Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Association of British Clinical Diabetologists (ABCD)	Guideline	General	General	ABCD feedback NICE Diab in pregnancy 1.1.24 Mandate full medicines review - increasingly pts will be on GLP-1 and SGLT2 inhibitors 1.1.26 explain first the positive side of things – potential of fertility and also discuss risk of passing on to children 1.2.5 ensure that the OGTT protocol is robust eg. Info about time to consume the glucose load and limited activity on the 2 hours * Recommendation 1.1.23 was updated to better reflect the summaries of product characteristics for insulin detemir and insulin glargine. As insulin degludec is becoming more widely used outside of pregnancy and women are presenting in early pregnancy taking insulin degludec I wonder whether a comment about the lack of evidence to support the use of insulin degludec in pregnancy is warranted. * The proposed NICE guidance states that both flash glucose monitoring and continuous glucose monitoring are alternative technologies that can be used in pregnancy. However, the guidance from NHS England, based on the CONCEPTT Study, clearly favours continuous glucose monitoring over flash glucose monitoring in pregnancy. *There is not advice on the duration of continuous glucose monitoring and whether this should be commenced preconception or used in the postnatal period to cover breast feeding.	*Thank you for your comment. Recommendations 1.1.24, 1.1.26 and 1.2.5 are out of scope for this update.* *The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes..* *The committee further noted that m intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it.*
British Dietetic Association - Obesity Group	Guideline	General	General	Thank you for this. The consultation is limited in scope and we do not have any comments on the areas which are being consulted on.	*Thank you for your comment.*
British Maternal and Fetal	Comment form question 1	N/A	N/A	***Q. Which areas will have the biggest impact on practice and be challenging to implement? Please say for whom and why.***	*Thank you for your comment. The committee were unable to make specific recommendations on when CGM should be started as this was not the remit of the question but noted that monitoring should be started from the first trimester and should*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Medicine Society				Flash and continuous glucose monitoring and Covid-19: Other general considerations: • Some women will develop worsening control towards the end of pregnancy and there may not be sufficient time before delivery for CGM to be of benefit. Therefore, it will be helpful to give guidance about how late in pregnancy it could be of benefit to start CGM for the first time. • Women from less privileged socio-economic groups are more likely to have high BMI and will spend less time in target glucose range. As CGM enables better control, it is important to have clear guidance, consistent with RCT findings so those less able to argue for CGM are given the treatment with the best evidence for its use. • The same applies for women who are not fluent in English.	*be tracked throughout their pregnancy to improve glycaemic control and neonatal outcomes.* *The committee noted concerns about less privileged socio-economic groups and have revisited the evidence and noted that there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee's discussion and interpretation section (section 1.1.11) has been amended based on these changed.* *The committee took language and learning difficulties into consideration and have drafted a recommendation (Rec 1.3.20) on the support that should be provided. The committee's full discussion is highlighted in section 1.1.11 of the evidence review.*
British Maternal and Fetal Medicine Society	Comment form question 2	N/A	N/A	***Would implementation of any of the draft recommendations have significant cost implications?*** • Out of hours advice for all women using flash or CGM (particularly those commenced for the first time in pregnancy) could have significant cost implications for hospitals with a large number of women with T2DM or poorly controlled GDM requiring insulin treatment. Sustainability for the workforce should be considered, and additional resources may be required to cover 7-day working.	*Thank you for your comment. The committee retained the recommendation on education and support as they highlighted that this is an important factor in care. The committee also noted that women need to know who to contact if they require out of hours support.* *The committee have further amended the draft recommendation to state advice on sources of out of hours support should be provided. The committee's discussion and interpretation section (section 1.1.11) has also been amended based on these changed.*
British Maternal and Fetal	Comment form question 3	N/A	N/A	***Q. What would help users overcome any challenges? (For example, existing practical resources or national initiatives, or examples of good practice)***	*Thank you for your comment. The committee highlighted that support and education crucial and is particularly important when language barriers are present. Therefore, the committee recommended that for pregnant women who are using isCGM or*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Medicine Society				• Translation of guidance into different languages will improve uptake and is likely to reduce inequalities faced by women for whom English is not their first language. • Communication plan developed between NIHR, NHSE, Diabetes UK, Health Technology Wales, RCOG (BMFMS) and other stakeholders to ensure consistent, evidence-based advice is given to health care providers.	*continuous monitoring, a member of the joint diabetes and antenatal care team with expertise in these systems should provide education and support (including advising women about sources of out-of-hours support). The committee's full discussion is highlighted in section 1.1.11 of the evidence review.* *Specific recommendations were not drafted for translation of guidance however, it is acknowledged that this service is readily available.*
British Maternal and Fetal Medicine Society	Comment form question 4	N/A	N/A	***Q. The recommendations in this guideline were developed before the coronavirus pandemic. Please tell us if there are any particular issues relating to COVID-19 that we should take into account when finalising the guideline for publication.*** • Flash and CGM can be monitored remotely so will be helpful when trying to reduce hospital attendance, although the initiation of glucose monitoring may be challenging given COVID-19 distancing regulations • As people with diabetes have increased mortality and morbidity from COVID-19, it is likely that pregnant women with pre-existing diabetes or GDM will have a worse prognosis if they have poor control. Therefore the use of GCM or flash glucose monitoring may improve outcomes, and this is an attractive approach (particularly of relevance to 1.3.22).	*Thank you for your comment. The committee's discussion and interpretation of evidence section (Section1.1.11) has been amended to highlight the benefits of remote monitoring.*
British Maternal and Fetal Medicine Society	Guideline	017 018	023 - 026 001 - 027	Impact on practice: 1.3.17: the guidance is not consistent with the highest level of evidence (CONCEPTT RCT) that supports CGM in T1DM as this improves time in target glucose range in addition to improving rates of adverse outcomes. As CGM is recommended by Diabetes UK, the NHS long-term plan and Health Technology Wales, it will create confusion if the NICE guideline does not have a consistent recommendation. It would be consistent with the evidence to recommend CGM for women with T1DM.	*Thank you for your comment. The recommendations have been amended to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee also further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The rationale and impact section and*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				1.3.20: It would be simpler, and consistent with existing RCT evidence to state, If any of the criteria in 1.3.17 to 1.3.19 apply but a pregnant woman with type 1 diabetes cannot tolerate CGM, or if she prefers flash glucose monitoring, this can be offered. 1.3.22: this is a sensible strategy likely to improve pregnancy outcome in this group. We encourage more research into the impact of CGM on outcomes in women with T2DM and GDM treated with insulin.	*committee's discussion and interpretation of evidence (1.1.11) have also been updated to highlight the committee discussion.* *Additionally, a research recommendation could not be drafted for women with type 2 diabetes as part of this update as the remit of this update was women with type 1 diabetes.*
Cambridge University Hospitals NHS Foundation Trust	Comment form question 1	N/A	N/A	***Q. Which areas will have the biggest impact on practice and be challenging to implement? Please say for whom and why.*** Response: We are concerned that the risk of hypoglycaemia appears to be higher with flash monitoring devices, which are promoted strongly within this draft of the guideline. We would be concerned that if used widely in pregnancy, this may have repercussions upon safety, hospital admissions, and would necessitate a higher level of glycaemia to compensate.	*Thank you for your comment. The committee revisited the evidence and have amended the recommendations to state the CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee's discussion and interpretation section (section 1.1.11) has been amended based on these changed.*
Cambridge University Hospitals NHS Foundation Trust	Comment form question 2	N/A	N/A	***Q. Would implementation of any of the draft recommendations have significant cost implications?*** Response: We would be concerned that increasing levels of maternal hypoglycaemia when using flash monitoring may have a bearing upon maternal hospitalisations and may indirectly increase the costs of using these devices. Given the importance of maternal hypoglycaemia for safety, we consider that CGM devices are likely to be more beneficial in the setting of hypoglycaemia compared to intermittent devices.	*Thank you for your comment. The committee revisited the evidence and have amended the recommendations to state CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee's discussion and interpretation section (section 1.1.11) has also been amended based on these changed.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Cambridge University Hospitals NHS Foundation Trust	Comment form question 3	N/A	N/A	***Q. What would help users overcome any challenges? (For example, existing practical resources or national initiatives, or examples of good practice.)*** Response: Support of devices / systems where there is clear high quality RCT data.	*Thank you for your comment. The committee took into consideration the quality of the evidence, particularly the quality of the CONCEPTT trial. Committee discussion is highlighted in the committee's discussion and interpretation of the evidence section in the evidence review (Section 1.1.11).*
Cambridge University Hospitals NHS Foundation Trust	Comment form question 4	N/A	N/A	***Q. The recommendations in this guideline were developed before the coronavirus pandemic. Please tell us if there are any particular issues relating to COVID-19 that we should take into account when finalising the guideline for publication.*** Response: the IT link between patients and clinics has become more and more important, to facilitate remote monitoring during the covid19 pandemic. This may have a bearing upon recommendations.	*Thank you for your comment. The committee's discussion and interpretation of evidence section (Section1.1.11) has been amended to highlight the benefits of remote monitoring.*
Cambridge University Hospitals NHS Foundation Trust	Guideline	General	General	Links with the tobacco industry are not that relevant to this guideline, but financial interests of committee members related to CGM /isCGM are very pertinent and should be outlined clearly. In particularly, Flash systems are very strongly marketed and Abbott have made them widely available to clinicians. Committee members should be aware that may cause bias in interpreting the results, as clinicians may have less opportunity for familiarity with other CGM devices. I note the committee has a broad range of expertise, including on renal and cardiac complications of diabetes. How many of the committee members have personal experience of initiating and interpreting data from multiple different types of glucose monitoring equipment?	*All committee members are required to declare all relevant conflicts of interest relating to the topic area, and our policy clearly states that conflicted members would be excluded from discussions if deemed necessary by a senior team member of NICE, and the committee chair. All declarations of interest are a matter of public record and can be found on the NICE website.*
Cambridge University Hospitals	Guideline	General	General	Information should be provided to the woman 'and her family' – this seems paternalistic. Are we encouraged to offer information directly to family members without the woman's consent? I can't	*Thank you for your comment. Standard NICE wording was used in the development of this guideline.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
NHS Foundation Trust				imagine this would be tolerated in men's health settings. Although this section was not reviewed as part of the guidance redraft, it has equality implications.	
Cambridge University Hospitals NHS Foundation Trust	Guideline	General	General	**The clinical and health economic assumptions that Flash and CGM are equal are not supported by the data**. It is notable that the glucose levels achieved in the retrospective cohort study are comparable to those obtained using self-monitoring of blood glucose (SMBG) in the CONCEPTT RCT. Differences between flash and SMBG users are negligible for key glycaemic measures including mean glucose (7.1 vs 7.0mmol/L), time-in target glucose range 3.5-7.8mmol/L (60 vs 61%), time spent hyperglycaemic>7.8mmol/L (34 vs 32%). Therefore, the assumptions that Flash and CGM are equal are not supported by the data. Indeed, these data point to **more similarities between Flash and SMBG**. Thus, we strongly dispute the assumptions e.g. 'we assumed that flash would have the same outcomes as CGM'. 'We assume, for babies that require NICU, duration of critical care is the same for flash as that for CGM. 'The committee was satisfied that there is no evidence of any meaningful clinical advantage of one over the other for the average pregnancy.' 'It is reasonable to assume the same level of process utility for CGM as for flash' These assumptions ignore the very serious risk of bias noted by the evidence review panel. Despite comparable baseline levels, CONCEPTT CGM users had a lower mean glucose (6.7 vs 7.1mmol/L), higher time-in target range (68 vs 60%), less time hyperglycaemic (27 vs 34%), less time hypoglycaemic (3 vs 6%) and less glucose variability (CV 32 vs 36%) compared to those using flash or G4 in the observational study. This equates to an additional 2 hours per day with glucose levels in the pregnancy target 3.5-7.8mmol/L range, 1hr 45 minutes less hyperglycaemia >7.8mmol/L and 45 minutes less hypoglycaemic for CGM. **A summary table should be provided for women and**	*Thank you for your comment. The committee revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The committee discussion and interpretation of evidence section (Section 1.1.11) has also been amended to further highlight the committee's decisions.* *Target blood glucose levels are covered by recommendations 1.3.4- 1.3.6.* *As highlighted in the committee's discussion and interpretation of the evidence section (1.1.11) Secher 2013 was downgraded for indirectness for this reason. The directness of the evidence was taken into consideration when assessing the overall quality of the evidence.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				clinicians to make informed decisions about how to achieve glucose targets during pregnancy. A table is attached summarising the glycaemic differences between SMBG, flash/G4 and CGM users. **Evidence review -** Included studies – It is inappropriate to include the Secher AL RCT which did not use CGM continuously during pregnancy– in Secher 2013, only 7% of women (5 participants) used CGM for at least 60% of the time and remaining participants used CGM intermittently. This trial is not applicable to current clinical practice and with only 5 participants using CGM as intended should be excluded.	
Cambridge University Hospitals NHS Foundation Trust	Guideline	General	General	**Differences in hypoglycaemia between Flash and CGM are not reflected in the recommendations**. The evidence review states that there was 'some evidence that CGM results in less time spent below target than flash (Kristensen et al. 2019). In theory, this may have benefits including reduced hypoglycaemic events; however, no such benefit was observed in the study'. This is misleading as the study was designed to examine large for gestational age infants and adverse neonatal outcomes thus maternal clinical hypoglycaemia events were not recorded. **CGM users spent significantly less time in hypoglycaemia in the first, second and third trimesters**. Flash users spent strikingly high (10%) time with glucose levels below target (2.4hours/day with glucose levels <3.5mmol/L) including during the third trimester. This is twice as high as CGM users and even higher than SMBG users in CONCEPTT and should be more clearly stated. **Hypoglycaemia (and fear of hypoglycaemia) is the major barrier for achieving target glucose levels in pregnant women with type 1 diabetes.** Outside of pregnancy, there is an association between percentage time below range and severe hypoglycaemia.	*Thank you for your comment. The committee revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The committee discussion and interpretation of evidence section (Section 1.1.11) has also been amended to further highlight the committee's decisions.*
Cambridge University Hospitals	Guideline	General	General	**Additional specific comments** No glucose targets are provided for women using CGM or Flash. The international consensus recommendations for CGM/FLASH	*Thank you for your comment. The committee were unable to make specific recommendations on time in range targets as this was outside the remit of the review question. However, the*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
NHS Foundation Trust				time in range (TIR) targets should be included. The consensus recommendations suggest aiming for time in range 3.5-7.8mmol/L; TIR >70% (16hr, 48 min), time above 7.8mmol/L range; TAR < 25% (6 hr) and time below range for 3.5mmol/L TBR <4% (1hr) and 3.0mmol/L TBR <1% (15 min). Taken together the CONCEPTT RCT and Swedish data indicate that relatively small, 5% increments in time in range 3.5-7.8mmol/L, are associated with clinically relevant improvements in neonatal health outcomes. Furthermore, unlike HbA1c, time in range (TIR) targets are not influenced by gestational changes in erythropoiesis, red cell life span or iron deficiency.	*committee noted that these are well understood by clinicians and can be captured through CGM devices. They also stated that clinicians should discuss this with pregnant women and encourage them to spend more time in their personalised target glucose ranges.* *The committee's discussion and interpretation of evidence section (Section1.1.11) of the evidence review has been amended to further highlight the discussion.* *Additionally, as Battelino (2019) and Murphy (2019) were not systematic reviews or randomised control trials, these studies were not included in the evidence review. However, Battelino (2019) was used to obtain minimally important differences (MIDs). See Appendix B of the evidence review for further information.*
Cambridge University Hospitals NHS Foundation Trust	Guideline	017 018	022 - 026 001 - 027	**The guideline appears to strongly promote flash monitoring, a finding which is not supported by the evidence.** DIP NICE draft guidance Sept 2020 Flash and Continuous Glucose Monitoring (CGM) The evidence review states that, based on high quality randomised controlled trial data, continuous glucose monitoring (CGM) resulted in • More women achieving blood glucose targets • Fewer caesarean sections • Fewer neonatal intensive care unit (NICU) admissions The committee noted that robust evidence supporting the use of flash glucose monitoring in pregnant women with type 1 diabetes was required. These statements, which we fully endorse, are not reflected in the draft recommendations **which appear to strongly promote flash monitoring**.	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 (as highlighted in section 1.1.11 of the evidence review) paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.* *The committee further recommended that isCGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				We wonder if a more evidence-based review of the literature would be possible for this NICE guideline review. **Failure to differentiate between high quality RCT evidence and data obtained from a retrospective cohort study undermines confidence in evidence-based medicine**. We consider that the reliance on committee opinion rather than high quality evidence is inconsistent with the aims of NICE. We are concerned that this draft proposal does not attain the same high standards of evidence-based appraisal required of other NICE guidelines. **It should be stated explicitly which recommendations 1.3.17 to 1.3.23 are based on 'committee experience', versus high quality randomised trial and observational data**. For example; The randomised trial evidence supports CGM use, for improving maternal glucose levels and reducing caesarean sections and neonatal intensive care unit admissions. Observational data suggest that flash and CGM users achieved similar glucose levels but flash users spent more time with glucose levels in the hypoglycaemic range. **The evidence review notes that the risk of bias from the retrospective cohort study by Kerssen et al is 'very serious'.** This and other important caveats regarding the evidence for flash use should be reflected in the recommendations 1.3.17 to 1.3.23 • Study design: The study aimed to analyse patterns of CGM data associated with large for gestational age infants and adverse neonatal outcomes. This study was not designed to compare flash with continuous glucose monitoring. • Selection bias: Firstly, there were *important baseline differences* between women using CGM and flash - CGM users had a significantly longer duration of type 1 diabetes (17 vs 14 years; P<0.05) and were more likely to use insulin pumps (42% vs 16%; p<0.001). Both of	

