2 diabetes also found a continuous curve, with increasing rates of this complication as TIR dropped.¹³ A similar association has been found between TIR and the rate of retinopathy.¹⁴

An international consensus statement on TIR published that same year concluded that “what may appear to be small, incremental successes (e.g., 5% increase in TIR) are, in fact, clinically significant.”¹⁵ This same consensus statement notes that every 10% increase in TIR translates into a 0.5% reduction in A1c. As noted earlier in these comments, lesser shifts in A1c are clinically significant, which aligns with the conclusion from this statement that a 5% shift in TIR is as well.

¹² Beck, R. W., Bergenstal, R. M., Riddlesworth, T. D., Kollman, C., Li, Z., Brown, A. S., & Close, K. L. (2019). Validation of Time in Range as an Outcome Measure for Diabetes Clinical Trials. *Diabetes care*, 42(3), 400–405. <https://doi.org/10.2337/dc18-1444>

¹³ Guo, Q., Zang, P., Xu, S., Song, W., Zhang, Z., Liu, C., Guo, Z., Chen, J., Lu, B., Gu, P., & Shao, J. (2020). Time in Range, as a Novel Metric of Glycemic Control, Is Reversely Associated with Presence of Diabetic Cardiovascular Autonomic Neuropathy Independent of HbA1c in Chinese Type 2 Diabetes. *Journal of diabetes research*, 2020, 5817074. <https://doi.org/10.1155/2020/5817074>

¹⁴ Lu, J., Ma, X., Zhou, J., Zhang, L., Mo, Y., Ying, L., Lu, W., Zhu, W., Bao, Y., Vigersky, R. A., & Jia, W. (2018). Association of Time in Range, as Assessed by Continuous Glucose Monitoring, With Diabetic Retinopathy in Type 2 Diabetes. *Diabetes care*, 41(11), 2370–2376. <https://doi.org/10.2337/dc18-1131>

¹⁵ Battelino, T., et. al., Clinical Targets for Continuous Glucose Monitoring Data Interpretation: Recommendations From the International Consensus on Time in Range. *Diabetes Care* 1 August 2019; 42 (8): 1593–1603. <https://doi.org/10.2337/dci19-0028>

A more recent international consensus statement on TIR published in *Lancet* concluded that there was B level evidence to support the conclusion that “A difference of $\geq 5\%$ (absolute percentage points) in time in range is considered clinically meaningful for an individual participant in a clinical study and 3% is considered clinically meaningful for a treatment group difference in mean time in range.”¹⁶

Similar to the situation with A1c, patients who start with a very low TIR may see significant increases when initiating CGM therapy, whereas those who begin CGM therapy with a higher TIR will likely not see such a dramatic shift. Again, it is in the best interest of patients to permit them to use the most efficacious technology, even if the associated improvements for them individually are incremental. We would consequently recommend that CMS not establish an MCID for TIR that is any greater than 5%.

Hypoglycemia

Hypoglycemia is a significant problem for people with diabetes.¹⁷ Severe hypoglycemia is known to increase the rates of acute cerebrovascular disease, myocardial infarction, neurocognitive dysfunction, and loss of vision and inadequate treatment of hypoglycemia has significant impacts on morbidity and mortality.^{18, 19, 20} Nocturnal hypoglycemia and a loss of the ability to sense hypoglycemia are significant contributors to occurrence of severe

¹⁶ Battelino, T., et. al., (2023). Continuous glucose monitoring and metrics for clinical trials: an international consensus statement. *The lancet. Diabetes & endocrinology*, 11(1), 42–57. [https://doi.org/10.1016/S2213-8587\(22\)00319-9](https://doi.org/10.1016/S2213-8587(22)00319-9)

¹⁷ Meneghini LF, Lee L, Gupta S, Preblich R. The association of hypoglycemia severity and clinical, patient-reported and economic outcomes in US patients with type 2 diabetes using basal insulin. This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/dom.13208

¹⁸ Kalra S, Mukherjee JJ, Venkataraman S, et al. Hypoglycemia: the neglected complication. *Indian J Endocrinol Metab*. 2013;17(5):819–834.

¹⁹ Noh RM, Graveling AJ, Frier BM. Medically minimising the impact of hypoglycemia in type 2 diabetes: A review. *Expert Opin Pharmacother*. 2011;12:2161–2175.

