

DAFNE – Self Empowerment

Specialist Registrar National Update Meeting
1st February 2024

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Chair of DAFNE
Clinical Lead for Diabetes Sheffield

Disclosures

- I have received educational speaker / advisory board fees from:
 - Abbott, Boehringer, Dexcom, Insulet, NovoNordisk, Roche, Sanofi

What is important with any intervention in type 1 diabetes?

For people with type 1	For healthcare professionals

What is important with any intervention in type 1 diabetes?

For people living with type 1	For healthcare professionals
Better quality of life	
Lower HbA1cs	
Fewer hypos	
Less DKAs	
Flexible, more normal life	
Consistent messages	
Low risk	
Logical	

What is important with any intervention in type 1 diabetes?

For people living with type 1

For healthcare professionals

Better quality of life

Evidence base

Lower HbA1cs

Reproducible

Fewer hypos

Wide reach

Less DKAs

Low cost

Flexible, more normal life

Good job satisfaction

Consistent messages

High quality training - accredited

Low risk

Resources updated

Logical

Supportive environment


Structured Diabetes Education



- Both interventions can reduce HbA1c, reduce complications and improve quality of life....
- Should either of these:
 - Be produced and delivered by untrained staff?
 - Have variable content and uncertain ingredients?
 - Be omitted for lack of resources?
 - Be taken in half the dose to save money?

Structured Diabetes Education

Diabetes Care Volume 44, November 2021 2589




The Management of Type 1 Diabetes in Adults. A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)

Richard I.G. Holt,^{1,2} J. Hans DeVries,^{3,4} Amy Hess-Fischl,⁵ Irl B. Hirsch,⁶ M. Sue Kirkman,⁷ Tomasz Klupa,⁸ Barbara Ludwig,⁹ Kirsten Nørgaard,^{10,11} Jeremy Pettus,¹² Eric Renard,^{13,14} Jay S. Skyler,¹⁵ Frank J. Snoek,¹⁶ Ruth S. Weinstock,¹⁷ and Anne L. Peters¹⁸

Diabetes Care 2021;44:2589–2625 | <https://doi.org/10.2337/dci21-0043>

NICE National Institute for Health and Care Excellence



Type 1 diabetes in adults: diagnosis and management

NICE guideline
Published: 26 August 2015
Last updated: 17 August 2022

www.nice.org.uk/guidance/ng17

- An essential component of Type 1 diabetes care¹
- Aims to empower people with Type 1 diabetes, with an emphasis on shared decision-making and active collaboration with the health care team¹
- Offer all adults with Type 1 diabetes a structured education programme of proven benefit, for example, the DAFNE programme²

¹Holt et al (2021) Diabetes Care, ²NICE (2022);

Structured Diabetes Education – what's different?

- **It's not:** didactic delivery of information to a group of passive listeners or inviting questions at the end of a session
- Goal: **competence** (what individuals know or are able to do in terms of knowledge, skills and attitudes) and **confidence** (the extent to which individuals can adapt to change, generate new knowledge, and continue to improve their performance)¹
- Criteria^{2,3}:
 1. **Philosophy:** underpinned by a patient-centred philosophy
 2. **Curriculum:** written, aim and objectives, detailed lesson plans.
 3. **Trained educators:** familiar with learning theories, facilitation skills to assist the participants to problem solve and set personal goal, diabetes expertise.
 4. **Quality Assurance:** internal and external
 5. **Audit**

¹Fraser & Greenhalgh (2001) BMJ);²HSE (2009); ³NICE (2022)

DAFNE Collaborative

A huge network

- 110 centres in UK, 210 localities
- + Oz, Kuwait, Qatar
- 726 active educators
- 96% of centres offering Remote DAFNE
- 465 doctors completed remote training (35 in 2019), 17% from non-DAFNE centres
- 200 non-DAFNE educators have completed HCP units on intensive insulin treatment and carb counting basics
- 2900 DAFNE graduates 2023 (51% F2F)