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				these factors impact maternal glucose levels and pregnancy outcomes. Secondly, women not already using CGM made their own choice between flash and CGM. Thirdly, almost one third (32%) of CGM profiles were excluded (compared to 12% Flash profiles) from the study. Furthermore, all women using the Medtronic CGM devices (used in the CONCEPTT trial) were excluded.	
Dexcom	Evidence Review	130	004 - 019	We request that Secher AL RCT is excluded from the included studies. Secher AL RCT did not use CGM continuously during pregnancy– in Secher 2013, only 7% of women (5 participants) used CGM for at least 60% of the time and remaining participants used CGM intermittently.	*Thank you for your comment. As highlighted in the committee's discussion and interpretation of the evidence section (1.1.11) Secher 2013 was downgraded for indirectness for this reason. The directness of the evidence was taken into consideration when assessing the overall quality of the evidence.*
Dexcom	Guideline	009	008	This explanation of Real Time Continues Glucose Monitoring (rt-CGM) does not accurately encapsulate these systems features. This section should give the committee the information they require to accurately differentiate between FLASH and rt-CGM. As the assessment considers the Dexcom G6 rt-CGM system, we request that you amend this section to the following. "During normal use, rt-CGM systems measure glucose concentration in the subcutaneous interstitial fluid. Glucose concentration estimates are **automatically** sent from the transmitter to the receiver at 5-minute intervals and can be checked throughout the day by the person wearing the sensor and transmitter without the need to perform a SMBG test **or scan to receive their glucose measurements**, unless their symptoms do not match their readings. Alerts can be set to respond to abnormal glucose concentrations or rates of change, which can help users to increase their time in range and mitigate both hypoglycaemia and hyperglycaemia[1]. The G6 rt-CGM also includes a predictive alert (urgent low soon alert) that will indicate when the glucose concentration is falling so fast it will reach or fall below 3.1 mmol/L *in less than 20 minutes*. Incorporation of a predictive low glucose alert into the G6 significantly reduced hypoglycemia relative to a CGM system without the predictive alert[2,3]. This functionality	*Thank you for your comment. The studies included in the references were not included in the review as these did not include the population of interest. The committee have updated the definitions provided in the evidence review (Section 1.1.3). Terms used in the recommendations have also been updated and term intermittently scanned CGM (isCGM) is used.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				empowers the user to take early and appropriate action, potentially averting a hypoglycaemic event that is both detrimental to the individual's quality of life and costly to the NHS. In addition to this, the G6 potentially reduces rebound hyperglycaemia that sometimes follow a hypoglycaemic event[4] Through the G6 rt-CGM app, data can be uploaded and distributed continuously with the Share function. Connected individuals using the Follow app can monitor the person with diabetes glucose data continuously and be alerted to abnormal glucose values in the person wearing the G6 rt-CGM. The ability of the G6 rt-CGM to provide real time glucose data to the user and continuously to the follower has been shown to improve glycaemic control[5]. References: 1. Parker AS, Welsh J, Jimenez A, Walker T. Insights from big data (1): Viewing of real-time continuous glucose monitoring data and its impact on time in range. Diabetes Technol Ther. 2018 2. Puhr, S., Derdzinski, M, Welsh, JB, Parker, AS, Walker, T, Price, DA. (2019). "Real-World Hypoglycemia Avoidance with a Continuous Glucose Monitoring System's Predictive Low Glucose Alert." Diabetes Technol Ther **21**(4): 155-158. 3. Puhr, S., Derdzinski, M, Parker, AS, Welsh, JB, Price, DA. (2020). "Real-World Hypoglycemia Avoidance With a Predictive Low Glucose Alert Does Not Depend on	

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Frequent Screen Views." J Diabetes Sci Technol: 14(1):83-86. 4. Giada Acciaroli et al "266-OR: Rebound Hyperglycemia in Real-World Data and Its Mitigation with a CGM-Based Predictive Alert" presented at American Diabetes Association, 2020 Parker A, Welsh J, Jimenez A, Graham C. Effects of sharing continuous glucose monitoring (CGM) data from young children with diabetes on CGM usage and hypoglycemic exposure. Pediatr Diabetes. 2017;18(S25):76-77	
Dexcom	Guideline	009	038	It is very concerning that recommendations are suggested in this guideline without sufficient randomised clinical trials that evaluate flash glucose monitoring versus SMBG. This is important as SMBG is still recommended in the current NG3 guidance as standard of care (NG3 1.1.13).	*Thank you for your comment. The committee were aware that there is lack of sufficient RCTs evaluating flash glucose monitoring versus SMBG. Recommendation 1.1.13 covers women planning pregnancy. Only one study was identified which evaluated the use of CGM versus SMGB in this population. The study could not differentiate between the two interventions for important outcomes such time in target glucose range. Due to the lack of evidence the committee were unable to make specific recommendations for CGM in women with type 1 diabetes planning to become pregnant.* *The committee's full discussion and interpretation of evidence is highlighted in section 1.1.11 of the evidence review.*
Dexcom	Guideline	024	001	We request that it is clearly stated which recommendations in sections 1.3.17 to 1.3.23 were established through the committee experience, versus robust randomised trial and observational data. It is important to note that evidence observed in randomised trials supports the use of rt-CGM in improving maternal glucose levels, reducing caesarean sections and neonatal intensive care unit admissions. Observational data implies that flash and CGM users achieved similar glucose	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				levels but flash users spent more time with glucose levels in the hypoglycaemic range.	*state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes..* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*
Dexcom	Guideline	025	001	The NG3 evidence review document states that, based on high quality randomised controlled trial data, continuous glucose monitoring (CGM) resulted in, more women achieving blood glucose targets, fewer caesarean sections and fewer neonatal intensive care unit (NICU) admissions. It was highlighted by the committee that robust evidence supporting the use of flash glucose monitoring in pregnant women with type 1 diabetes was required. While we completely indorse this statement, it would seem that this is not reflective of draft recommendations which are heavily weighted towards flash. This inability to differentiate between high quality RCT evidence and data obtained from a retrospective cohort study significantly increases the uncertainty of the proposed guidelines and may reduce the relevance to the clinical community.	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*
Dexcom	Guideline	025	004	We find it very concerning that no differences between FLASH and CGM in hypoglycaemic range were reflected in the recommendations. The NG3 evidence review states that there was 'some evidence that CGM results in less time spent below target than flash (Kristensen et al. 2019). In principle, this may have some beneficial effects including reduced hypoglycaemic events; unfortunately, no such benefit was observed in the study'. This is potentially misleading as the study was designed to examine large for gestational age infants and adverse neonatal outcomes thus maternal clinical hypoglycaemia events were not recorded. CGM users spent significantly less time in	*Thank you for your comment.* *No evidence was found to suggest that time in range was associated with improved outcomes in this population. The evidence review did not find a significant effect of CGM on severe hypoglycaemia.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				hypoglycaemia in the first, second and third trimesters. Flash users spent strikingly high (10%) time with glucose levels below target (2.4hours/day with glucose levels <3.5mmol/L) including during the third trimester. This is twice as high as CGM users and even higher than SMBG users in CONCEPTT, this should be clearly stated. Hypoglycaemia (and fear of hypoglycaemia) is the major barrier for achieving target glucose levels in pregnant women with type 1 diabetes. Outside of pregnancy, there is an association between percentage time below range and severe hypoglycaemia[1]. Polonsky et al. The Impact of Continuous Glucose Monitoring on Markers of Quality of Life in Adults With Type 1 Diabetes: Further Findings From the DIAMOND Randomized Clinical Trial. Diabetes Care. 2017 Jun;40(6):736-741.	*The committee believed that it was plausible that improved neonatal outcomes were associated with improved time in range.* *Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.* *Additionally, Polonsky et al. was not included in this review as it did not include the population of interest of pregnant women.*
Dexcom	Guideline	029	033	We are concerned that recommendations are suggested without the results of a properly powered randomised clinical trial comparing rtCGM versus isCGM. This results in the vast majority of the parameters used to inform the FLASH arm of the CEA being taken from committee decision. This introduces a potentially unacceptable level of uncertainty in to the model.	Thank you for your comment. The model assumptions are clearly stated. Assumptions were necessary where there was no relevant data available covering the target population.
Dexcom	Guideline	111	002 - 003	The NG3 evidence review highlights that the risk of bias from the retrospective cohort study by Kerssen et al is 'very serious'. Along with this, other important limitations regarding the evidence for the use of Flash in this area should be reflected in the recommendations 1.3.17 to 1.3.23 1. Study design: The study aimed to analyse patterns of CGM data associated with large for gestational age infants and adverse neonatal outcomes. This study was not designed to compare flash with continuous glucose monitoring. 2. Selection bias: Firstly, there were *important baseline differences* between women using CGM and flash - CGM users had a significantly longer duration of type 1 diabetes (17 vs 14 years; P<0.05) and were more likely	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				to use insulin pumps (42% vs 16%; p<0.001). Both of these factors impact maternal glucose levels and pregnancy outcomes. Secondly, women not already using CGM made their own choice between flash and CGM. Thirdly, almost one third (32%) of CGM profiles were excluded (compared to 12% Flash profiles) from the study. Furthermore, all women using the Medtronic CGM devices (used in the CONCEPTT trial) were excluded. In addition to this the economic modeling was using the Dexcom G6 that includes an urgent low soon alert.	*women who are unable to use CGM and those who express a clear preference for it.*
Dexcom	Guideline	112	001	The NG3 evidence review highlights that the risk of bias from the retrospective cohort study by Kerssen et al is 'very serious'. Along with this, other important limitations regarding the evidence for the use of Flash in this area should be reflected in the recommendations 1.3.17 to 1.3.23 • Study design: The study aimed to analyse patterns of CGM data associated with large for gestational age infants and adverse neonatal outcomes. This study was not designed to compare flash with continuous glucose monitoring. • Selection bias: Firstly, there were *important baseline differences* between women using CGM and flash - CGM users had a significantly longer duration of type 1 diabetes (17 vs 14 years; P<0.05) and were more likely to use insulin pumps (42% vs 16%; p<0.001). Both of these factors impact maternal glucose levels and pregnancy outcomes. Secondly, women not already using CGM made their own choice between flash and CGM. Thirdly, almost one third (32%) of CGM profiles were excluded (compared to 12% Flash profiles) from the study. Furthermore, all women using the Medtronic CGM devices (used in the CONCEPTT trial) were excluded. In addition to this the economic modeling	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes..* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				was using the Dexcom G6 that includes an urgent low soon alert.	
Dexcom	Guideline	126	012 - 020	We are concerned that the model does not utilize real-time CGM values in estimating short term changes in A1c values for this patient population. Without the association of short-term treatment effects to observed outcomes, the modelling here would seem to under-estimate the treatment effect and not differentiate between devices and associated outcomes.	*Thank you for your comment.* *Due to the short timescale of pregnancy and small magnitude of the differences (lower than the MID) in HbA1c the committee were comfortable that it would have a negligible impact on the model.*
Dexcom	Guideline	128	043	It is stated that "*The selected studies should report a population that closely matches the UK population (ideally, they should come from the UK population).*" Yet the data utilised to inform the CEA was taken from a non-UK and non RCT source. This continues to increase the uncertainty and compromise validity in the results of the CEA.	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes..* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*
Dexcom	Guideline	130	006 - 009	We are concerned about the stated methods used in the model, as differentiation between treatment effect and outcomes is not clearly stated. It is stated that in all cases differences were expressed relative to SMBG (despite no current studies have been included for Flash versus SMBG). This involved indirect comparisons for Flash and where no data are available, and the assumption was made that where no data exists, Flash would have the same effectiveness as CGM. Evidence supporting a clear distinction of treatment effect and its impact on specific outcomes should be considered, otherwise the validity of the model may be at risk of not differentiating between interventions.	*Thank you for your comment* *In both referenced studies, the population was not consistent with the population for this review question. The studies excluded pregnant women or women planning a pregnancy.* *The model assumptions are clearly stated. Assumptions were necessary where there was no relevant data available covering the target population*.

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				The committee should consider the findings from I HART CGM, Ruddy et al (2019), in this analysis clear difference in outcomes between rt-CGM and FLASH are evident and should be taken in to consideration by the committee. **See comment 14 for a summary of the I HART CGM results.** 1. Reddy M, Jugnee N, El Laboudi, A, Spanudakis E, Anantharaja, S, Oliver N. A Randomized Controlled Pilot Study of Continuous Glucose Monitoring and Flash Glucose Monitoring in People with Type 1 Diabetes and Impaired Awareness of Hypoglycemia. *Diabet Med.* 2018; 35:483-90 2. Reddy M, Jugnee N, Anantharaja S, Oliver N. Switching from Flash Glucose Monitoring to Continuous Glucose Monitoring on Hypoglycemia in Adults with Type 1 Diabetes at High Hypoglycemia Risk: The Extension Phase of the I HART CGM Study. Diabetes Technol Ther. 2018; 20(11)	
Dexcom	Guideline	130	025 - 030	As the report states, no evidence was obtained regarding the length of stay in a post-natal or NICU ward for FLASH. As these parameters will influence the results of the model, again this increases the uncertainty and validity of the results of the analysis.	*Thank you for your comment.* *Assumptions were necessary where there was no relevant data available covering the target population. These assumptions are clearly stated.*
Dexcom	Guideline	130	037	We are very concerned that the clinical and health economic assumptions that Flash and CGM are equal are not supported by the data and this assumption was holey based on committee option. It is noteworthy that the glucose levels observed in the retrospective cohort study are similar to those obtained using self-monitoring of blood glucose (SMBG) in the CONCEPTT RCT. Differences between flash and SMBG users are negligible for key glycaemic measures including mean glucose (7.1 vs	*Thank you for your comment.* *The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				7.0mmol/L), time-in target glucose range 3.5-7.8mmol/L (60 vs 61%), time spent hyperglycaemic>7.8mmol/L (34 vs 32%). Therefore, the assumptions that Flash and CGM are equal are not supported by the data. Indeed, this data point to more similarities between Flash and SMBG. As such the following assumption is not supported by the data. 'we assumed that flash would have the same outcomes as CGM'. 'We assume, for babies that require NICU, duration of critical care is the same for flash as that for CGM. 'The committee was satisfied that there is no evidence of any meaningful clinical advantage of one over the other for the average pregnancy.' 'It is reasonable to assume the same level of process utility for CGM as for flash'. Despite broadly equivalent baseline levels, CONCEPTT CGM participants had lower mean glucose (6.7 vs 7.1mmol/L), higher time-in target range (68 vs 60%), less time hyperglycaemic (27 vs 34%), less time hypoglycaemic (3 vs 6%) and less glucose variability (CV 32 vs 36%) in comparison to those using flash or G4 in the observational study. This equates to an additional 2 hours per day with glucose levels in the pregnancy target 3.5-7.8mmol/L range, 1hr 45 minutes less hyperglycaemia >7.8mmol/L and 45 minutes less hypoglycaemic for CGM.	*redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes..* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*
Dexcom	Guideline	131	022 - 024	We are concerned that the committee did not consider the change in fear of hypoglycaemia (FoH) for CGM (HFS worry sub-scale) collected in RCTs for Type 1 diabetes patients[1]. The HFS Worry subscale has been mapped to the EQ-5D2 and would be important to consider in a cost-utility analysis evaluating interventions in Type 1 diabetes, where hypoglycemia has been shown to be associated with decreased health-related utility as a function of fear. The adjusted difference of the change in FoH (HFS Worry) between CGM and SMBG was 3.17 from the 24-week RCT[1], then mapped to the EQ-5D (3.17 x 0.008 = 0.0256). Therefor the total utility for treatment benefit of CGM is additive to the	*Thank you for your comment.* *None of the studies listed were carried out in the population for this review question.* *Table HE10 shows the effect of varying the utility for CGM between 0 and 0.12 which includes the QoL derived in this comment.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				0.03 Qol benefit of avoiding finger-sticks. The total utility for CGM then should be 0.05536 (0.03+ 0.0256)[3] 1. Polonsky et al. The Impact of Continuous Glucose Monitoring on Markers of Quality of Life in Adults With Type 1 Diabetes: Further Findings From the DIAMOND Randomized Clinical Trial. Diabetes Care. 2017 Jun;40(6):736-741. 2. Currie CJ, Morgan CL, Poole CD, Sharplin P, Lammert M, McEwan P. Multivariate models of health-related utility and the fear of hypoglycaemia in people with diabetes. Curr Med Res pin 2006;22:1523–1534 3. Stéphane Roze, John Isitt, Jayne Smith-Palmer, Mehdi Javanbakht, Peter Lynch, Long-term Cost-Effectiveness of Dexcom G6 Real-Time Continuous Glucose Monitoring Versus Self-Monitoring of Blood Glucose in Patients With Type 1 Diabetes in the U.K. Diabetes Care 2020 Jul; dc192213	
Dexcom	Guideline	131	037	It is notable that the RCT data informed the rt-CGM input parameters and yet it was deemed appropriate to seek the committees option for following input parameters regarding FLASH: • NICU duration difference • Postnatal ward log-odds ratio • Postnatal ward duration difference This is a major limitation of this analysis and may add an unacceptable level of bias in to the model.	*Thank you for your comment.* *Assumptions were necessary where there was no relevant data available covering the target population. These assumptions are clearly stated are were explored extensively in sensitivity analysis.* *Having revisited the economic model, the committee felt that the outcomes for which there was no available evidence were likely – based on their clinical experience – to favour CGM.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes.
Dexcom	Guideline	132	003 - 005	We are concerned with the statement that while CGM's has benefits of hypoglycaemic alarms over flash, the committee members were content to consider this equivalent between the devices. The hypoglycaemic alarm (available only on CGM) provides the potential for avoiding a severe hypoglycaemic event and rebound hypoglycaemia[1,2,3], thus bringing value to the patients at risk, and avoiding resources expended by caregivers and hospitals. In addition to this, the fact that the time spent in time spent in normoglycemia is linked to better neonatal outcomes[4] it would be prudent for the committee to consider the findings from Reddy 2019 (I HART CGM)[5,6]. While this analysis was not conducted in a pregnant Type 1 diabetic population. It is still the only head to head randomized, non-masked, parallel-group study considering rt-CGM vs FLASH and should be seen as a good sours of evidence to inform the committee options on the clinical utility of rt-CGM vs FLASH. The primary outcome of I HART CGM was change in time spent in hypoglycemia (<60 mg/dL) from baseline to 8 weeks with rt-CGM vs. FLASH. Secondary outcomes included: 1. % time spent in hypoglycemia (<50 mg/dL, <63 mg/dL, <70 mg/dL), 2. % of time spent in normoglycemia (70-140 mg/dL, 70-180 mg/dL), 3. % of time spent in target (70-140 mg/dL) 4. % of time spent in hyperglycemia (>140 mg/dL, >180 mg/dL, >270 mg/dL)	*Thank you for your comment.* *None of the studies listed were carried out in the population of interest (pregnant women or those planning a pregnancy) for this review question. Furthermore Puhr et al. (2020) and Giada Acciaroli et al (2020) were published after the search for our evidence review was conducted (December 2019).* *The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that flash can be offered to women who are unable to use CGM or express a clear.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				5. Hypoglycemia fear (as assessed by the Hypoglycemia Fear Survey [HFS] **Outcome (% Time Spent in Hypoglycemia),** patients using rt-CGM spent significantly less time in hypoglycemia than patients using FLASH (<50 mg/dL: -2.5%, p=0.003; <60 mg/dL: -4.3%, p=0.006; <63 mg/dL:-4.8%, p=0.0004; <70 mg/dL: -3.3%, p=0.01**). There was a significant reduction in percentage time in hypoglycaemia in the group switching from flash to rt-CGM in the extension phase (from 5.0 [3.7–8.6]% to 0.8 [0.4–1.9]%, P = 0.0001**), whereas no change was observed in the RT-CGM group continuing with the additional 8 weeks of rt-CGM. **Outcome (% Time Spent in Normoglycemia),** there were no significant differences in change from baseline to endpoint in time spent in target glucose range (70-140 mg/d, 70-180 mg/d) between the two groups**. After the extension phase, time in target increased in the flash group after switching to rt-CGM (60.0 [54.5–67.8] vs. 67.4 [56.3–72.4], P = 0.02) and remained the same in the rt-CGM group that continued with rt-CGM.** **Outcome (Fear of Hypoglycemia)**: Participants in the rt-CGM group reported a statistically significant reduction in fear of hypoglycemia (p=0.02) and worry about hypoglycemia (p=0.02) compared with patients using flash glucose monitoring. 1. Puhr, S., Derdzinski, M, Welsh, JB, Parker, AS, Walker, T, Price, DA. (2019). "Real-World Hypoglycemia Avoidance with a Continuous Glucose	