²⁰ Griesdale DE, de Souza RJ, van Dam RM, et al. Intensive insulin therapy and mortality among critically ill patients: A meta-analysis including NICE-SUGAR study data. *Can Med Assoc J*. 2009;180:821–827.

hypoglycaemic events.^{21, 22, 23} For a variety of reasons, older diabetic patients are at particularly high risk for severe hypoglycaemic events.^{24, 25, 26, 27, 28, 29}

Since A1c is a measure of average glucose over approximately three months, it is possible for a person with diabetes to experience significant glycemic excursions, including hypoglycemic events, and still have a reasonably good A1c. As noted above, hypoglycemia is a significant clinical problem. Consequently, we believe that devices that reduce occurrences of Level 2 or Level 3 hypoglycemic events, or decrease time below range are clinically valuable, even if the A1c for individuals using those devices stays relatively stable.

The accepted clinical standard is that most adults should spend <4% of their time in the 54-69 mg/dL range, with older adults spending <1% of their time in that range. All adults should spend <1% of their time <54 mg/dL.³⁰ It can be difficult to identify a specific MCID for time below range because many people with diabetes, particularly those with type 2, do not spend a great deal of time below range at baseline. For example, a recent study of CGM use by older adults with type 1 diabetes found that participants in the CGM arm had baseline time below range of 5.1%, while those in the control arm had 4.7% at baseline. The CGM group dropped to 2.7% during follow up, while the control group rose to 4.9%.³¹ We believe that device use should not result in hypoglycemia that exceeds these standards of care.

²¹ Unger J, Parkin CG. Hypoglycemia in insulin-treated diabetes: a case for increased vigilance. *Postgrad Med.* 2011;123(4):81-91.

²² Weinstock RS, DuBose SN, Bergenstal RM, et al. Risk Factors Associated With Severe Hypoglycemia in Older Adults With Type 1 Diabetes. *Diabetes Care* 2016;39(4):603-610.

²³ Bremer JP, Jauch-Chara K, Hallschmid M, Schmid S, Schultes B. Hypoglycemia unawareness in older compared with middle-aged patients with type 2 diabetes. *Diabetes Care* 2009; 32:1513-1517.

²⁴ Giorda CB, Ozzello A, Gentile S, et al. Incidence and risk factors for severe and symptomatic hypoglycemia in type 1 diabetes. Results of the HYPOS-1 study. *Acta Diabetol.* 2015;52(5):845-853.

²⁵ Cariou B, Fontaine P, Eschwege E, et al. Frequency and predictors of confirmed hypoglycemia in type 1 and insulin-treated type 2 diabetes mellitus patients in a real-life setting: results from the DIALOG study. *Diabetes Metab.* 2015;41(2):116-125.

²⁶ Weinstock RS, DuBose SN, Bergenstal RM, et al. Risk factors associated with severe hypoglycemia in older adults with type 1 diabetes. *Diabetes Care.* 2016;39(4):603-610.

²⁷ Bremer JP, Jauch-Chara K, Hallschmid M, Schmid S, Schultes B. Hypoglycemia unawareness in older compared with middle-aged patients with type 2 diabetes. *Diabetes Care.* 2009; 32:1513-1517.

²⁸ Punthakee Z, Miller ME, Launer LJ, et al. Poor cognitive function and risk of severe hypoglycemia in type 2 diabetes: post hoc epidemiologic analysis of the ACCORD trial. *Diabetes Care.* 2012; 35:787-793.

²⁹ Seaquist ER, Anderson J, Childs B, et al. Hypoglycemia and diabetes: a report of a workgroup of the American Diabetes Association and the Endocrine Society. *Diabetes Care* 2013;36:1384-95.