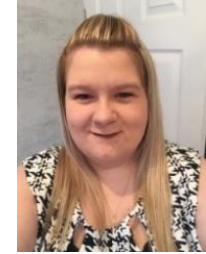




Gill Thompson
National DAFNE
Director



Becky Hedgcock
National Operations
Manager



Sally Woolgar

National Trainers

Liesl Richardson



Central DAFNE team – Northumbria NHS Trust



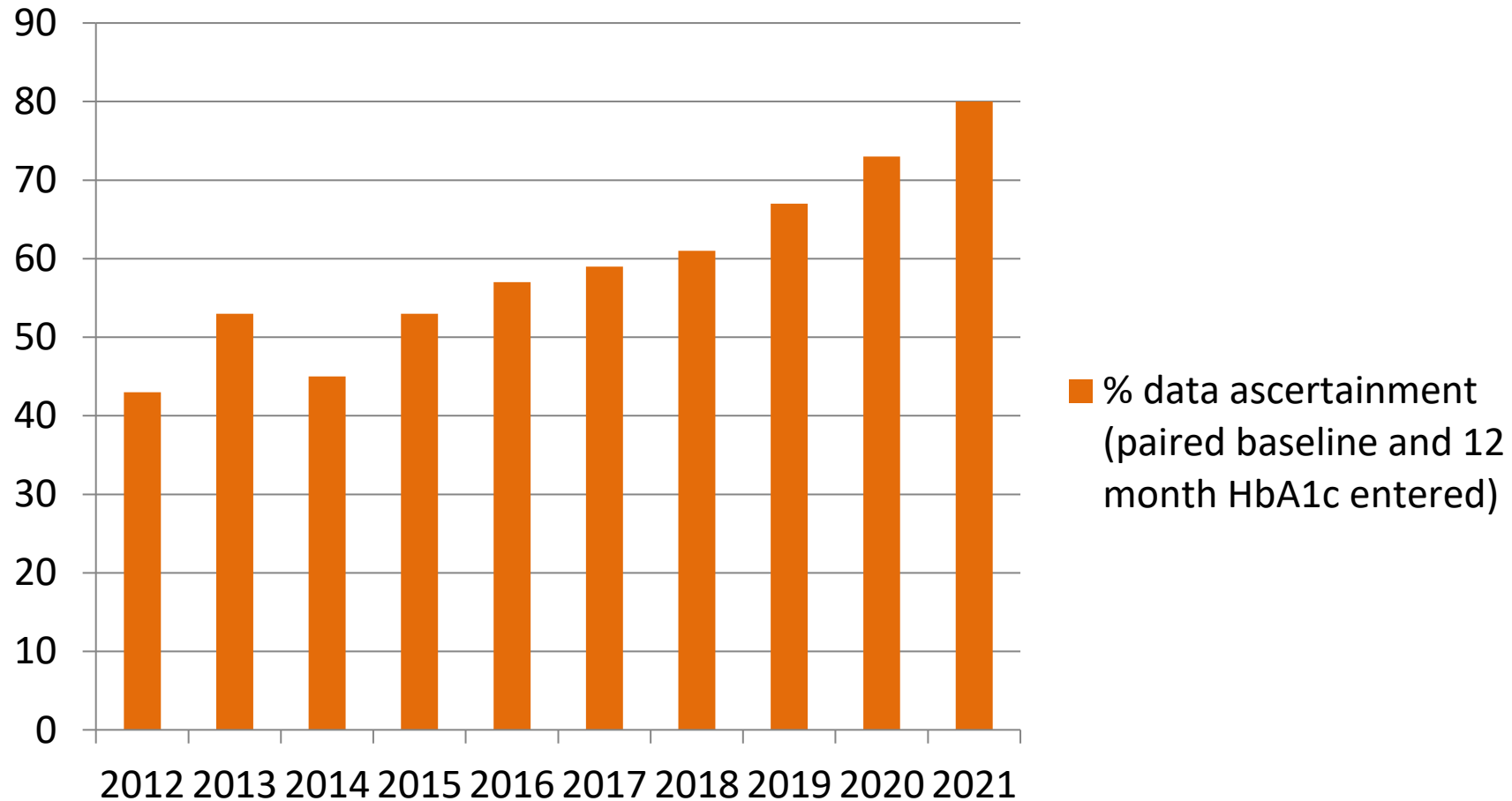
Sam Adler, Alexa Wilson, Paula
Longstaff – admin assistants