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Monitoring System's Predictive Low Glucose Alert." Diabetes Technol Ther **21**(4): 155-158. 2. Puhr, S., Derdzinski, M, Parker, AS, Welsh, JB, Price, DA. (2020). "Real-World Hypoglycemia Avoidance With a Predictive Low Glucose Alert Does Not Depend on Frequent Screen Views." J Diabetes Sci Technol: 14(1):83-86. 3. Giada Acciaroli et al "266-OR: Rebound Hyperglycemia in Real-World Data and Its Mitigation with a CGM-Based Predictive Alert" presented at American Diabetes Association, 2020 4. Murphy, H. R. (2019). "Continuous glucose monitoring targets in type 1 diabetes pregnancy: every 5% time in range matters." Diabetologia **62**(7): 1123-1128. 5. Reddy M, Jugnee N, El Laboudi, A, Spanudakis E, Anantharaja, S, Oliver N. A Randomized Controlled Pilot Study of Continuous Glucose Monitoring and Flash Glucose Monitoring in People with Type 1 Diabetes and Impaired Awareness of Hypoglycemia. *Diabet Med*. 2018; 35:483-90 6. Reddy M, Jugnee N, Anantharaja S, Oliver N. Switching from Flash Glucose Monitoring to Continuous Glucose Monitoring on Hypoglycemia in Adults with Type 1 Diabetes at High Hypoglycemia	

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Risk: The Extension Phase of the I HART CGM Study. Diabetes Technol Ther. 2018; 20(11)	
Dexcom	Guideline	133	005	For the committee to assume equal values in QoL utility for rt-CGM and FLASH is not representative of the current evidence base. As previously highlighted change in fear of hypoglycaemia (FoH) for CGM (HFS worry sub-scale) collected in RCTs for Type 1 diabetes patients[1]. The HFS Worry subscale has been mapped to the EQ-5D[2] and would be important to consider in a cost-utility analysis evaluating interventions in Type 1 diabetes, where hypoglycemia has been shown to be associated with decreased health-related utility as a function of fear. The adjusted difference of the change in FoH (HFS Worry) between CGM and SMBG was 3.17 from the 24-week RCT[1], then mapped to the EQ-5D (3.17 x 0.008 = 0.0256). Therefor the total utility for treatment benefit of CGM is additive to the 0.03 Qol benefit of avoiding finger-sticks. **The total utility for CGM then should be 0.05536 (0.03+ 0.0256)[3]** 1. Polonsky et al. The Impact of Continuous Glucose Monitoring on Markers of Quality of Life in Adults With Type 1 Diabetes: Further Findings From the DIAMOND Randomized Clinical Trial. Diabetes Care. 2017 Jun;40(6):736-741. 2. Currie CJ, Morgan CL, Poole CD, Sharplin P, Lammert M, McEwan P. Multivariate models of health-related utility and the fear of hypoglycaemia in people with diabetes. Curr Med Res pin 2006;22:1523–1534 Stéphane Roze, John Isitt, Jayne Smith-Palmer, Mehdi Javanbakht, Peter Lynch, Long-term Cost-Effectiveness of Dexcom G6 Real-Time Continuous Glucose	*Thank you for your comment.* *None of the studies listed were carried out in the population of interest (pregnant women or women planning a pregnancy) for this review question.* *Table HE10 shows the effect of varying the utility for CGM between 0 and 0.12 which includes the QoL stated in this comment.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Monitoring Versus Self-Monitoring of Blood Glucose in Patients With Type 1 Diabetes in the U.K. Diabetes Care 2020 Jul; dc192213	
Dexcom	Guideline	134	001	This is the incorrect price for the Dexcom G6. As communicated by NHS England for pregnant women with type 1 diabetes the ceiling rate for rt-CGM of £2,000 per patient per year will be applied. It is suggested that the CEA uses this value as their base rate.	*Thank you for your comment.* *The economic model has been rerun to reflect the NHS ceiling price.*
Dexcom	Guideline	134	014	We are concerned that the committee may have underestimated use of SMBG in individuals using flash. The evidence suggests that T1D patients at risk of hypoglycaemia and using flash may experience an SMBG-indicated state up to 5 times per day[1]. The authors state that they utilised the manufacturer's UK regulatory-approved label to outlines a set of criteria for when confirmatory capillary blood glucose test is indicated: The percentage of values meeting one or more of the criteria for SMBG testing was calculated for each participant if a value (expressed as hours per day) met one of the SMBG testing criteria if: 1. it was <70 mg/dL 2. the rate of change was >2 mg/(dL.min) 3. the estimated glucose value in the next 15 min was predicted to be <70 mg/dL based on the current rate of change (impending hypoglycaemia) The evidence indicates that continued SMBG testing may be required at a far higher levels for individuals with hypo-risk using flash. Monika Reddy and Nick Oliver.Diabetes Technology & Therapeutics.Mar 2020.235-238.http://doi.org/10.1089/dia.2019.0369	*Thank you for your comment.* *The referenced study is not carried out in the population of interest. Assumptions were necessary where there was no relevant data available covering the target population. These assumptions are clearly stated.* *The committee considered the increased ongoing use of finger-pricks upon revisiting the evidence.* *Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes..*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Diabetes Technology Network UK	Comment form questions	N/A	N/A	ABCD/DTN-UK has a portfolio of educational resources hosted on its website and developed in conjunction with NHS England and people with diabetes and to support users and health care professionals to use CGM in pregnancy. 1) Using diabetes technology in pregnancy Best Practice Guide - https://abcd.care/dtn/best-practice-guides 2) Educational videos and user stories for getting the most out of using CGM in pregnancy- https://abcd.care/dtn/CGM	*Thank you for your comment. The references provided were acknowledged by the committee however we are unable to provide links to these in the guideline.*
Diabetes Technology Network UK	General	General	General	***Q. What would help users overcome any challenges? (For example, existing practical resources or national initiatives, or examples of good practice.)*** We believe the recommendations to use continuous glucose monitoring in pregnancy will have benefits for women through the Covid pandemic, allowing greater facility for remote monitoring and reducing the need for face to face contact.	*Thank you for your comment.*
Diabetes Technology Network UK	Guideline	General	General	We consider that it is a serious oversight not to include target values for CGM time in range in this document – there are clear international evidence-based recommendations. – based on data from the CONCEPTT study about time in range values that are associated with better pregnancy outcomes. Please could these be included. *Battelino et at, Clinical Targets for Continuous Glucose Monitoring Data Interpretation: Recommendations From the International Consensus on Time in Range Diabetes Care .2019 Aug;42(8):1593-1603.* *Continuous glucose monitoring targets in type 1 diabetes pregnancy: every 5% time in range matters. Murphy HR.Diabetologia. 2019 Jul;62(7):1123-1128*	*Thank you for your comment. The committee were unable to make specific recommendations on time in range targets as this was outside the remit of the review question. However, the committee noted that these are well understood by clinicians and can be captured through CGM devices. They also stated that clinicians should discuss this with pregnant women and encourage them to spend more time in their personalised target glucose ranges.* *The committee's discussion and interpretation of evidence section (Section1.1.11) of the evidence review has been amended to further highlight the discussion.* *Additionally, as Battelino (2019) and Murphy (2019) were not systematic reviews or randomised control trials, these studies were not included in the evidence review. However, Battelino*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					(2019) was used to obtain minimally important differences (MIDs). See Appendix B of the evidence review for further information.
Diabetes Technology Network UK	Guideline	017 - 018	023	1.3.17-21 - ABCD Diabetes Technology Network is pleased that NICE has reviewed its recommendations for the use of continuous glucose monitoring technology in pregnancy. We fully support the use of both Flash and Continuous glucose monitoring (CGM) technology in people with diabetes, however we do not consider that these two glucose monitoring technologies are identical or interchangeable. They offer different features, usability and accuracy, and have different applicability and evidence base for use in different patient groups. Having collated views from across the DTN-UK committee, that consists of doctors and educators who are experts in the use of technology, our impression reading this section is that despite the robust evidence from CONCEPTT RCT supporting the use of CGM to improve glucose control and pregnancy outcomes in women with Type 1 diabetes (and in contrast the absolute lack of any RCT evidence supporting similar benefits from Flash) that NICE considers they are more or less interchangeable and appears to be recommending Flash first line. **Based upon the evidence we completely disagree.** CGM is the only glucose monitoring technology that has been robustly assessed to offer clinical benefit in pregnancy. The evidence from CONCEPTT supports that women with Type 1 diabetes need the high and low glucose alerts provided by CGM to help women with Type 1 diabetes achieve the tight pregnancy glucose target range required without unacceptable hypoglycaemia. this without excessive hypoglycaemia. **Flash does not offer these features and there are no data to suggest that women can achieve the same results without these features.**	*Thank you for your comment. The recommendations have been amended to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee also further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The rationale and impact section and committee's discussion and interpretation of evidence (1.1.11) have also been updated to highlight the committee discussion.* Haskova et al CORRIDA trial (2020) was not included as it was published in August 2020 whereas the literature searches for the evidence reviews were conducted in December 2019. Lin et al (2019) did not meet our inclusion criteria as it looked specifically at alarm settings for continuous glucose monitoring. Furthermore, the study was on Type 1 patients and not pregnant women. The PICO for this review question is highlighted in section 1.1.2 of the evidence review.

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Whilst we are aware that newer versions of the flash system offer alert features, we believe it is very strange for NICE to be commenting about a system that is not yet marketed in the UK and for which there is no published evidence. The increased sampling frequency (1 – 5 minutes) of CGM devices over current flash systems (15 minutes) may also be very important in pregnancy where the margin of error for hypoglycaemia is very low. It may be useful for the committee to be aware of recent published data in people with Type 1 diabetes that provides supporting evidence for our views: The recent head to head CORRIDA study demonstrated superiority of CGM over flash glucose monitoring. CGM was superior in reducing hypoglycemia and improving time in range in adults with T1D with normal hypoglycemia awareness, demonstrating the value of CGM with alarms in daily diabetes self-management. (Real-time CGM Is Superior to Flash Glucose Monitoring for Glucose Control in Type 1 Diabetes: The CORRIDA Randomized Control Trial; Haskova et al; Diabetes Care. 2020 Aug 28;dc200112). There is also published data showing that the presence of high alarms is associated with achieving greater time in range (Alarm Settings of Continuous Glucose Monitoring Systems and Associations to Glucose Outcomes in Type 1 Diabetes.Lin YK, Groat D, Chan O, Hung M, Sharma A, Varner MW, Gouripeddi R, Facelli JC, Fisher SJ.J Endocr Soc. 2019 Nov 19;4(1):bvz005). The observational paper by Kristensen that presents data on Flash and CGM in pregnancy has such significant limitations (observational data, no adjustments made for between group comparisons) that it cannot seriously be used to argue for Flash	

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				being the same as CGM in pregnancy. Indeed the evidence review performed by NICE recognises these limitations, so we cannot understand why after clearly saying this, the guidelines ignore the evidence review. **In pregnancy where achieving tight glucose control without compromising patient safety through hypoglycaemia is paramount, all the evidence points to recommending CGM as the glucose monitoring device of choice.** We therefore consider that the emphasis in this section is wrong and appears to have been constructed the wrong way round. Starting this section with not being able to use Flash when you've not said anything about it up to that point is counterintuitive. It also sends a very negative message about diabetes technology rather than the positive message that should be given based on high quality RCT evidence of the significant clinical and economic benefits of using CGM in pregnancy. We would respectfully suggest that this section is re-worded and re-organised. It appears to us that only two statements would suffice and make this whole section far clearer: 1) That CGM is offered to all women with type 1 diabetes in pregnancy to help women achieve tight pregnancy glucose targets safely without hypoglycaemia and improve pregnancy outcomes; 2) That Flash is offered second line only if women are unable to use CGM or express a clear preference not to. We were surprised and concerned about recommendation 1.3.21 as our understanding is that NICE looks at cost-effectiveness, so who is paying for it is irrelevant and out of place in such a guideline. There are clear health published economic benefits of using CGM shown by CONCEPTT. We are not aware of any such published data on Flash, and as	

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				discussed above the two devices cannot be considered interchangeable.	
Diabetes UK	Guideline	General	General	Diabetes UK welcomes the update to this guideline, and particularly the removal of the recommendation to "not offer continuous glucose monitoring routinely to pregnant women with diabetes." However, we are concerned that the proposed recommendations within the draft guideline around continuous glucose monitoring (CGM) may present a barrier to women with type 1 diabetes being offered CGM, despite its evidenced benefits and improvements in glucose control and neonatal outcomes. Further, we are disappointed with the limited remit of the scope and proposed updates included within the draft guideline. There are several areas we would urge NICE to consider updating, despite not having been considered in the scope or draft guideline. We have provided recommendations for these areas in our comments.	*Thank you for your comment. The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that flash can be offered to women who are unable to use CGM or express a clear preference for it. The committee discussion and interpretation of evidence section (Section 1.1.11) has also been amended to further highlight the committee's decisions.* *Prior to the development of the guideline, surveillance is conducted to identify areas in the guideline where new evidence has emerged. The areas that are identified for an update is determined by surveillance work.*
Diabetes UK	Guideline	General	General	No section of the draft guideline addresses the care that women and their partners should receive during pregnancy – such as counselling, support services addressing pregnancy and diabetes distress and preconception advice following an adverse outcome such as a stillbirth. There is growing evidence of the risks associated with obesity among pregnant women, such as gestational diabetes. Studies have shown that a diagnosis of gestational diabetes is a risk factor for these women and their offspring for cardiometabolic disease. The draft guideline should mention support and targeted, personalized intervention to help prevent excessive gestational weight gain, which may lead to the development of gestational diabetes and other complications in pregnancy.	*Thank you for your response. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.*
Diabetes UK	Guideline	017 - 018	022 – 026	1.3.17 – 1.3.23: **Continuous Glucose Monitoring (CGM) in pregnancy**	*Thank you for your comment. The recommendations have been amended to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
			001 – 023	The CONCEPTT study published in 2017 on the use of continuous glucose monitoring (CGM) during pregnancy in patients with Type 1 diabetes unequivocally demonstrated that continuous wear CGM improves both glucose control and neonatal outcomes - likely to be attributed to reduced exposure to maternal hypoglycaemia. Additionally, the use of CGM led to fewer caesarean sections being carried out. Based on this evidence, **we believe that this recommendation should be revised to recommend real-time continuous glucose monitoring (CGM) for all pregnant women with Type 1 diabetes as a first-line treatment.** This proposed recommendation is more consistent with the NHS long-term plan commitment and funding for all pregnant women with type 1 diabetes to be offered continuous glucose monitoring by 2021. We recommend that Flash should be offered to pregnant women in circumstances where the use of CGM is contraindicated, if hypersensitivities exist, or if using Flash is preferential – for instance, in cases where women used Flash prior to pregnancy and strongly prefer to continue with it. In these circumstances women should be offered the choice between CGM and Flash, as part of a joint decision-making process between the clinician and patient, where women are provided with appropriate information on the benefits and evidence of effect in improved outcomes for women and their babies of each device to allow women to make an informed choice. This process should also take note of the NHS funding provided for CGM for all pregnant women with type 1 diabetes from 01 October 2020. The National Pregnancy in Diabetes Audit report for 2018 found that 57% of women with Type 1 diabetes are currently failing to achieve the pregnancy target for glucose control by the third trimester, 54% of the infants of mothers with Type 1 diabetes were born large for gestational age, and 45% of babies born to mothers with Type 1 diabetes need neonatal intensive care	*glucose targets and improve neonatal outcomes.. The committee also further recommended that intermittently scanned CGM, (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The rationale and impact section and committee's discussion and interpretation of evidence (1.1.11) have also been updated to highlight the committee discussion.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				admission. We think that these negative outcomes risk being perpetuated if this recommendation does not address this issue. We note that the evidence review acknowledged trial evidence on CGM, but we do not agree with how the group has translated these results into the draft guideline, and specifically that of the evidence from the CONCEPTT trial. The committee noted that maternal outcomes such as time in target glucose range, hypoglycaemia and caesarean sections were important and critical outcomes of interest. The committee also further noted that neonatal outcomes such as large for gestational age and neonatal intensive care unit stay were also important outcomes. The evidence review concluded that "significant evidence was identified for important outcomes such as time in target glucose range, caesarean sections and high-level neonatal care stay, which all favoured the use of CGM in pregnancy. Additionally, outcomes such as number of women achieving HbA1c target and neonatal hypoglycaemia also favoured the use of CGM." The committee recommended that CGM can be offered as a choice to pregnant women with type 1 diabetes, but we are concerned that the proposed changes to recommendations 1.3.17 – 1.3.23 have not incorporated this conclusion clearly enough. In light of the coronavirus pandemic, we would also like to highlight the value reported by clinicians of being able and equipped to monitor women remotely when they were using CGM, which also reduced the exposure women had to coronavirus in clinic settings and on public transport if needed to attend a clinic. We would further recommend that the use of both CGM and Flash technologies by pregnant women with type 1 diabetes is audited so that the impact of each can be assessed going forward.	