³⁰ American Diabetes Association Professional Practice Committee; 6. Glycemic Goals and Hypoglycemia: *Standards of Care in Diabetes—2024.* *Diabetes Care* 1 January 2024; 47 (Supplement_1): S111–S125. <https://doi.org/10.2337/dc24-S006>

³¹ Pratley, R. E., Kanapka, L. G., Rickels, M. R., Ahmann, A., Aleppo, G., Beck, R., Bhargava, A., Bode, B. W., Carlson, A., Chaytor, N. S., Fox, D. S., Goland, R., Hirsch, I. B., Kruger, D., Kudva, Y. C., Levy, C., McGill, J. B., Peters, A., Philipson, L., Philis-Tsimikas, A., ... Wireless Innovation for Seniors With Diabetes Mellitus (WISDM) Study Group (2020). Effect of Continuous Glucose Monitoring on Hypoglycemia in Older Adults With Type 1 Diabetes: A Randomized Clinical Trial. *JAMA*, 323(23), 2397–2406. <https://doi.org/10.1001/jama.2020.6928>

Health Outcomes Domain

The DCCT followed more than 1,400 subjects for 6.5 years and conclusively demonstrated a link between maintenance of good glucose control and the rates of various significant complications of diabetes.^{32,33} The UKPDS study tracked nearly four thousand type 2 patients over ten years and found reduced rates of microvascular complications arising from better glucose control.³⁴ In follow-up studies to the DCCT³⁵ and to the UKPDS³⁶ a link between reduced cardiovascular events and improved glycemic control was demonstrated. Since the link between diabetes complications and glycemic control has been conclusively demonstrated, we do not believe it necessary for trials of devices using these health outcomes as end points to be extended for a very long time to demonstrate clinical significance. If a trial demonstrates that glucose control improves with use of a device, even across a relatively short time, because of the DCCT, UKPDS and their follow-up studies, we can conclude that continued use of the device will result in reduced rates of complications of diabetes.

Consequently, we do not believe it necessary to require lengthy trials when using these end points as such trials would be inordinately long, prohibitively expensive, and ethically dubious. We therefore recommend using a trial duration of at least 12 weeks for these measures, which as noted above, is generally sufficient time to show a shift in glycemic control.

Quality-of-Life Domain

Regarding the relative importance of these end points, on a scale of 1-5, with 1 being the least important and 5 being the most important, we believe that the Diabetes Distress Scale, the Diabetes Treatment Satisfaction Questionnaires (Status and Change versions), and the Hypoglycemia Fear Survey should be rated at 5. The Audit of Diabetes-Dependent Quality of

³² The absence of a glycemic threshold for the development of long-term complications: the perspective of the Diabetes Control and Complications Trial. (1996). *Diabetes*, 45(10), 1289–1298.

³³ Genuth S. (2006). Insights from the diabetes control and complications trial/epidemiology of diabetes interventions and complications study on the use of intensive glycemic treatment to reduce the risk of complications of type 1 diabetes. *Endocrine practice : official journal of the American College of Endocrinology and the American Association of Clinical Endocrinologists*, 12 Suppl 1, 34–41. <https://doi.org/10.4158/EP.12.S1.34>

³⁴ Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). UK Prospective Diabetes Study (UKPDS) Group. (1998). *Lancet* (London, England), 352(9131), 837–853.

³⁵ Diabetes Control and Complications Trial (DCCT)/Epidemiology of Diabetes Interventions and Complications (EDIC) Study Research Group (2016). Intensive Diabetes Treatment and Cardiovascular Outcomes in Type 1 Diabetes: The DCCT/EDIC Study 30-Year Follow-up. *Diabetes care*, 39(5), 686–693. <https://doi.org/10.2337/dc15-1990>

³⁶ Holman, R. R., Paul, S. K., Bethel, M. A., Matthews, D. R., & Neil, H. A. (2008). 10-year follow-up of intensive glucose control in type 2 diabetes. *The New England journal of medicine*, 359(15), 1577–1589. <https://doi.org/10.1056/NEJMoa0806470>

Life (ADDQoL) questionnaire should be rated at 4 and the Problem Areas in Diabetes should be rated at 3.

Diabetes distress (a measure of emotional distress resulting from burdensome symptoms, complex self-management regimens, and fear of complications) is significantly associated with an individual's ability to manage their diabetes and subsequently glycemic control.

Consequently, they are likely to see a change in these quality-of-life end points within three months of initiating a device therapy that improves glycemic control.³⁷ Therefore, we recommend a duration of no less than 3 months for trials that use these end points.