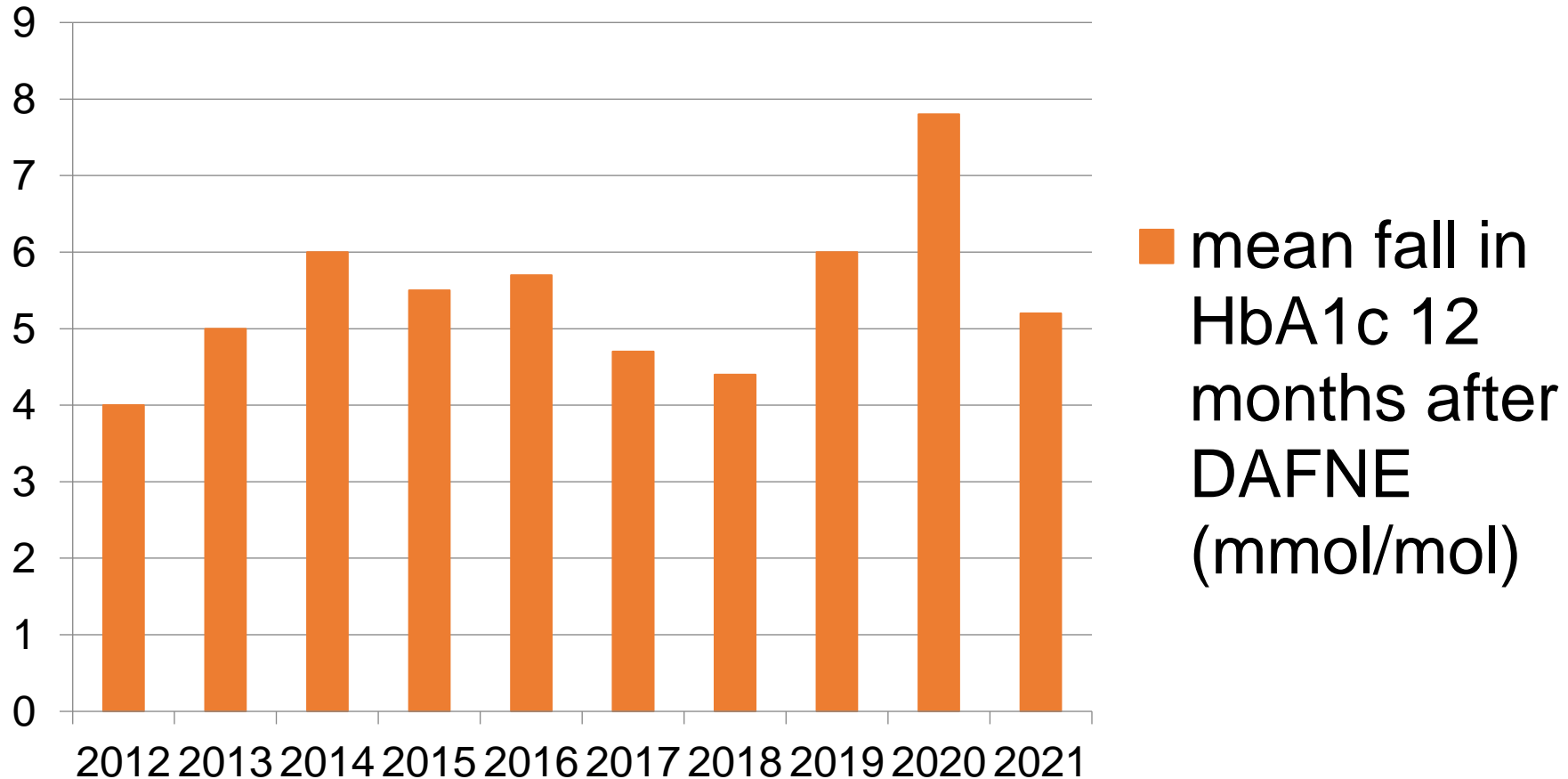
Responsible and Accountable
to Executive Board