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Diabetes UK	Guideline	006	001 - 013	1.1.7: **Advice for women planning to become pregnant** The most recent National Pregnancy in Diabetes Audit (2018) showed that only 12% of women were well prepared for pregnancy, which has not changed since 2014. The definition of "well prepared for pregnancy" includes a first trimester HbA1c below 48mmol/mol, taking 5mg of prescribed folic acid and coming off all adverse medication prior to pregnancy. The recommendations under 1.1.7 should address this.	*Thank you for your comment. Recommendations on the importance of planning pregnancy and the role of contraception are out of scope for this update.*
Diabetes UK	Guideline	006	026 – 028	1.1.11: **Folic acid** We are concerned that the advice within the draft guideline to take 5mg of folic acid per day does not specify that it is prescribed folic acid which should be taken, and not those sold over the counter in pharmacies, which are considerably lower in strength. Unless this is stipulated, women may not be made aware. This is particularly important for women with diabetes who have lower uptakes of folic acid, as reported in the National Pregnancy in Diabetes Audit (2018). The NPDA found that in 2018, 43.7% of women with type 1 diabetes took the recommended 5mg dose of folic acid prior to LMP (no change since 2014), whilst only 22.1% of women with Type 2 diabetes did (decrease of 1% since 2014).	*Thank you for your comment. Recommendations on the diet, dietary supplements and body weight are out of scope for this update*.
Diabetes UK	Guideline	009	021 – 026	1.1.28: **Education and Advice** The draft guideline refers to the education and information section in the NICE guideline on type 1 diabetes in adults and the patient education section in the NICE guideline on type 2 diabetes in adults. We appreciate that the education and information sections in the NICE guideline on type 1 diabetes in adults recommends that all adults with type 1 diabetes should be offered a structured	*Thank you for your comment. This is out of scope for this update*.

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				education programme of proven benefit, with specific reference to the DAFNE (dose adjustment for normal eating) programme. The DAFNE programme includes a specific module on pregnancy, and we suggest that this is referenced in the draft guideline. The patient education section in the NICE guideline on type 2 diabetes in adults recommends offering structured education to adults with type 2 diabetes, however, no specific programmes are mentioned. The diabetes self-management education programme DESMOND, a course for people with type 2 diabetes, includes a pregnancy module. This is provided to women of child-bearing age and informs them about the risks associated with diabetes and pregnancy and provides advice on preconception care and planning. We suggest the programme is referenced in the draft guideline.	
Diabetes UK	Guideline	011	007 - 021	1.2.2: **Assess the risk of gestational diabetes using risk factors in a healthy population** There is growing evidence that gestational diabetes testing should be done earlier in pregnancy and several ongoing studies are addressing the value of screening, diagnosing, and managing gestational diabetes in early pregnancy. A currently ongoing RCT trial identifies women with gestational diabetes using an oral glucose tolerance test early in pregnancy (<20 weeks) and will inform if early intervention can improve pregnancy outcomes. We suggest that the guideline recommend that HbA1c or fasting plasma glucose should be measured in early pregnancy to identify undiagnosed prediabetes and type 2 diabetes, allowing for timely, targeted intervention to improve outcomes. Note also the Royal College of Obstetricians and Gynaecologists' guidance on screening for gestational diabetes during the peak of the COVID-19 pandemic. This guidance	*Thank you for your response. This is out of scope for this update. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				recommends sites should return to pre-existing screening strategies, as outlined by NICE guidance, as soon as the local prevalence of coronavirus and risk of transmission in hospital settings permits. Further research proposes similar recommendations, including a strategy that utilises alternative simpler tests and mitigation safety-nets balancing gestational diabetes detection with minimising health service burden and viral exposure of women.	
Diabetes UK	Guideline	013	023	1.2.16: We suggest the advice given to women with gestational diabetes includes nutrition management. We recommend that this is part of a package of education and clinical care as specified in the Diabetes UK Nutritional Guidelines (2018). We specifically recommend that women diagnosed with gestational diabetes should be referred to a dietitian for dietary advice in order to optimise glycaemic control, aim to achieve appropriate weight gain, and take regular physical activity, including walking for 30 minutes after a meal to lower postprandial glucose concentrations. This section should also consider the evidence from the Institute of Medicine which shows that monitoring of weight during pregnancy is recommended and weight gain should not exceed the recommended rate of pre-pregnancy BMI set by the Institute of Medicine.	*Thank you for your response. This is out of scope for this update. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.*
Diabetes UK	Guideline	017	016 - 021	1.3.16: **Continuous subcutaneous insulin infusion (CSII)** While CSII is recommended during pregnancy for women with insulin-treated diabetes who are using multiple daily injections of insulin and do not achieve blood glucose control without significant disabling hypoglycaemia, we suggest that this guideline also recommend offering CSII during the preconception planning phase for women with diabetes whose blood glucose control is unobtainable by MDI.	*Thank you for your comment. This is out of scope for this update.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Diabetes UK	Guideline	018	016 – 023	1.3.22: We welcome the recommendation to extend Flash glucose monitoring and CGM use to a wider range of pregnant women on insulin therapy. The most recent National Pregnancy in Diabetes Audit (2018) found that, for the first time, pregnancy in women with type 2 diabetes was more common than in women with type 1 diabetes, which demonstrates the increased need to meet the clinical needs of this group of women. The NPDA also found that a higher rate of stillbirths occurs in type 2 (16.7 per 1000 live births), compared to in type 1 (10.4 per 1000 live births), and that this rate has increased since 2016. As such, we recommend that Flash glucose monitoring be offered to all pregnant women with type 2 diabetes with HbA1c greater than 48mmol/mol (6.5%) to help reduce their increased rates of stillbirth and neonatal death.	*Thank you for your comment. Type 2 diabetes was out of scope for the review question. The committee did retain recommendations and amended them to state that CGM can be considered for pregnant women who are on insulin therapy but do not have type 1 diabetes if they have problematic severe hypoglycaemia or they have unstable blood glucose levels that are causing concern despite efforts to optimise glycaemic control.*
Diabetes UK	Guideline	028	025 - 027	1.6.11: **For women who were diagnosed with gestational diabetes and whose blood glucose levels returned to normal after the birth.** We advise that the draft guideline should include the recommendations given on weight control, diet and exercise from the Diabetes UK 2018 Nutritional Guidelines. Breastfeeding is recommended for women with gestational diabetes to reduce neonatal hypoglycaemia, improve insulin sensitivity, and may also reduce maternal risk of developing Type 2 diabetes. Women with previous gestational diabetes have an increased lifetime risk of developing Type 2 diabetes, and their offspring are at higher risk of developing childhood obesity. Specific postpartum advice on lifestyle modification should be included in the guidance's recommendations.	*Thank you for your response. This is out of scope for this update. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Diabetes UK	Guideline	030	022 - 023	1.6.14: **Offer an annual HbA1c test to women with gestational diabetes who have a negative postnatal test for diabetes.** We agree that women with gestational diabetes who have a negative postnatal test for diabetes should be offered an annual HbA1c test, however, greater clarity needs to be given on where the HbA1c test should be performed and by whom. This is not happening, and research has shown that the lack of a clear pathway with a designated healthcare professional to coordinate this testing has meant that in the first year post-delivery, only 58% women diagnosed with gestational diabetes had an oral glucose tolerance test. It is also known that 50% of people diagnosed with gestational diabetes develop Type 2 diabetes within five years. The guidance should address these issues, so people receive timely care and support in managing diabetes and aren't lost to between primary and secondary care or to follow up.	*Thank you for your response. This is out of scope for this update. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.*
East Suffolk and North Essex NHS Foundation Trust	Guideline	014	028	1.2.24 - Glibenclamide is no longer manufactured in this country, so cannot be considered as an alternative oral medication for use with women who cannot tolerate metformin or decline insulin therapy	*Thank you for your comment. Reference to glibenclamide has been removed from the guideline.*
East Sussex NHS Healthcare Trust	Guideline	General	General	New thing is CGM for T1DM. And we are already offering Libre for all Type1 and also type 2 diabetes patients (some) during pregnancy, and there is ongoing discussion at STP (?whatever it is new term) regarding the funding for CGM for all type 1 dm. (Probably some of the type 2 diabetes or Insulin treated patients with hypoglycaemia or hypoglycaemic unawareness should be considered for CGM with alert system)	*Thank you for your comment. Type 2 diabetes is out of scope for this update. The committee did retain recommendations which state that CGM can be considered in women who are on insulin but do not have type 1 diabetes if they have problematic severe hypoglycaemia or they have unstable blood glucose levels that are causing concern despite efforts to optimise glycaemic control.*
East Sussex NHS	Guideline	General	General	It is mentioned about using detemir and Lantus (out off licence), need to ask them about other newer Insulin Tresiba / Toujeo	*Thank you for your comment. This is out of scope for this update.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Healthcare Trust				(as we had couple of patients continued with tresiba (of course after explaining about out off Licence use) locally	
East Sussex NHS Healthcare Trust	Guideline	General	General	Our main issue is, what to do for the patients after 34 weeks of gestation ,if they have a big baby or increased amniotic fluids, Should we be preforming a GTT or do a period of glucose monitoring t.	*Thank you for your comment. This is out of scope for this update.*
East Sussex NHS Healthcare Trust	Guideline	General	General	Is there Any guidance on premeal BG targets.	*Thank you for your comment. Target blood glucose and HbA1c level before pregnancy is covered by recommendations 1.1.16-1.1.23. Target blood glucose levels for pregnant women is covered by recommendations 1.3.4- 1.3.6.*
Herefordshire and Worcestershire Clinical Commissioning Group	Guideline	017	023	This point differs slightly in tone from NHSE recommendation they published on the 29th September 2020. NHSE states that if CGM (Continuous Glucose Monitoring) not acceptable, then Flash Glucose Monitoring (FlashGM) may be preferential and these women should be offered a choice between CGM and FlashGM. The NHSE recommendation seems to suggest that FlashGM should only be offered if CGM has been considered not acceptable. Whereas this guideline seems to indicate that FlashGM should be considered before CGM. It would be helpful to clarify this difference as FlashGM first line would reduce the financial impact significantly.	*Thank you for your comment. The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help women achieve pregnancy glucose targets and better neonatal outcomes. The committee further noted that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it.*
Herefordshire and Worcestershire Clinical Commissioning Group	Guideline	018	016	NHSE recommend CGM in pregnancy only for patients with type 1 diabetes, this guidance indicates it should also be considered in more complex type 2 patients. This could increase patient numbers significantly and would have serious financial implications. The last bullet point from this section is also quite open to interpretation. I would suggest that in most type 2 patients on insulin who are pregnant it would be useful to gain information about variability in blood glucose levels. Therefore, all type 2 patients on insulin could be eligible for CGM. CGM has not previously been routinely funded in Herefordshire and Worcestershire, so to fund for type 1 patients is a development. Type 2 patients would be a separate consideration.	*Thank you for your comment. Type 2 diabetes was outside the remit of this update; therefore, a review could not be conducted to cover this population. However, the committee noted that recommendations were required to cover women who are on insulin therapy but do not have type1 diabetes.* *The committee reviewed the recommendation and have amended it further to state that continuous glucose monitoring should be considered for pregnant women who are on insulin therapy but do not have type 1 diabetes if they have problematic severe hypoglycaemia (with or without impaired awareness of hypoglycaemia) or they have unstable blood glucose levels that*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
					are causing concern despite efforts to optimise glycaemic control. *The committee stated that it was important to identify the specific population who need continuous glucose monitoring. The committee's discussion and interpretation of evidence section (Section 1.1.11) in the evidence review has been amended to further highlight the committee views.*
Juvenile Diabetes Research Foundation	Guideline	General	General	We are concerned that this draft guideline places too strong an emphasis on flash glucose monitoring, when the evidence from the CONCEPTT[1] study that is referred to throughout the evidence review relates to real-time CGM only, not flash glucose monitoring. Secondly, the NHS Long Term Plan includes the commitment that "by 2020/21, all pregnant women with type 1 diabetes will be offered continuous glucose monitoring, helping to improve neonatal outcomes." And finally, the recently circulated CGM FAQs by the Diabetes Clinical Network at NHS England to aid in the roll out of continuous glucose monitoring to pregnant women states that "For some women, for whom CGM is not acceptable, Flash IGM may be preferential and these women should be offered the choice between CGM and IGM, with appropriate information provided on the benefits and evidence of effect in improved outcomes for women and their babies of each device." As a patient organisation, the patient's experience is key. What follows is a series of quotes from a woman with type 1 diabetes	***Thank you for your comment. The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that flash can be offered to women who are unable to use CGM or express a clear preference for it. The committee discussion and interpretation of evidence section (Section 1.1.11) has also been amended to further highlight the committee's decisions.***

[1]CONCEPTT: Continuous Glucose Monitoring in Women with Type 1 Diabetes in Pregnancy Trial: A multi-center, multi-national, randomized controlled trial, Feig et al; July 2016 https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-016-0961-5

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				who used continuous glucose monitoring throughout her pregnancy: "CGM was crucial in my pregnancy. I have an extremely entrenched fear of low blood sugar. So much so that when I eventually came of child bearing age, bearing an actual child wasn't something I could fathom. There was no way I could keep my blood glucose that low for the whole duration of a pregnancy. But as I approached my mid 30s, I had been on CGM for a number of years. After a few wobbles at the start, I soon learned to embrace and trust CGM wholeheartedly. My trust in the technology coupled with the amazing knowledge and support of my team at St Thomas hospital gave me the confidence to undertake a pregnancy. It was a difficult pregnancy but it would have been a hundred times harder - nay, unbearable - if I was constantly worried about passing out from low blood sugar, or high blood sugar for that matter (hello, insulin resistance in the later trimesters!). Now I can't imagine life without my child. She brings so much joy to me, and to others. I thank the NHS and CGM for the gift of her." We strongly recommend that continuous glucose monitoring should be offered to all pregnant women with type 1 diabetes in the first instance, and flash glucose monitoring offered only if the woman prefers it.	
Leeds Teaching Hospitals NHS Trust	Comment form question 3	N/A	N/A	To aid user and health care professional (HCP) implementation and to align with NICE recommendations that give glucose targets for self monitored blood glucose (SMBG), please can you consider including the internationally agreed CGM time in range targets for pregnancy (Battelino T et al. Diabetes Care 2019 Aug;42(8):1593-1603). This would help HCP teams and users immensely. The CGM glucose target range for women with Type 1 diabetes in pregnancy is between 3.5 and 7.8 mmol/l. It is recommended that women aim to spend >70% of their time in this range, less than 25% of their time above this	*Thank you for your comment. The committee were unable to make specific recommendations on time in range targets as this was outside the remit of the review question. However, the committee noted that these are well understood by clinicians and can be captured through CGM devices. They also stated that clinicians should discuss this with pregnant women and encourage them to spend more time in their personalised target glucose ranges.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				range, and less than 4% of their time below this range. Another important message to get across is that improving the amount of 'time spent in range' by as little as 5% is associated with clinically relevant improvements in neonatal health outcomes (Conceptt and Kristensen data).	*The committee's discussion and interpretation of evidence section (Section1.1.11) of the evidence review has been amended to further highlight the discussion.* *Additionally, as Battelino (2019) and Murphy (2019) were not systematic reviews or randomised control trials, these studies were not included in the evidence review. However, Battelino (2019) was used to obtain minimally important differences (MIDs). See Appendix B of the evidence review for further information.*
Leeds Teaching Hospitals NHS Trust	Comment form question 3	N/A	N/A	There are lots of resources available from ABCD/DTN-UK made in conjunction with NHS England that will support users and HCP to use CGM in pregnancy. It would be great to signpost these. 3) ABCD/DTN Using diabetes technology in pregnancy Best Practice Guide - https://abcd.care/dtn/best-practice-guides 4) ABCD/DTN educational videos and user stories for getting the most out of using CGM in pregnancy- https://abcd.care/dtn/CGM	*Thank you for your comment. The committee acknowledged the practice guides referenced however we are unable to provide links to these resources in the guideline.*
Leeds Teaching Hospitals NHS Trust	Guideline	017 - 018	023	1.3.17-21 - Despite the high quality evidence from an international, multicentre Randomised Controlled Trial (RCT) that unequivocally showed the benefits of Continuous Glucose Monitoring (CGM), the way in which this section has been written gives the clear impression that Flash glucose monitoring and not CGM should be offered first line for women with Type 1 diabetes (T1DM) during pregnancy. This may not have been the intention but by having 1.3.17 as the first statement, with caveats later on who may benefit from receiving CGM in 1.3.18-20, NICE have successfully managed to make this look way more complicated than it needs to be. Contraindications or hypersensitivity to Flash are such	*Thank you for your comment. The recommendations have been amended to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.. The committee also further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The rationale and impact section and committee's discussion and interpretation of evidence (1.1.11) have also been updated to highlight the committee discussion.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				insignificant issues clinically in pregnancy that to have this as the first statement (1.3.17) looks completely out of touch. This impression that Flash should be used first-line rather than CGM is at odds with NICE's evidence review which clearly notes the significant benefits of CGM for glucose control and neonatal outcomes from the CONCEPTT RCT. It is hard to understand why this is the stance taken when there have been **no** RCT of Flash glucose monitoring upon outcomes in T1DM pregnancy and **no** RCT designed to compare CGM with Flash in T1DM pregnancy. It is also at odds with the stance taken by NHS England Long term plan, Health Technology Wales, DUK, NPID, JDRF. This is confusing for clinical teams, particularly in light of the recent launch of CGM in pregnancy by NHS England and will serve to increase inequality in delivery of care across England. Evidence based guidelines should support the highest-grade evidence from rigorously conducted RCT, using lower grade observational data and consensus data as a fall-back position only when this evidence doesn't exist. The rationale and impact section (page 35) suggests that despite robust evidence from CONCEPTT, the one observational study (Kristensen K et al Diabetologia (2019) 62:1143–1153) that provides data on CGM and Flash in pregnancy and the 'experience of the committee' were given higher priority in making these recommendations. This is not appropriate as the Swedish study was NOT a study designed to compare Flash with CGM and has significant limitations. This means that it cannot be used as 'evidence' for recommending Flash over and above CGM, or even for considering that they are equal. Amongst all the other limitations that occur with using retrospective observational data, the fact that the baseline characteristics of the women who chose Flash or CGM were significantly different (e.g. duration of diabetes and	