The ADDQoL is an individualized, patient-centered measure of the impact of diabetes on quality-of-life. It allows respondents to rate the importance and impact of diabetes on various life domains (e.g., freedom to drink, freedom to eat, family life) that are personally applicable to them. With regard to an MCID for the quality-of-life end points, the challenge is that these measures are reflections of individual perceptions, rather than objective biological facts. For example, there could be a person who expends a great deal of mental energy on maintaining tight glucose control. They may in fact be succeeding, but without a CGM to measure their day-to-day success, their insecurity about those efforts may be high. Once they initiate CGM therapy, the information provided by the device could concretely demonstrate to them how well their efforts are paying off and while there may be no change in A1c, their confidence in what they had been doing could increase significantly, thus reducing distress.

Conversely, there may be a person who erroneously believes they have good glucose control and thus scores low in terms of diabetes distress, but who realizes upon beginning to use a CGM that their control is not as good as they had imagined, thus increasing their distress. For both persons, the change in their distress levels is a positive thing – because it provides needed reassurance on the one hand, or an appropriate incentive to change on the other. Generally, however, decreased distress or improvements in reported quality of life are preferred outcomes.

The ADDQoL score can range from -9 to +3, with higher scores indicating a better quality of life (i.e., less negative impact of diabetes on various aspects of life). It is important to note that the ADDQoL questionnaire is a self-reported measure, and the scoring method allows for a comprehensive assessment of how diabetes affects different aspects of an individual's life. Hence, any improvement whether on an item level or for the overall scale is considered valuable

³⁷ Lawrence Fisher, Danielle M. Hessler, William H. Polonsky, Joseph Mullan; When Is Diabetes Distress Clinically Meaningful?: Establishing cut points for the Diabetes Distress Scale. *Diabetes Care* 1 February 2012; 35 (2): 259–264. <https://doi.org/10.2337/dc11-1572>

to show impact of therapy/treatment/device use in the respondent's life with diabetes. The scope and extent of these improvements may vary based on age, demographics, etc.

The Diabetes Distress Scale has been shown to have an MCID of +/- 0.19 across all items in the questionnaire, with a variation of 0.26-0.5 across all seven of the subscales.³⁸ To put that in context, a score of <2.0 is considered little to no distress, 2.0 – 2.9 is considered moderate distress and 3.0 or higher is considered high distress.³⁹

Regarding the Hypoglycemia Fear Survey (HFS), an alternative approach to MCID is the correlation between quality of life measured by EQ-5D and HFS. Currie et al. 2006 showed a 0.008 improvement in QOL with each 1-point drop in HFS score.⁴⁰

The Problem Areas in Diabetes instrument is responsive/sensitive to changes due to interventions with effect sizes ranging from 0.32 to 0.65 for those interventions.⁴¹ We believe, however, that there are better instruments for measuring problems with diabetes, including the Diabetes Distress Assessment System Core Distress Scale and Sources Scale for Type 1 and Type 2.

CONCLUSION

We appreciate the chance to provide these comments and hope the MEDCAC will find them useful in their deliberations. Should you have any questions about these comments, please contact me directly at jesse.bushman@dexcom.com.

Sincerely,

/JSB/

Jesse S. Bushman
Director, US Policy
Dexcom, Inc.

³⁸ Fisher, L., Hessler, D., Polonsky, W., Strycker, L., Masharani, U., & Peters, A. (2016). Diabetes distress in adults with type 1 diabetes: Prevalence, incidence and change over time. *Journal of diabetes and its complications*, 30(6), 1123–1128. <https://doi.org/10.1016/j.jdiacomp.2016.03.032>

³⁹ Fisher, L., Hessler, D. M., Polonsky, W. H., & Mullan, J. (2012). When is diabetes distress clinically meaningful?: establishing cut points for the Diabetes Distress Scale. *Diabetes care*, 35(2), 259–264. <https://doi.org/10.2337/dc11-1572>

⁴⁰ Currie, C. J., Morgan, C. L., Poole, C. D., Sharplin, P., Lammert, M., McEwan, P. (2006). "Multivariate models of health-related utility and the fear of hypoglycaemia in people with diabetes." *Curr Med Res Opin* 22(8): 1523-1534.

⁴¹ Welch, G., Weinger, K., Anderson, B., & Polonsky, W. H. (2003). Responsiveness of the Problem Areas In Diabetes (PAID) questionnaire. *Diabetic medicine: a journal of the British Diabetic Association*, 20(1), 69–72. <https://doi.org/10.1046/j.1464-5491.2003.00832.x>