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				pump use) means that the data on glucose control and outcomes between the two devices cannot be compared without adjustment for these differences. Furthermore, much of the CGM data was excluded from the analysis. So, it is just not possible to conclude that they offer the same benefits. As rightly indicated by NICE, more research is needed. Therefore, considering this papers weakness, it is advised that the committee reconsider its emphasis on recommending Flash to account for what appear to be an overinterpretation of this dataset. It is important to realise that Flash and CGM are not interchangeable. Whilst they share some common features in terms of giving data on glucose patterns over time, CGM offers far more – with alerts for hypoglycaemia and greater accuracy at detecting glucose in the lower ranges. Clinically the biggest barrier to women with Type 1 diabetes achieving the tight glucose control required for pregnancy is hypoglycaemia and fear of hypoglycaemia. It is also the biggest cause for hospital admission during pregnancy and maternal death. CGM allows women to safely achieve tight pregnancy glucose targets whilst avoiding spending time hypoglycaemic. Flash just doesn't do this to the same degree. Compare the time spent below range data using CGM in CONCEPTT and the Swedish study (only 5% of time spent below 3.5 mmol/l) to that of Flash in the Swedish study (10% of time spent below 3.5mmol/l). This may suggest that Flash is less favourable for women's safety. Whilst it is appreciated that the committee have included issues around problematic hypoglycaemia in the guidance for choosing CGM, it is worth reflecting that the evidence for CGM came from CONCEPTT RCT which did not select women to use CGM based on these rigid criteria. They allowed all women to use it irrespective of any degree of underlying hypoglycaemia problems. This evidence should be followed.	

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				In summary, RCT evidence from CONCEPTT clearly suggests that all women with T1DM should be offered CGM to improve glucose control (without suffering unnecessary hypoglycaemia) and to improve neonatal outcomes (and the economic benefits of this). Based on this an alternative clear and simple wording that is first and foremost evidence-based; aligned with current thinking and recommendations from Health Technology Wales and NHS England, DUK, JDRF, NPID; and thus likely to reduce confusion and inequalities in care, could be: 1.3.17: All pregnant women with Type 1 diabetes should be offered CGM to improve their glucose control and neonatal outcomes. 1.3.18 Women who are unable or do not want to use CGM should be offered Flash glucose monitoring instead. 1.3.19-21 can then be removed.	
Medtronic	Economic Model	General	General	We would like to highlight a relevant UK budget impact study on potential cost savings from use of real-time continuous glucose monitoring in pregnant women with Type 1 diabetes by Murphy et al[1] who reported that routine use of RT-CGM by pregnant women with Type 1 diabetes, would result in substantial cost savings, mainly through reductions in NICU admissions and shorter duration of NICU care. Murphy et al. Modelling potential cost savings from use of real-time continuous glucose monitoring in pregnant women with Type 1 diabetes. Diabet. Med. 36, 1652–1658 (2019)	*Thank you for your comment. This study is considered in appendix M.4.* *This study was excluded as the study design did not meet the review's inclusion criteria.*
Medtronic	Economic Model	128	001	The economic model "does not rely on health states (with associated measure for quality of life). Instead of moving between predefined health states, each time an event occurs we assume the utility is additive. This method means that the results would be the same regardless of the baseline health state; therefore, none is required".	*Thank you for your comment. As this is a cohort level model individual high and low risk patients are all considered as part of the total cohort.* *Differential absolute outcome rates are explored in the health economic sensitivity analysis.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				We suggest that this is another significant limitation in the model as high pre-pregnancy BMI is an important risk factor for adverse outcome in type 1 diabetic pregnancies[1]. The combined effect of both T1DM and overweight or obesity constitutes the greatest risk. As pre pregnancy weight increases the risk for caesarean as much as 7-9 fold, while weight gain during pregnancy more than doubles the risk of caesarean. 1. Pre-pregnancy body mass index and the risk of adverse outcome in type 1 diabetic pregnancies: a population-based cohort study | BMJ Open. Accessed October 19, 2020. https://bmjopen.bmj.com/content/2/1/e000601	
Medtronic	Evidence review	027	003	*"Due to the absence of evidence of differences in the 2 modelled outcomes between CGM devices it was assumed that all CGM devices were clinically equivalent"* This statement is contradictory to the Committee conclusion in NICE DG21 where it was recognised that there was no clinical evidence to support one of the assessed CGM technologies: "*The Vibe and G4 PLATINUM CGM system shows promise but there is currently insufficient evidence to support its routine adoption in the NHS for managing blood glucose levels in people with type 1 diabetes. Robust evidence is needed to show the clinical effectiveness of using the technology in practice*." (NICE DG21, 2016). We suggest that cross-reference to the NICE DG21 is made within the updated guideline, to ensure that all related NICE guidance documents are included for reference.	*Thank you for your comment.* *Clinical equivalence is listed as a model assumption. This was necessary due to lack of evidence of differences* *NICE DG21 Is currently being updated and decisions regarding cross-referencing will be made upon its completion.*
Medtronic	Evidence review	029	032	Section 1.1.12 of the evidence review states *"This evidence review supports recommendations 1.3.17 to 1.3.20 and the research recommendations on glucose monitoring for women planning a pregnancy and flash glucose monitoring for pregnant women".*	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				We do not agree that the evidence review supports recommendations 1.3.17 to 1.3.20 as these recommendations all show a default preference for Flash glucose monitoring which is not supported by the evidence. The available evidence does not support the choice of flash monitoring over CGM as there is an absence of high quality RCT evidence for flash glucose monitoring in this patient population. All recommendations for flash glucose monitoring in this draft guidance have been based on **one very low-quality observational study** with a **very serious risk of bias** (according to the GRADE methodology), whereas high quality RCT data provides the evidence for CGM in this population. Additional comments regarding recommendations 1.3.17, 1.319 and 1.3.20 are listed below	*supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*
Medtronic	Evidence review / economic model	025 025	003 043	Several outcomes that were deemed important and critical by the Committee have not been included in the economic model. We ask the Committee to consider that the absence of these critical clinical outcomes from the modelling means that a robust conclusion on comparative cost effectiveness of the treatment options cannot be reached, as the economic analysis has a high level of uncertainty and therefore the model outputs should be treated with caution. *When defining the outcomes that matter most, "the committee noted that **maternal outcomes such as time in target glucose range, hypoglycaemia and caesarean sections were important and critical outcomes of interest**."* The Committee agreed that the outcomes above are important and critical, yet only one of these maternal outcomes, caesarean	*Thank you for your comment.* *Having revisited the economic model, the committee felt that the outcomes for which there was no available evidence were likely – based on their clinical experience – to favour CGM.* *Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				sections, was incorporated into the economic modelling. The other maternal outcomes were not accounted for in the model and incremental cost-effective analysis. Time in target glucose range and hypoglycaemia, risk factors that can be modified by CGM, were not modelled and we believe that these are significant omissions from the model. The absence of hypoglycaemia and its impact on glycaemic control and clinical outcomes from the modelling indicates that the economic analysis has an important of uncertainty and only partly addresses the review question, therefore the model outputs should be treated with caution. *"The committee highlighted that the overall evidence base was small and ranged in quality, but some significant evidence was identified for important outcomes such as time in target glucose range, caesarean sections and high level neonatal care stay which all favoured the use of CGM in pregnancy. This evidence was graded as high to moderate quality. Additionally, outcomes such as HbA1c, number of women achieving HbA1c target and neonatal hypoglycaemia also favoured the use of CGM."* The economic model incorporated treatment effects and utilities for only 2 out of the 11 outcomes deemed to be important and critical by the Committee, many of which were supported by moderate to high quality RCT data that were not considered in the modelling. As a result, the economic analysis is significantly limited and does not fully capture the treatment effect or quality of life benefit of CGM. Specifically, time in glucose range, and hypoglycaemic episodes, are not accounted for. As discussed above, CGM has favourable outcomes for these parameters compared with SMBG; the same level of evidence is not available for flash in this patient population.	

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Medtronic	Evidence review / economic model	139	010	Caesarean section probabilities. The evidence review states: "*flash is associated with the lowest probability of caesarean section and CGM has the lowest NICU admission rate; however, at a 95% confidence level, the data are consistent with small advantages for either approach and no meaningful different between the 2"*. Although there is no apparent meaningful difference between the two, a lower probability of caesarean section modelled for flash. This has an impact upon utility values and subsequent ICERs. We believe It is implausible that a lower probability of caesarean section would be observed with flash monitoring versus CGM, given that clinical equivalence has been assumed throughout the evidence review. Further, there are high quality RCT data demonstrating favourable caesarean section outcomes with CGM compared with SMBG (p.16, Feig 2017), and no equivalent RCT outcome data for flash monitoring. This modelling assumption is therefore not supported by the evidence; in the absence of RCT data we contend that flash monitoring should be assumed to have equivalent outcomes to the standard of care (SMBG) and the probability of caesarean section for flash glucose monitoring should be set at the same value as SMBG in the economic model, or in any case not more favourable than CGM.	*Thank you for your comment.* *Uncertainty regarding all parameters was explored extensively in sensitivity analysis. The committee took this into account when making recommendations.*
Medtronic	Evidence review / economic model	140	Table HE013	Utility values. Owing to the lower probability of caesarean section modelled for flash compared with CGM, a higher disutility for this outcome has been assumed for CGM. Again, based on the implausibility of favourable outcomes for flash in the absence of any high-quality data, this utility assumption is erroneous. Although the absolute utility reduction is small, this has the effect of flash having greater total QALYs compared with CGM. This has considerable impact on the conclusions drawn from the cost-utility analysis i.e. it is purported that flash is more	*Thank you for your comment.* *In table HE017 a scenario with no future downstream consequences of caesarean is explored, this has the effect that CGM is not dominated, and instead is associated with an ICER of £3,698,503. The committee took this into account when making recommendations.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				effective and less expensive than CGM. This conclusion is not evidence-based and is biased towards flash. As discussed in comment 13, we ask that the caesarean section probabilities are revised within the model, which would subsequently rectify this issue.	
Medtronic	Guideline	General	General	We welcome these updates to the Clinical Guideline and believe these are timely and relevant. We appreciate the opportunity to contribute to this consultation.	*Thank you for your comment.*
Medtronic	Guideline	General	General	The consultation model requires the consultee to have access to "statistical package R" and to know how to use it. Despite downloading this package, we were unable to access the model ourselves despite several attempts and had to seek support from a statistician. The result was that we could only test the model via a third party and had very limited time to critique the model. Whilst we acknowledge that R software is listed as an acceptable format in the NICE methods, we suggest that this is not a suitable format of model for a NICE public consultation.	*Economic models can be developed in any standardised software referenced in the NICE appraisal process manual, which includes R. While we acknowledge that stakeholders may not be familiar with certain software, we believe that the standardised software are sufficiently commonly used in health economics to be appropriate for guideline development.* *In addition, the model is written up in detail in the health economic appendix allowing all stakeholders who are unable to run the model to understand the model parameters, structure, analyses and results.*
Medtronic	Guideline	General	General	The term "flash glucose monitoring" is used throughout the guidance when referring to intermittently viewed continuous glucose monitoring (iCGM). The term "flash glucose monitoring is associated with the Freestyle Libre brand, which is described in the Abbott product information as" Freestyle Libre Flash Glucose Monitoring" and as such, is not a generic term for the class of technology. Given the rapidly evolving market dynamics and the likelihood of further products to be launched in this class, we ask that the term "flash glucose monitoring" is replaced with "FlashGM (iCGM)" throughout the guidance as this is a more generic description that is used in Diabetes UK Technology Pathway (ref)	*Thank you for your comment. Definitions of the different systems are highlighted in the evidence review (Section 1.1.3). The definition states that flash glucose monitoring can be referred to as intermittently scanned CGM (isCGM) The committee opted to use term flash in this review as it is a term that both clinicians and patients are familiar with.*
Medtronic	Guideline	General	General	We ask that the descriptions of flash glucose monitoring and real time continuous glucose monitoring technologies and the differences between them are clearly stated in the final guidance	*Thank you for your comment. The committee have updated the definitions provided in the evidence review (Section 1.13).*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				as there are inconsistencies in the descriptions in the evidence review document. Example descriptions for the technologies from EUnetHTA[1] are below. **FGM system:** flash glucose monitoring system (called also iCGM: intermittently viewed continuous glucose monitoring) – provides the current glucose value plus retrospective glucose data for a specified time period upon "scanning" **rtCGM:** real-time CGM: provides real-time numerical and graphical information about the current glucose level, glucose trends, the direction/rate of change of glucose and alarms and alerts at present threshold. 1. EUnetHTA HTA report. Accessed April 16, 2020. https://www.eunethta.eu/wp-content/uploads/2018/07/OTJA08_CGM-real-time-and-FGM-aspersonal2c-standalone-systems-in-patients-with-diabetes-mellitus-treatedwith-insulin.pdf	
Medtronic	Guideline	017	023	Recommendation 1.3.17 is the first statement in this section and it states that continuous glucose monitoring should be offered *"for pregnant women who cannot use flash glucose monitoring because it is contraindicated or because of hypersensitivities".* As the opening statement in these recommendations it gives the impression that all pregnant women with T1 diabetes should receive flash by default, unless contraindicated. This is not supported by the evidence as outlined in comment 6 above. We ask that this statement is placed after 1.3.21.	*Thank you for your comment. The recommendations have been amended to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.. The committee also further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it.*
Medtronic	Guideline	018	004	Recommendation 1.3.19. states *"For pregnant women with type 1 diabetes who need predictive alerts (for example, because of impaired hypoglycaemia awareness or problematic nocturnal hypoglycaemia), offer continuous glucose monitoring* ***if there is no flash system with this feature".***	*Thank you for your comment. The committee made that recommendation keeping in mind that such technologies would be marketed soon. However, the committee have amended the recommendations after revisiting the evidence and reference to flash systems with alarm features has been removed. The*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				It is recognised in the evidence review that, based on the available evidence, CGM functionality is superior to flash, hence it is preferred for specific subgroups of pregnant women with type 1 diabetes at higher risk, e.g. impaired hypoglycaemic awareness. *"The committee highlighted that the overall evidence base was small and ranged in quality, but some significant evidence was identified for important outcomes such as time in target glucose range, caesarean sections and high level neonatal care stay which all favoured the use of CGM in pregnancy. This evidence was graded as high to moderate quality. Additionally, outcomes such as HbA1c, number of women achieving HbA1c target and neonatal hypoglycaemia also favoured the use of CGM."* (evidence review page 25, line 43) *The committee further highlighted that "compared to flash, CGM includes predictive alert features such as alarms which can alert the user of impending hypoglycaemic and hyperglycaemic episodes. The committee noted that this is particularly important in women with impaired hypoglycaemic awareness as well as those with problematic nocturnal hypoglycaemia. Based on their clinical expertise, the committee recommended that CGM should be offered, to pregnant women with type 1 diabetes with impaired hypoglycaemic awareness or problematic nocturnal hypoglycaemia as alerts are needed in this population". (evidence review page…)* A flash device with predictive alerts was not mentioned in the evidence review, as this product does not currently exist in the UK therefore it is difficult to understand why this statement has appeared in the draft guidance.	*committee's discussion and interpretation of evidence section in the evidence review (Section 1.1.11) has also been amended.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				We ask that the statement **"if there is no flash system with this feature**" be removed from section 1.3.19 as there is no such product currently CE marked for use in the UK and no evidence has been presented or reviewed regarding this possible future product development. This inclusion of this statement skews the recommendation away from the clear evidence base and the Committee recommendations for continuous glucose monitoring in this population.	
Medtronic	Guideline	018	008	Section 1.3.20 states *"If any of the criteria in recommendations 1.3.18 or 1.3.19 apply, but a pregnant woman with type 1 diabetes prefers flash glucose monitoring, offer this instead".* Whilst we support patient choice where clinically appropriate, we are concerned that for the patient cohort outlined in section 1.3.19, the use of flash glucose monitoring is not be the most effective option. Outcomes from 2 RCTs[1,2] have shown that flash glucose monitoring is not effective in individuals with Type 1 diabetes who have impaired hypoglycaemia awareness and that continuous glucose monitoring provides superior outcomes in the patient group. The incidence of severe hypoglycaemic events varies significantly by trimester and is another important factor when deciding which option is more suitable as flash glucose monitoring has not been shown effective to prevent hypoglycaemia in this group[3] In addition, a recent study has shown that scanning to detect clinically severe hypoglycaemia during the night is delayed in flash glucose monitoring users by: 40 min [107-227] in users with impaired awareness of hypoglycaemia (IAH) vs.96 min[41-155], p=0.004) without IAH[4]	*Thank you for your comment. The studies highlighted in the reference list were not included in the review for the following reasons:* • *Reddy et al. did not include our population of interest* • *Neilsen et al. did not include the interventions and outcomes needed for this review.* • *The CORRIDA trial (2020) was published in August 2020 and Moser et al (2020) in July 2020 and was not included as the literature searches for the evidence reviews were conducted in December 2019.* *The PICO for this review question is highlighted in evidence review section 1.1.2).* *The recommendations have been amended to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee also further recommended that isCGM (commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The rationale and impact section and committee's discussion and interpretation of evidence (1.1.11) have also been updated to highlight the committee discussion.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				In order to better represent the differences in evidence for this patient cohort, we ask that this statement be amended to *"If any of the criteria in recommendations 1.3.18 or 1.3.19 apply, but a pregnant woman with Type 1 diabetes prefers flash glucose monitoring, this can be offered instead if it is clinically appropriate for the patient, taking into consideration hypoglycaemia awareness and frequency"*. 1. Reddy M, Jugnee N, El Laboudi A, et al. A randomized controlled pilot study of continuous glucose monitoring and flash glucose monitoring in people with type 1 diabetes and impaired awareness of hypoglycaemia. Diabet Med 201835: 483-490 2. Corrida et al. **3.** Neilsen et al. Hypoglycemia in Pregnant Women With Type 1 Diabetes Predictors and role of metabolic control. Diabetes Care 2008 Jan; 31(1): 9-14. https://doi.org/10.2337/dc07-1066 4. Moser et al. People with Type 1 Diabetes and Impaired Awareness of Hypoglycemia Have a Delayed Reaction to Perform a Glucose Scan during Hypoglycemia: A Prospective Observational Study. ADA 2020	
Medtronic	Guideline	018	011	Section 1.3.21 states "If none of the criteria in recommendations 1.3.17 to 1.3.19 apply, offer pregnant women with type 1 diabetes the choice of flash or continuous glucose monitoring ***while the costs of continuous glucose monitoring are met centrally by NHS England and NHS Improvement*****".** We ask that the statement *"while the costs of continuous glucose monitoring are met centrally by NHS England and NHS Improvement*" should be removed from the recommendation itself. This is a clinical guideline, and the commissioning route is	*Thank you for your comment. The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				secondary to any clinically based recommendation. We recognise that the funding of any recommended technology is an important aspect of implementing NICE Clinical Guidelines, however, we contend that it should not form part of the actual recommendation statement. This undermines the clinical value of the guideline which should be followed regardless of the payer. The positioning of the above recommendation 1.3.21 is confusing, and the overall structure of the recommendations 1.3.17 to 1.3.21 is misleading as it suggests that flash monitoring is the preferred technology. We contend that these do not adequately represent either the evidence or the Committee statements provided in the evidence review. To rectify this and provide an unambiguous recommendation, we strongly suggest that statement 1.3.21 should be positioned as the first statement in this section, and reworded as follows: ***"Offer pregnant women with type 1 diabetes the choice of flash or continuous glucose monitoring if none of the criteria in recommendations 1.3.17 to 1.3.19 apply."*** We suggest that this statement is placed as the first recommendation, then followed by the recommendations for the three specific subgroups where CGM is advised as the preferred approach due to the additional functionality provided by this technology (1.3.17 to 1.3.19). We strongly believe that this structure will provide a clearer, more transparent and easier to use set of recommendations for all.	
Medtronic	Guideline	036	005	*"When compared with intermittent capillary glucose monitoring, continuous glucose monitoring resulted in:* *• more women achieving their blood glucose targets* *• fewer caesarean sections* *• fewer neonatal intensive care unit (NICU) admissions.*	*Thank you for your comment. The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				When flash and continuous glucose monitoring were compared, there was no clear difference between the 2 monitoring systems in maternal and neonatal outcomes." The wording in this section is misleading because the comparison between CGM and intermittent capillary glucose monitoring (with favourable outcomes for CGM) is based on a high-quality RCT. The second comparison being made between flash and CGM is taken from a very low-quality observational study. We note that this point is documented later in p.37 line 3, however we ask that it should also be made clear and stated within this paragraph on p.36 as the evidence level is a key point when considering the comparative data. To fully address the comparators listed in the PICO within the evidence review it should also be stated here that there are no data available to compare flash versus intermittent capillary glucose monitoring. Further, it is stated that: *"Continuous glucose monitoring <u>may</u> provide more benefits, although this would be at a higher cost."* This is contradictory to the above statement **which concludes that CGM provides favourable outcomes that are evidence-based.** Within the guideline CGM is also recommended for higher risk subgroups, which indicates that these incremental benefits are valued and important for this patient population. To rectify this and to recognise the higher quality evidence available for CGM, we propose that this sentence is re-worded to: "***Whilst continuous glucose monitoring costs more than the comparators, there is a significant evidence base that demonstrates greater benefits with this technology compared with intermittent capillary glucose monitoring".***	*intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it.* *The committee discussion and interpretation of evidence section (Section 1.1.11) has also been amended to further highlight the committee's decisions.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Given the significant omissions and limitations in the economic model, there is a great deal of uncertainty around the comparative costs and we ask that this is made clear in the guideline.	
National Pregnancy in Diabetes (NPID) audit clinical advisory group	Comment form question 4	N/A	N/A	***Q. The recommendations in this guideline were developed before the coronavirus pandemic. Please tell us if there are any particular issues relating to COVID-19 that we should take into account when finalising the guideline for publication.*** In terms of **COVID-19 impact**, deaths in people with diabetes have more than doubled during the pandemic. The impact of the pandemic on pregnant women is contributing to rising rates of stillbirth. With perinatal mortality rates 3-5 times higher than the background maternity population, pregnant women with diabetes are particularly vulnerable to the impact of Covid-19, and reductions in face-face antenatal care provision. **We very much welcome and support the recommendation to extend flash and CGM use to a wider range of pregnant women on insulin therapy**. The 2014-2018 NPID data analysis confirmed that **having type 2 diabetes was associated with an even higher risk for perinatal mortality than type 1 diabetes** (OR 1.65 95% CI 1.18 to 2.31). It also demonstrated that **an above target HbA1c>48mmol/mol (6.5%) is the key modifiable risk factor and is associated with a four-fold increase in perinatal death** in type 2 diabetes pregnancy. **We therefore recommend that flash be offered to all pregnant women with type 2 diabetes with HbA1c >48mmol/mol (6.5%) to reduce their increased rates of stillbirth and neonatal death.** Weighing up the clinical and cost implications, because of their lower HbA1c levels, lower risk of severe hypoglycaemia and	*Thank you for your comment. Glucose monitoring in pregnant women with type 2 diabetes and gestational diabetes was out of scope for this question.* *However the committee did highlight that CGM can be considered for pregnant women who are on insulin therapy but do not have type 1 diabetes if they have problematic severe hypoglycaemia or if they have unstable blood glucose levels that are causing concern despite efforts to optimise glycaemic control.* *The committee also revisited the evidence and noted that more robust evidence was required for flash. Due to the lack of strong evidence favouring flash the committee amended the recommendation to state that CGM should be offered to all women.* *The committee also highlighted that stipulating HbA1c targets in the recommendations may restrict the access of the technologies and can cause further worry and anxiety among patients.* *The committee also highlighted that in pregnant women, HbA1c is not a reliable measurement and focus should be on time in range. Therefore, the committee opted to not include HbA1c targets in the recommendations. Committee's full discussion is highlighted in section 1.1.11 in the evidence review.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				lower risk of preterm births, large for gestational age babies and neonatal care unit admissions, the limited evidence base for CGM in type 2 diabetes pregnancy and the cost implications, we consider flash applicable for use in all pregnant women with type 2 diabetes on insulin therapy**.** Flash is already in widespread clinical use across NHS maternity clinics so this will not add burden for staff or patients. Suggested text edit: 1.3.22 pg 18 ln 16-23; Consider continuous glucose monitoring for pregnant women who are on insulin therapy but do not have type 1 diabetes, if they have an above target HbA1c level (HbA1c >48mmol/mol) or problematic severe hypoglycaemia (with or without impaired awareness of hypoglycaemia) or they have unstable blood glucose levels (to minimise variability) or it would be useful to gain information about variability in blood glucose levels. [2015, amended 2020]	
National Pregnancy in Diabetes (NPID) audit clinical advisory group	Evidence review	026 027 028	004 - 012 049 - 052 010 - 012	**The clinical and health economic assumptions that Flash and CGM are equal are not supported by the data**. (p.26; ll 4-12; p 27; ll 49-52, p28; ll 10-12) It is notable that the glucose levels achieved in the retrospective cohort study by Kerssen et al are comparable to those obtained using self-monitoring of blood glucose (SMBG) in the CONCEPTT RCT. Differences between flash and SMBG users are negligible for key glycaemic measures including mean glucose (7.1 vs 7.0mmol/L), time-in target glucose range 3.5-7.8mmol/L (60 vs 61%), time spent hyperglycaemic>7.8mmol/L (34 vs 32%). Therefore, the assumptions that Flash and CGM are equal are not supported by the data. Despite comparable baseline glucose levels, CONCEPTT CGM users had a lower mean glucose (6.7 vs 7.1mmol/L), higher time-in target range (68 vs 60%), less time hyperglycaemic (27 vs 34%), less time hypoglycaemic (3 vs 6%) and less glucose variability (CV 32 vs 36%) compared to those using flash users	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				in the observational study. This equates to **CGM users spending an additional 2 hours per day in the target glucose range (3.5-7.8mmol/L)**, **1hr 45 minutes less hyperglycaemia >7.8mmol/L and 45 minutes less time hypoglycaemic** in the third trimester.	
National Pregnancy in Diabetes (NPID) audit clinical advisory group	Evidence review	026	023 - 029	**Differences in hypoglycaemia between Flash and CGM are not reflected in the recommendations (**p.26; ll 23-29 The evidence review states that there was 'some evidence that CGM results in less time spent below target than flash (Kristensen et al. 2019). In theory, this may have benefits including reduced hypoglycaemic events; however, no such benefit was observed in the study'. This is misleading as the study was designed to examine large for gestational age infants and adverse neonatal outcomes thus maternal clinical hypoglycaemia events were not recorded. **Hypoglycaemia (and fear of hypoglycaemia) is the major barrier for achieving target glucose levels in pregnant women with type 1 diabetes.** It should therefore be more clearly stated that, despite their longer duration of type 1 diabetes, **CGM users spent significantly less time in hypoglycaemia in the first, second and third trimesters.** Flash users spent strikingly high (10%) time with glucose levels below target (2.4hours/day with glucose levels <3.5mmol/L) including during the third trimester. This is twice as high as CGM users in CONCEPTT and even higher than in CONCEPTT SMBG users. Outside of pregnancy, there is an association between time below range and severe hypoglycaemia. The importance of maternal hypoglycaemia during type 1 diabetes pregnancy should not be understated when 10% of pregnant women with type 1 diabetes have severe hypoglycaemia episodes requiring hospital admission and severe hypoglycaemia remains the commonest form of maternal death.	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help women achieve pregnancy glucose targets and better neonatal outcomes.* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*
National Pregnancy in Diabetes (NPID) audit	Evidence review	111	Table	The evidence review notes that the **risk of bias from the retrospective cohort study by Kerssen et al is 'very serious'.** This and other important caveats regarding the evidence for flash should be better reflected in the draft	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
clinical advisory group				recommendations. Key limitations which are not acknowledged are as follows; 1. The study by Kerssen et al aimed to analyse patterns of CGM data associated with large for gestational age infants and adverse neonatal outcomes. This clinical case series was **not designed to compare flash with continuous glucose monitoring**. 2. There were important baseline differences between CGM and flash users - **CGM users had a significantly longer duration of type 1 diabetes (17 vs 14 years; P<0.05)** and **were more likely to use insulin pumps (42% vs 16%; p<0.001)**. These factors significantly impact maternal glucose levels and obstetric/neonatal outcomes. 3. Almost **one third (32%) of CGM profiles were excluded** (compared to 12% Flash profiles) 4. Women not already using CGM made their **own choice** between flash and CGM 5. Women using other CGM devices (including the Medtronic used in the CONCEPTT trial) were excluded. **To conclude 'that flash would have the same outcomes as CGM' ignores the hierarchy of RCT evidence, and disregards the methodological limitations of observational data and the very serious risk of bias noted in the evidence review.** It is unprecedented for NICE to prioritise weak observational data and committee experience over randomised controlled trial data. This sets a dangerous precedent and risks undermining health care professional (and public) confidence in NICE guideline reviews and evidence-based medicine.	*that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*
National Pregnancy in Diabetes (NPID) audit clinical	Evidence review	130	005 - 037	**The quality of the evidence -** It is inappropriate to include the Secher AL 2013 (p.23; ll 9) randomised trial which did not use CGM continuously – in Secher et al, only 7% of women (5 participants) used CGM for at least 60% of the time and remaining participants used CGM intermittently. This is not	*Thank you for your comment. As highlighted in the committee's discussion and interpretation of the evidence section (1.1.11) Secher 2013 was downgraded for indirectness for this reason. The directness of the evidence was taken into consideration when assessing the overall quality of the evidence.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
advisory group				applicable to current clinical practice or the evidence base which indicates that CGM is only effective is used continuously and that this >90% wear is achieved using modern generation CGM sensors. **A trial with only 5 participants using CGM as intended should be excluded.** This further undermines confidence in the NG3 evidence review.	
National Pregnancy in Diabetes (NPID) audit clinical advisory group	Guideline	General (regarding implementation and trust in NICE to accurately appraise and honestly reflect the findings of randomised controlled trial data)		A far clearer recommendation consistent with the NICE evidence review findings, NHS long term plan, Diabetes UK clinical pathway, and health technology Wales is needed to improve the credibility and implementation of the NG3 guideline**.** The NHS long term plan, Diabetes UK clinical pathways and health technology Wales strongly support CGM use based on the RCT evidence in type 1 diabetes pregnancy. Clinicians trust NICE to follow the principles of evidence-based medicine and will assume that NICE have RCT data comparing flash and SMBG or flash and CGM. To the best of our knowledge, **it is unprecedented for NICE to prioritise weak observational data and committee experience over randomised controlled trial data**. **This sets a dangerous precedent and risks undermining health care professional (and public) confidence in NICE guideline reviews and evidence-based medicine**. Amidst varying national guidelines and recommendations, the NG3 guidance based on weak observational data and committee experience will undermine public trust in NICE and run the risk of becoming irrelevant as CGM is being introduced for pregnant women with type 1 diabetes across NHS maternity clinics.	*Thank you for your comment. The committee were aware of the quality of the Kristensen 2019 paper but felt that a choice between flash and CGM may be favourable in this population. However, having revisited the evidence, the committee did note that overall, there was a lack of good quality evidence supporting the use of flash over CGM. While flash may be beneficial, the committee could not recommend this as first line. Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.* *The committee further recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM and those who express a clear preference for it.*
National Pregnancy in Diabetes (NPID) audit clinical	Guideline	General (regarding implementation of	General	**We are extremely concerned that the NICE guidance will undermine the national efforts that are urgently required to reduce the high and increasing rates of obstetric and neonatal complications in type 1 diabetes pregnancies.** The National Pregnancy in Diabetes (NPID) audit examined 17,375 pregnancies in 15,290 women with diabetes in a population-	*Thank you for your comment. The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that intermittently scanned CGM (isCGM, commonly referred to as*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
advisory group		NG3 in type 1 diabetes)		based cohort across 172 maternity clinics in England, Wales and the Isle of Man. Of 17,375 pregnancies, 8,690 (50.0%) were in women with type 1 and 8,685 (50.0%) in women with type 2 diabetes during 2014-2018. Rates of preterm births (42.5% type 1, 23.4% type 2), large for gestational age birthweight (52.2% type 1, 26.2% type 2) and neonatal care admissions (43.3% type 1, 25.7% type 2) are all significantly higher in type 1 diabetes neonates. The rates of preterm births and large for gestational age babies have significantly increased in type 1 diabetes during 2014-2018. These complications are strongly associated with maternal glucose levels and CGM is the only intervention for which there is high quality randomised controlled trial data demonstrating improved time in target glucose range, reduced rates of large for gestational age birthweight (LGA), reduced neonatal intensive care unit (NICU) admissions and reduced neonatal hypoglycaemia. Furthermore, the numbers of women needed to treat to prevent one neonatal complication is only six for LGA and NICU admission and eight for neonatal hypoglycaemia. Based on the NPID findings and high quality RCT data, **we strongly endorse the NHSE funding for real-time continuous glucose monitoring to improve maternal glycaemia and reduce rates of large for gestational age and neonatal intensive care unit admissions in pregnant women with type 1 diabetes.** References: http://content.digital.nhs.uk/npid Feig DS, Donovan LE, Corcoy R, et al. Continuous glucose monitoring in pregnant women with type 1 diabetes (CONCEPTT): a multicentre international randomised controlled trial. Lancet. 2017;390:2347-59	*flash) can be offered to women who are unable to use CGM or express a clear preference for it. The committee discussion and interpretation of evidence section (Section 1.1.11) has also been amended to further highlight the committee's decisions.*
National Pregnancy in Diabetes	Guideline	General	General	We are very concerned that the **guidance will further increase existing healthcare inequalities**. Only 15.9% of women with type 1 diabetes achieved the NICE glucose control targets	*Thank you for your comment. The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
(NPID) audit clinical advisory group		(regarding NG3 implementation in relation to healthcare inequalities and clinic-to-clinic variations)		(HbA1c <48mmol/mol) in early pregnancy. This means that almost 85% of women with type 1 diabetes do not achieve the NICE glucose targets. Women achieving target HbA1c <48mmol/mol are **older** (31.3 vs 29.8 years; p < 0.001) have **lower BMI** (25.7 vs 27.0 kg/m^2; p < 0.001) and **live in the least deprived** areas. Only **one in ten women living in the most deprived areas achieve target HbA1c levels compared to** one in four women living in the least deprived areas (24% vs 9.9%; p < 0.001). Unless the guidelines are revised to offer CGM to all pregnant women with type 1 diabetes, we anticipate that more educated, socio-economically advantaged, women will advocate for access to CGM and are very concerned that women living in the most deprived regions will be offered flash which has the potential to **further increase existing healthcare inequalities**. We are also concerned about the potential for **increasing clinic-to-clinic variations in CGM and flash use.** We anticipate that clinicians who are more skilled in the intensive glycaemic management of type 1 diabetes and/or better equipped to differentiate between randomised trial and observational data and motivated to access NHSE funding for CGM will use CGM. **There is no RCT evidence to support the use of flash in type 1 diabetes pregnancy** and the guidance will create confusion for women and clinicians about which pregnant women with type 1 diabetes should be offered flash or CGM. To avoid further exacerbating healthcare inequalities and increasing clinic-to-clinic variations regarding CGM and flash, we recommend that CGM be offered as first line therapy for all pregnant women with type 1 diabetes, and at the very least for all women with HbA1c >6.5% (48mmol/mol), based on the NPID data and CONCEPTT RCT eligibility criteria.	*help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The committee discussion and interpretation of evidence section (Section 1.1.11) has also been amended to further highlight the committee's decisions.* *Additionally, Feig 2017 was included in this review (for further information please refer to evidence review). Murphy 2017 was not included in this review as it did not include the interventions of interest. For further information please refer to PICO outlined in section 1.1.2 in the evidence review.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				References: Murphy HR, Bell R, Cartwright C, et al. Improved pregnancy outcomes in women with type 1 and type 2 diabetes but substantial clinic-to-clinic variations: a prospective nationwide study. Diabetologia. 2017;60(9):1668-77 and for the most recent 2014-2018 NPID data analysis see http://content.digital.nhs.uk/npid Feig DS, Donovan LE, Corcoy R, et al. Continuous glucose monitoring in pregnant women with type 1 diabetes (CONCEPTT): a multicentre international randomised controlled trial. Lancet. 2017;390:2347-59	
National Pregnancy in Diabetes (NPID) audit clinical advisory group	Guideline	General (regarding cost implications)	General	**The time period starting Oct 01 2020 for which the costs of CGM are met centrally by NHSE and NHS Improvement could be more clearly specified**. See suggested text edit 1.3.21 pg 18 ln 11-15; If none of the criteria in recommendations 1.3.17 to 1.3.19 apply, offer pregnant women with type 1 diabetes the choice of flash or continuous glucose monitoring, from Oct 2020 when the costs of continuous glucose monitoring are met centrally by NHS England and NHS Improvement. [2020] However, beyond the NHSE funding time frame for CGM, if for cost purposes, access to CGM is to be 'rationed' then women who are least likely to achieve the NICE glucose targets based on the NPID audit findings should be prioritised for CGM use. In clinical practice, to avoid clinic-to-clinic variations and widening healthcare inequalities this would mean a clearer recommendation for CGM and flash use; for example, flash may be applicable for women with HbA1c <48mmol/mol (6.5%) without problematic severe hypoglycaemia or unstable blood glucose levels. The CONCEPTT RCT excluded women with HbA1c <6.5% (48mmol/mol), so in the absence of a firm	*Thank you for your comment*. Feig 2017 was included in this review (for further information please refer to evidence review). *The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The committee discussion and interpretation of evidence section (Section 1.1.11) has also been amended to further highlight the committee's decisions.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				evidence base the choice of flash or continuous glucose monitoring could be offered to those women. Specifically, **we recommend CGM as first line treatment for all pregnant women with type 1 diabetes while the costs of CGM are met centrally by NHSE and NHS Improvement i.e. from 01 Oct 2020. This is consistent** with recommendations for CGM use in type 1 diabetes from the NHS long term plan, Diabetes UK clinical pathway, Health Technology Wales, and supported by the National Pregnancy in Diabetes audit findings and CONCEPTT randomised controlled trial evidence.	
National Pregnancy in Diabetes (NPID) audit clinical advisory group	Guideline	General (practical resources or national initiatives to help users)	General	The implementation of CGM and flash during pregnancy would be facilitated by including the international consensus recommendations for **time in range (TIR) glucose targets** and educational resources for patients and heath care professionals. The consensus recommendations suggest aiming for a percentage time spent in the pregnancy glucose target range 3.5-7.8mmol/L; TIR >70% (16hr, 48 min), percentage time above 7.8mmol/L range; TAR < 25% (6 hr) and percentage time below range for 3.5mmol/L TBR <4% (1hr) and 3.0mmol/L TBR <1% (15 min). Taken together the CONCEPTT and Swedish data indicate that relatively small, 5% increments in time in range (TIR 3.5-7.8mmol/L), are associated with clinically relevant improvements in neonatal health outcomes. Furthermore, it should be noted that unlike HbA1c, time in range (TIR) targets are not influenced by gestational changes in erythropoiesis, red cell life span or iron deficiency. References: Battelino T, Danne T, Bergenstal RM et al. Clinical targets for continuous glucose monitoring data interpretation: Recommendations from the international consensus on time in range. **Diabetes Care** 2019;42(8):1593-1603	*Thank you for your comment. The committee were unable to make specific recommendations on time in range targets as this was outside the remit of the review question. However, the committee noted that these are well understood by clinicians and can be captured through CGM devices. They also stated that clinicians should discuss this with pregnant women and encourage them to spend more time in their personalised target glucose ranges.* *The committee's discussion and interpretation of evidence section (Section1.1.11) of the evidence review has been amended to further highlight the discussion.* *Additionally, as Battelino (2019) and Murphy (2019) were not systematic reviews or randomised control trials, these studies were not included in the evidence review. However, Battelino (2019) was used to obtain minimally important differences (MIDs). See Appendix B of the evidence review for further information.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Murphy HR. Continuous glucose monitoring targets in type 1 diabetes pregnancy: every 5% time in range matters **Diabetologia** 2019;62(7):1123-1128 The educational resources include 1. ABCD/DTN Using diabetes technology in pregnancy Best Practice Guide - https://abcd.care/dtn/best-practice-guides 2. ABCD/DTN educational videos for using CGM and flash before and during pregnancy- https://abcd.care/dtn/CGM Qualitative work indicates that video content, as opposed to patient leaflets/written text content, is often more relatable, preferred and easier to absorb. The videos are applicable for a broad range of pregnant women and for health care professionals. The Best Practice Guide is targeted for health care professionals. All resources are applicable for flash and CGM users.	
National Pregnancy in Diabetes (NPID) audit clinical advisory group	Guideline	017 018	023 024	**We are extremely concerned that the current draft recommendations 1.3.17-1.3.23 do not reflect the evidence review findings.** **The NICE evidence review noted that 'Significant evidence was identified for important outcomes such as time in target glucose range, caesarean sections and high level neonatal care stay, which all favoured the use of CGM in pregnancy. Additionally, outcomes such as HbA1c, number of women achieving HbA1c target and neonatal hypoglycaemia also favoured the use of CGM'.**	*Thank you for your comment. The committee have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee also noted that flash could be useful in some women and therefore recommended that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it.* *The committee also noted that stipulating HbA1c targets in the recommendations may restrict the access of the technologies*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				To reflect the RCT evidence, and NICE evidence review and NPID findings we strongly advise the following text edits highlighted in red 1.3.17 pg 17 ln 23-26; For pregnant women with type 1 diabetes who cannot use continuous glucose monitoring because it is contraindicated or because of hypersensitivities (such as an allergy to the adhesive used by the system), offer flash. [2020] 1.3.18 pg 18 ln 1-3; For pregnant women with type 1 diabetes who are already using continuous glucose monitoring (with or without an insulin pump), continue with continuous glucose monitoring. [2020] 1.3.19 pg 18 ln 4-7; For pregnant women with type 1 diabetes who need predictive alerts (for example, because of impaired hypoglycaemia awareness or problematic nocturnal hypoglycaemia), offer continuous glucose monitoring if there is no flash system with this feature. [2020] 1.3.20 pg 18; If any of the criteria in recommendations 1.3.18 or 1.3.19 apply, but a pregnant woman with type 1 diabetes prefers flash glucose monitoring, offer this instead. [2020] 1.3.21 pg 18 ln 11-15; If none of the criteria in recommendations 1.3.17 to 1.3.19 apply, offer pregnant women with type 1 diabetes the choice of flash or continuous glucose monitoring, from Oct 2020 when the costs of continuous glucose monitoring are met centrally by NHS England and NHS Improvement. [2020] 1.3.22 pg 18 ln 16-23; Consider continuous glucose monitoring for pregnant women who are on insulin therapy but do not have type 1 diabetes, if they have an above target HbA1c level (HbA1c >48mmol/mol) or problematic severe hypoglycaemia	*and can cause further worry and anxiety among patients. The committee also highlighted that in pregnant women, HbA1c is not a reliable measurement and focus should be on time in range. Therefore, the committee opted to not include HbA1c targets in the recommendations.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				(with or without impaired awareness of hypoglycaemia) or they have unstable blood glucose levels (to minimise variability) or it would be useful to gain information about variability in blood glucose levels. [2015, amended 2020] 1.3.17 pg 18 ln 24-27; For pregnant women who are using flash or continuous glucose 25 monitoring, a member of the joint diabetes and antenatal care team 26 with expertise in these systems should provide education and 27 support (including out-of-hours support). [2020]	
National Pregnancy in Diabetes (NPID) audit clinical advisory group	Guideline	130	025 - 030	**The quality of the evidence - No evidence was obtained regarding the length of stay in a post-natal or NICU ward for FLASH**. As these parameters drive the results of the CEA model, this undermines the validity of the analysis. As noted above it is unprecedented for NICE to mix and match selected findings from RCT and observational data and committee opinion. To infer comparability of health outcomes and economic outcomes between CGM and Flash is not appropriate and not supported by the data.	*Thank you for your comment.* *Having revisited the economic model, the committee felt that the outcomes for which there was no available evidence were likely – based on their clinical experience – to favour CGM.* *Therefore, the committee have redrafted the recommendation to state that CGM should be offered to all women with type 1 diabetes.*
NHS England and NHS Improvement	Guideline	General	General	Pregnant patients with type 1 diabetes are predominantly managed by specialists. There is likely to be limited GP practice involvement for the core management of their diabetes. However, on occasion, a woman might present to her GP or nurse for advice. In this instance, clear guidance from the specialist on management of the condition (e.g. targets for HbA1C, managing any common complications etc) would be very helpful. (KC)	*Thank you for your comment. Target blood glucose and HbA1c level before pregnancy is covered by recommendations 1.1.16- 1.1.23. Target blood glucose levels for pregnant women is covered by recommendations 1.3.4- 1.3.6.*
NHS England and NHS Improvement	Guideline	General	General	Women in the preconception and postnatal period are regularly seen in practices. However, I understand you are not taking comments on the grey section. (KC)	*Thank you for your comment. The current review question did cover women planning to become pregnant however due to the lack of evidence no new recommendations were drafted (Committee's full discussion highlighted in section1.1.11). Other recommendations covering the preconception and postnatal period were out of scope for this update.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
NHS England and NHS Improvement – NHS National Diabetes Programme	Guideline	029	001 - 007	NHS England will be undertaking a 12 month national pilot to support the expansion of the NHS Diabetes Prevention Programme (NHS DPP) eligibility criteria to include women with a past diagnosis of gestational diabetes mellitus (GDM) and a blood test in the normal [HbA1c below 42mmol/l or fasting plasma glucose below 5.5mmol/l] range **within the last 12 months**; this may be either via the mandated 6-8 week GP postnatal check-up, yearly screens of individuals diagnosed with GDM in pregnancy or via audits of GP systems. The NHS DPP is currently limited to individuals aged 18 years or over who have 'non-diabetic hyperglycaemia', defined as having an HbA1c result of 42 – 47 mmol/mol (6.0 – 6.4%) or an FPG result of 5.5 – 6.9 mmol/l within the 12 months prior to the date of referral into the Service. Therefore, those with a past diagnosis of gestational diabetes mellitus and a follow-on blood test in the non-diabetic hyperglycaemia (NDH) range within the last 12 months prior to referral are already eligible for the programme under the existing criteria. It is important to exclude those who are confirmed as having T2D as they will need to be offered a different treatment pathway in line with NICE guidance. Therefore, it's requested to include an additional point under section 1.6.11: • "offer a referral into the NHS Diabetes Prevention Programme if eligible based on the results of the fasting plasma glucose test or HbA1C test"	*Thank you for your comment. This has been added.*
NHS England and NHS Improvement – NHS National	Guideline	029	008 - 021	NHS England will be undertaking a 12 month national pilot to support the expansion of the NHS Diabetes Prevention Programme (NHS DPP) eligibility criteria to include women with a past diagnosis of gestational diabetes mellitus (GDM) and a blood test in the normal [HbA1c below 42mmol/l or fasting plasma glucose below 5.5mmol/l] range **within the last 12**	*Thank you for your comment. This has been added.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Diabetes Programme				**months**; this may be either via the mandated 6-8 week GP postnatal check-up, yearly screens of individuals diagnosed with GDM in pregnancy or via audits of GP systems. The NHS DPP is currently limited to individuals aged 18 years or over who have 'non-diabetic hyperglycaemia', defined as having an HbA1c result of 42 – 47 mmol/mol (6.0 – 6.4%) or an FPG result of 5.5 – 6.9 mmol/l within the 12 months prior to the date of referral into the Service. Therefore, those with a past diagnosis of gestational diabetes mellitus and a follow-on blood test in the non-diabetic hyperglycaemia (NDH) range within the last 12 months prior to referral are already eligible for the programme under the existing criteria. It is important to exclude those who are confirmed as having T2D as they will need to be offered a different treatment pathway in line with NICE guidance. Therefore, it's requested to include under section 1.6.12 as an additional point: "- they can be offered a referral into the NHS Diabetes Prevention Programme if eligible based on the results of the fasting plasma glucose test"	
NHS England and NHS Improvement – NHS National Diabetes Programme	Guideline	029	022 - 027	NHS England will be undertaking a 12 month national pilot to support the expansion of the NHS Diabetes Prevention Programme (NHS DPP) eligibility criteria to include women with a past diagnosis of gestational diabetes mellitus (GDM) and a blood test in the normal [HbA1c below 42mmol/l or fasting plasma glucose below 5.5mmol/l] range **within the last 12 months**; this may be either via the mandated 6-8 week GP postnatal check-up, yearly screens of individuals diagnosed with GDM in pregnancy or via audits of GP systems. The NHS DPP is currently limited to individuals aged 18 years or over who have 'non-diabetic hyperglycaemia', defined as having	*Thank you for your comment. This has been added.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				an HbA1c result of 42 – 47 mmol/mol (6.0 – 6.4%) or an FPG result of 5.5 – 6.9 mmol/l within the 12 months prior to the date of referral into the Service. Therefore, those with a past diagnosis of gestational diabetes mellitus and a follow-on blood test in the non-diabetic hyperglycaemia (NDH) range within the last 12 months prior to referral are already eligible for the programme under the existing criteria. It is important to exclude those who are confirmed as having T2D as they will need to be offered a different treatment pathway in line with NICE guidance. Therefore, it's requested to include within this section the following line as per current eligibility for the NHS National Diabetes Prevention Programme (FPG 5.5 – 6.9mmol/l): "They can also be offered a referral into the NHS Diabetes Prevention Programme as they meet the eligibility criteria based on the results of the fasting plasma glucose test."	
NHS England and NHS Improvement – NHS National Diabetes Programme	Guideline	030	001 - 012	NHS England will be undertaking a 12 month national pilot to support the expansion of the NHS Diabetes Prevention Programme (NHS DPP) eligibility criteria to include women with a past diagnosis of gestational diabetes mellitus (GDM) and a blood test in the normal [HbA1c below 42mmol/l or fasting plasma glucose below 5.5mmol/l] range **within the last 12 months**; this may be either via the mandated 6-8 week GP postnatal check-up, yearly screens of individuals diagnosed with GDM in pregnancy or via audits of GP systems. The NHS DPP is currently limited to individuals aged 18 years or over who have 'non-diabetic hyperglycaemia', defined as having an HbA1c result of 42 – 47 mmol/mol (6.0 – 6.4%) or an FPG result of 5.5 – 6.9 mmol/l within the 12 months prior to the date of referral into the Service. Therefore, those with a past diagnosis of gestational diabetes mellitus and a follow-on blood test in the non-diabetic hyperglycaemia (NDH) range within the	*Thank you for your comment. This has been added.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				last 12 months prior to referral are already eligible for the programme under the existing criteria. It is important to exclude those who are confirmed as having T2D as they will need to be offered a different treatment pathway in line with NICE guidance. Therefore, it's requested to include under section 1.6.13 as an additional point (after line 12): "- they can be offered a referral into the NHS Diabetes Prevention Programme if eligible based on the results of the HbA1c test"	
NHS England and NHS Improvement – NHS National Diabetes Programme	Guideline	030	013 - 018	NHS England will be undertaking a 12 month national pilot to support the expansion of the NHS Diabetes Prevention Programme (NHS DPP) eligibility criteria to include women with a past diagnosis of gestational diabetes mellitus (GDM) and a blood test in the normal [HbA1c below 42mmol/l or fasting plasma glucose below 5.5mmol/l] range **within the last 12 months**; this may be either via the mandated 6-8 week GP postnatal check-up, yearly screens of individuals diagnosed with GDM in pregnancy or via audits of GP systems. The NHS DPP is currently limited to individuals aged 18 years or over who have 'non-diabetic hyperglycaemia', defined as having an HbA1c result of 42 – 47 mmol/mol (6.0 – 6.4%) or an FPG result of 5.5 – 6.9 mmol/l within the 12 months prior to the date of referral into the Service. Therefore, those with a past diagnosis of gestational diabetes mellitus and a follow-on blood test in the non-diabetic hyperglycaemia (NDH) range within the last 12 months prior to referral are already eligible for the programme under the existing criteria. It is important to exclude those who are confirmed as having T2D as they will need to be offered a different treatment pathway in line with NICE guidance.	*Thank you for your comment. This has been added.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Therefore, it's requested to include within this section the following line as per current eligibility for the NHS National Diabetes Prevention Programme: "They can be offered a referral into the NHS Diabetes Prevention Programme if eligible based on the results of the HbA1c test"	
Novo Nordisk	Guideline	017 - 018	General	We agree with the recommendations in this update that all pregnant women with type 1 diabetes should have access to, and be taught by a specialist how to use, continuous glucose monitoring or Flash monitoring.	*Thank you for your comment.*
Oxford Centre for Diabetes, Endocrinology and Metabolism	Guideline	012	001	Due to the pandemic, locally we have adopted RCOG emergency guidance on screening of gestational diabetes. We believe that this has caused delays in diagnosis of gestational diabetes and has had adverse effects on birth outcomes.	*Thank you for your comment.*
Oxford Centre for Diabetes, Endocrinology and Metabolism	Guideline	018	011	We agree that women with type 1 diabetes should be offered the choice of flash glucose monitoring (FGM) or continuous glucose monitoring (CGM) during pregnancy, depending on personal preference and clinical indications. We would find this difficult to implement unless funding to both devices was equally accessible. We worry that if funding for one or other device is particularly onerous (e.g. individual funding requests) that this will affect local provision and that women will not be presented with both options fairly. We are reassured by the evidence review that in type 1 diabetes, FGM is likely non-inferior to CGM. We have offered FGM since April 2019 to all pregnant women with type 1 diabetes. This is usually well-received but some women do report that FGM does over-estimate hypoglycaemia and that they feel less confident to carbohydrate count and administer insulin using FGM glucose values.	*Thank you for your comment. The committee have revisited the evidence and have amended the recommendations to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes. The committee further noted that intermittently scanned CGM (isCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it.*
Oxford Centre for Diabetes, Endocrinology	Guideline	018	016	This guideline suggests that CGM should be considered in any woman with diabetes managed with insulin during pregnancy. Locally, this could potentially include all women with type 2 diabetes (~20 per year) and gestational diabetes (~80 women	*Thank you for your comment. Type 2 diabetes was outside the remit of this update; therefore, a review could not be conducted to cover this population. However, the committee noted that*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
and Metabolism				requiring insulin therapy per year). This would be very challenging to implement without a clear funding stream. We currently have sufficient diabetes specialist support (doctor and nurse) to support women with type 1 diabetes using CGM, but would struggle to deliver this service to all pregnant women with diabetes managed with insulin. It would be useful to see evidence for pregnancy and neonatal outcomes for the use of these devices in pregnant with type 2 diabetes and gestational diabetes.	*recommendations were required to cover women who are on insulin therapy but do not have type1 diabetes.* *The committee reviewed the recommendation and have amended it further to state that continuous glucose monitoring should be considered for pregnant women who are on insulin therapy but do not have type 1 diabetes if they have problematic severe hypoglycaemia (with or without impaired awareness of hypoglycaemia) or they have unstable blood glucose levels that are causing concern despite efforts to optimise glycaemic control.* *The committee stated that it was important to identify the specific population who need continuous glucose monitoring. The committee's discussion and interpretation of evidence section (Section 1.1.11) in the evidence review has been amended to further highlight the committee views.*
Oxford Centre for Diabetes, Endocrinology and Metabolism	Guideline	021	022	During the pandemic, locally we have conducted consultations virtually (telephone and/or video calls) to reduce the number of face-to-face reviews.	*Thank you for your comment. The committee's discussion and interpretation section of the evidence review (section 1.1.11) has been updated to highlight the benefits of remote monitoring.*
Pregnancy Sickness Support	Guideline	006	018	1.1.9 - If a woman has experienced pregnancy sickness or hyperemesis gravidarum in a previous pregnancy they have a 70-80% chance of having it again and therefore this needs to be included in the pregnancy planning process to ensure the woman has access to pre-emptive treatment and an aggressive and thorough management plan in place enabling her to maintain her diet necessary to control diabetes symptoms.	*Thank you for your comment. Recommendations on the diet, dietary supplements and body weight are out of scope for this update.*
Pregnancy Sickness Support	Guideline	013	001	1.2.10 - If suffering with pregnancy sickness or hyperemesis gravidarum in pregnancy healthcare professionals need to refer to the RCOG GTG 69 to enable access to all medications and aggressive treatment of the condition to enable management of food and fluid intake and diabetes symptoms.	*Thank you for your comment. This is out of scope for this update.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Royal College of Obstetricians and Gynaecologists (RCOG)	Guideline	018	001 – 027	The available evidence regarding flash and continuous glucose monitoring (GM) has been rigorously reviewed and the option of either flash or continuous GM has been summarised clearly. My only comment however is that it was not made clear which is the recommended GM method for pregnant women with well controlled pre-pregnancy T1DM who had been using intermittent GM before pregnancy. If the guideline is recommending that women using intermittent GM should stop this method and switch to either flash or continuous GM after they conceive, it may be prudent to specifically state this, as at present the wording implies that flash or continuous GM should be used only for women already using these methods pre-pregnancy.	Thank you for your comment. *The recommendations have been amended to state that CGM should be offered to all women with type 1 diabetes to help them meet their pregnancy blood glucose targets and improve neonatal outcomes.. The committee also further recommended that intermittently scanned CGM (iaCGM, commonly referred to as flash) can be offered to women who are unable to use CGM or express a clear preference for it. The committee did consider that some women using flash may prefer to continue using it throughout their pregnancy. But the committee highlighted that discussion should occur between clinicians and patients and decisions should be made based on individual needs. The committee's discussion and interpretation of evidence section in the evidence review (Section 1.1.11) has been amended.*
Royal College of Paediatrics and Child Health	Guideline	General	General	The diagnosis of monogenic diabetes should be considered in people with diabetes who have an atypical presentation.	*Thank you for your comment. This is out of scope for this update.*
Royal College of Paediatrics and Child Health	Guideline	025	General	Section 5 - The reviewer agrees with what is included in the guideline. Other two important aspects of neonatal care should be reinforced here: 1. Early feeding 2. Normothermia. An excerpt from the NICE postnatal care guideline could be referenced as below: "*Healthy babies should have normal colour for their ethnicity, maintain a stable body temperature, and pass urine and stools at regular intervals. They initiate feeds, suck well on the breast (or bottle) and settle between feeds. They are not excessively irritable, tense, sleepy or floppy. The vital signs of a healthy baby should fall within the following ranges:* • *respiratory rate normally 30−60 breaths per minute* • *heart rate normally between 100 and 160 beats per minute in a newborn*	*Thank you for your comment. This is out of scope for this update*.

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				• *temperature in a normal room environment of around 37°C (if measured)."* Feeding is mentioned in section 1.5.9 but it should be part of the initial assessment and then referenced in 1.5.9. Hypothermia and hypoglycaemia are an unwelcome combination and makes things worse. It is important to ensure that the focus is redoubled on avoiding hypothermia in these babies at risk of hypoglycaemia.	
Royal College of Paediatrics and Child Health	Guideline	027	General	Section 5 - BAPM guidance (2017) recommends the use of buccal Dextrose gel '*Buccal dextrose gel may be used in conjunction with a feeding plan when the blood glucose is 1.0-1.9mmol/l*.' It will be a useful addition for NICE team to review and appraise.	*Thank you for your response. This is out of scope for this update. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.*
Sussex Community Foundation NHS Trust	Guideline	006	020	Should not the BMI cut off be sensitive to ethnicity ie take into account the different risks that women from different ethnic backgrounds have and be phrased to take the needs of all into account.	*Thank you for your comment. Recommendations on the diet, dietary supplements and body weight are out of scope for this update.*
Sussex Community Foundation NHS Trust	Guideline	007	002	It would be more reasonable to state up to monthly HbA1c levels for women with diabetes planning a pregnancy. It doesn't seem a good use of resources for every woman who is planning pregnancy to have a monthly A1c.	*Thank you for your comment. This has been amended. Committee's discussion and interpretation of evidence section (section 1.1.11) has been also been amended.*
Sussex Community Foundation NHS Trust	Guideline	011	010	Should not the BMI cut off again be sensitive to ethnicity in determining risk of GDM and therefore BMI cut off for testing. It is concerning that this BMI may cut off may inadvertantly exclude people from BAME backgrounds from being tested.	*Thank you for your comment. This is out of scope for this update.*
The Breastfeeding Network	Guideline	General	General	No mention of using collected colostrum to maintain baby blood glucose levels or how to assist mother with hand expression if necessary to stimulate supply There can be delays in mothers being seen by midwifery staff after discharge. Ensure that the mother is feeding effectively and frequently and signs of poor milk transfer that she should be	*Thank you for your comment. This is out of scope for this update. General guidance on breastfeeding can be found in guideline CG37 postnatal care up to 8 weeks after birth.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				aware of in her baby eg wet and dirty nappies, sleeping for long periods. Although the guideline is diabetes in pregnancy the scope has been extended to include breastfeeding but this is largely not covered. Has it been seen by a midwife specialising in diabetes care ie normal breastfeeding rather than a clinical situation requiring intervention by a paediatrician. There is no mention of discussing with the mother why blood glucose levels in the baby are important. In my experience frequently the first intervention id formula feed top ups rather than encouraging a better milk supply Donor breastmilk would also be an excellent, cost effective substitute for formula with improved outcomes of exclusive breastfeeding as shown by recent research by Dr Natalie Shenker at the Human Milk Foundation.	
The Breastfeeding Network	Guideline	009	001 - 008	1.1.24 and 1.1.25 no mention of restarting these post natally. Statins not compatible with breastfeeding. Limited evidence on sartans . Page 28 line 4 unclear . Enalapril would be compatible with breastfeeding	*Thank you for your comment. This is out of scope for this update.*
The Breastfeeding Network	Guideline	023	General	36 weeks or sooner discuss expression of colostrum to be used postnatally to maintain baby blood sugars as per Dame study which is current common practice Foster, DA, et al (2017), Advising women with diabetes in pregnancy to express breastmilk in late pregnancy (Diabetes and Antenatal Milk Expressing [DAME]): a multicentre, unblinded, randomised controlled trial. The Lancet, DOI: http://dx.doi.org/10.1016/S0140-6736(17)31373-9	*Thank you for your comment. This is out of scope for this update.*
The Breastfeeding Network	Guideline	023	General	36 weeks or ideally from early maternity contact, discuss advantages of breastfeeding to mother and baby	*Thank you for your comment. This is out of scope for this update*.

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Alves JG, Figueiroa JN, Meneses J, Alves GV. Breastfeeding protects against type 1 diabetes mellitus: a case-sibling study. Breastfeed Med. 2012 Feb;7(1):25-8 Gunderson EP, Hurston SR, Ning X, Lo JC, Crites Y, Walton D, Dewey KG, Azevedo RA, Young S, Fox G, Elmasian CC, Salvador N, Lum M, Sternfeld B, Quesenberry CP Jr; Study of Women, Infant Feeding and Type 2 Diabetes After GDM Pregnancy Investigators. Lactation and Progression to Type 2 Diabetes Mellitus After Gestational Diabetes Mellitus: A Prospective Cohort Study. Ann Intern Med. 2015 Dec 15;163(12):889-98) Schwarz EB, Brown JS, Creasman JM, et al. Lactation and maternal risk of type 2 diabetes: a population-based study [published correction appears in Am J Med. 2011 Oct;124(10): e9]. Am J Med. 2010;123(9):863. https://www.unicef.org.uk/babyfriendly/news-and-research/baby-friendly-research/infant-health-research/infant-health-research-diabetes/none	
The Breastfeeding Network	Guideline	026	016	There can be delays in mothers being seen by midwifery staff after discharge. Ensure that the mother is feeding effectively and frequently and signs of poor milk transfer that she should be aware of in her baby eg wet and dirty nappies, sleeping for long periods.	*Thank you for your comment. This is out of scope for this update.*
The Breastfeeding Network	Guideline	027	015 - 023	Insulin requirements may be reduced by 27% (Davies RR, McEwen J, Moreland TA, Durnin C, Newton RW. Improvement in morning hyperglycaemia with basal human ultratard and prandial human actrapid insulin--a comparison of injection regimens. Diabetic Medicine 1988; 5:671-5. Diabetic mothers increased their carbohydrate intake by 50g whilst breastfeeding whilst requiring 40 units insulin compared with 45 units pre-pregnancy (Whichelow MJ, Doddridge MC.	*Thank you for your comment. This is out of scope for this update.*

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				Lactation in diabetic women. Br Med J (Clin Res Ed) 1983;3;287(6393):649–650. Immediately after delivery carbohydrate snacks should be available and glucose tablets to counteract any hypoglycaemia. This may need additional food available in hospital Mothers should be reminded to have snacks available during night-time feeds and to monitor blood glucose levels if necessary, in order to adjust insulin requirements	
The Breastfeeding Network	Guideline	027	General	Mothers with Type 1 diabetes are less likely to breastfeed (77% vs 86%) and those who do continue for a shorter duration (12 vs 17 weeks) Hummel C. Winkler S. Schoen A. Knopff S. Marienfeld E. Bonifacio A. G. Ziegler. Breastfeeding habits in families with Type 1 diabetes. Diabetic Med. 2007; 24 (6): 671-676	*Thank you for your comment. This is out of scope for this update.*
The Breastfeeding Network	Guideline	038	General	No mention of using collected colostrum to maintain baby blood glucose levels or how to assist mother with hand expression if necessary to stimulate supply	*Thank you for your comment. This is out of scope for this guideline.*
The Royal College of Midwives (RCM)	Guideline	General	General	The RCM welcomes consultation to update this guideline and in general agrees with the new recommendations. We acknowledge that any comments on the grey areas of guideline are not included in the consultation. However, RCM believes there is a missed opportunity to review some other areas of existing recommendations where our members have queried wording that is ambiguous and in practice allows for different interpretation or lack of clarity.	*Thank you for your comment. Areas which are identified as requiring an update are passed on to NICE surveillance team which monitors guidelines to ensure they are up to date.*
The Royal College of Midwives (RCM)	Guideline	General	General	RCM and RCOG acknowledge that the impact of COVID-19 epidemic may have impact on screening for diabetes and recommend 'Appropriate screening for diabetes in pregnancy should still be provided, following NICE guidance as far as possible, with awareness that modifications to screening protocols may be associated with a reduction in the detection of cases of gestational diabetes at the lowest risk of complications.	*Thank you for your comment. We are aware that COVID-19 guidance has been published by the RCM and RCOG and it is anticipated that clinicians will be following these.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
				https://www.rcm.org.uk/media/4383/2020-10-14-coronavirus-covid-19-infection-in-pregnancy-v12.pdf	
The Royal College of Midwives (RCM)	Guideline	034 - 035	026 (1-9)	These new research recommendations are appropriate and RCM supports research that can add to the marginal evidence base for glucose monitoring pre-pregnancy and for pregnant women.	*Thank you for your comment.*
The Royal College of Midwives (RCM)	Guideline	039	021	RCM agrees with the table 3 listed proposed deletions.	*Thank you for your comment.*
The Royal College of Midwives (RCM)	Guideline	040	003	RCM agrees with the Table 3 listed amended recommendation wordings	*Thank you for your comment.*
The Royal College of Nursing	General	General	General	Thank you for the opportunity to contribute to this guideline but we do not have any comments to add on this occasion.	*Thank you for your comment.*
UK Clinical Pharmacy Association (UKCPA) - Women's Health Committee	Guideline	014	028	We're under the impression that glibenclamide 2.5mg and 5mg tablets have been discontinued as per memo sent out in November 2019. Please check if this is the case.	*Thank you for your comment. Reference to glibenclamide has been removed from the guideline.*
UK Clinical Pharmacy Association (UKCPA) - Women's Health Committee	Guideline	015	06	As per comment 1 [We're under the impression that glibenclamide 2.5mg and 5mg tablets have been discontinued as per memo sent out in November 2019. Please check if this is the case.]	*Thank you for your comment. Reference to glibenclamide has been removed from the guideline.*
UK Clinical Pharmacy Association (UKCPA) -	Guideline	016	009	As per comment 1 [We're under the impression that glibenclamide 2.5mg and 5mg tablets have been discontinued as per memo sent out in November 2019. Please check if this is the case.]	*Thank you for your comment. Reference to glibenclamide has been removed from the guideline.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
Women's Health Committee					
UK Clinical Pharmacy Association (UKCPA) - Women's Health Committee	Guideline	025	005	The Joint British Diabetes Societies for inpatient care report that came out in May 2017 (*Management of glycaemic control in pregnant women with diabetes on obstetric wards and delivery units*) recommends the use of sodium chloride 0.9% & glucose 5% & potassium chloride 0.15% or 0.3% as the intravenous fluid of choice for variable rate intravenous insulin infusion and not dextrose. Please review if this needs updating.	*Thank you for your comment. This is out of scope for this update.*
UK Clinical Pharmacy Association (UKCPA) - Women's Health Committee	Guideline	025	007	As per comment 7 [The Joint British Diabetes Societies for inpatient care report that came out in May 2017 (*Management of glycaemic control in pregnant women with diabetes on obstetric wards and delivery units*) recommends the use of sodium chloride 0.9% & glucose 5% & potassium chloride 0.15% or 0.3% as the intravenous fluid of choice for variable rate intravenous insulin infusion and not dextrose. Please review if this needs updating.]	*Thank you for your response. This is out of scope for this update. We will pass your comment to the NICE surveillance team which monitors guidelines to ensure that they are up to date.*
UK Clinical Pharmacy Association (UKCPA) - Women's Health Committee	Guideline	027	025	As per comment 1 [We're under the impression that glibenclamide 2.5mg and 5mg tablets have been discontinued as per memo sent out in November 2019. Please check if this is the case.]	*Thank you for your comment. Reference to glibenclamide has been removed from the guideline.*
UK Clinical Pharmacy Association (UKCPA) - Women's Health Committee	Guideline	028	002	As per comment 1 [We're under the impression that glibenclamide 2.5mg and 5mg tablets have been discontinued as per memo sent out in November 2019. Please check if this is the case.]	*Thank you for your comment. Reference to glibenclamide has been removed from the guideline.*
UK Clinical Pharmacy Association	Guideline	041	021	As per comment 1 [We're under the impression that glibenclamide 2.5mg and 5mg tablets have been discontinued	*Thank you for your comment. Reference to glibenclamide has been removed from the guideline.*

Diabetes in pregnancy: management from preconception to the postnatal period

Consultation on draft guideline - Stakeholder comments table
23/09/2020 – 21/10/2020

Stakeholder	Document	Page No	Line No	Comments	Developer's response
(UKCPA) - Women's Health Committee				as per memo sent out in November 2019. Please check if this is the case.]	

None of the stakeholders who comments on this clinical guideline have declared any links to the tobacco industry.