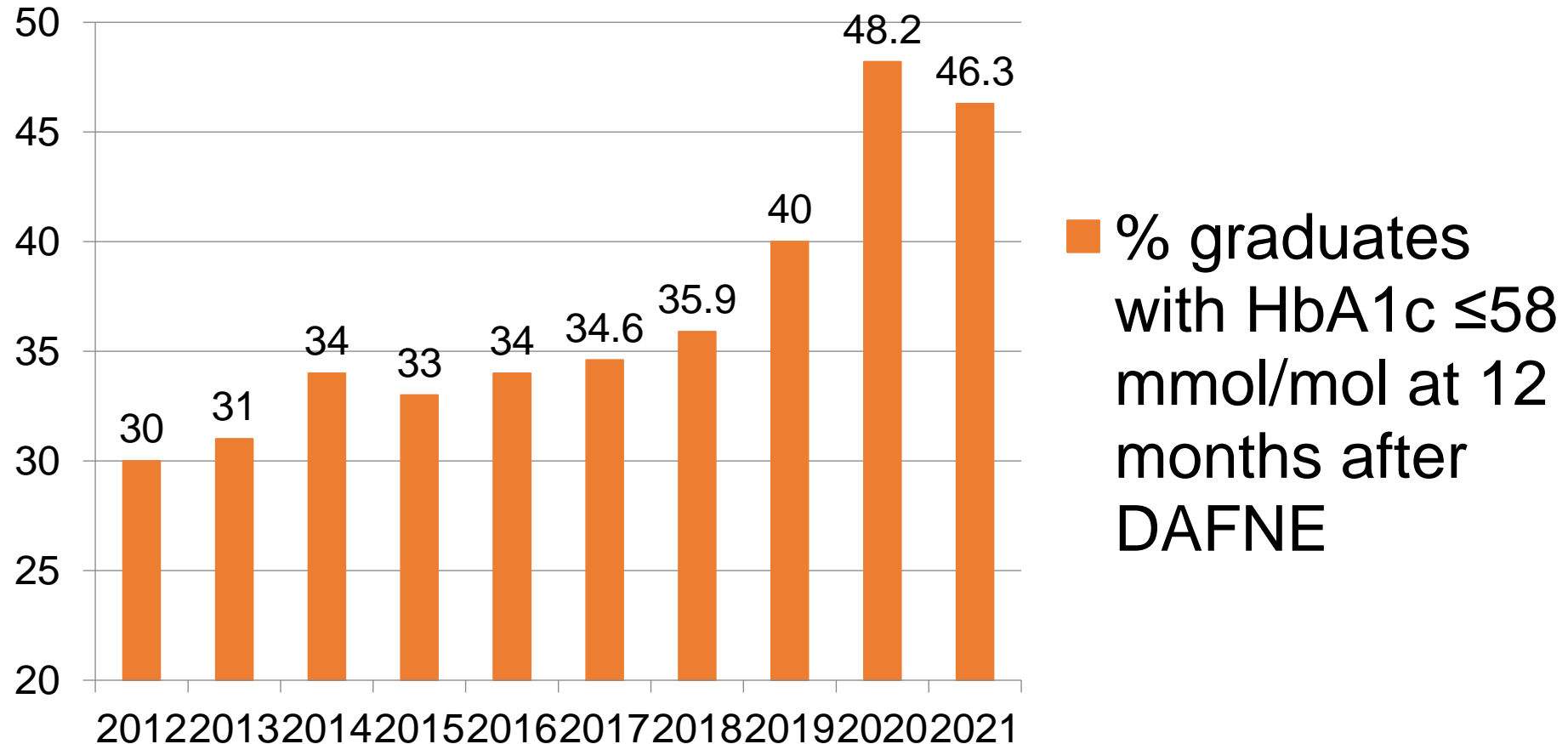
Driving up data ascertainment annual KPI data



Achieving a reduction in HbA1c annual KPI

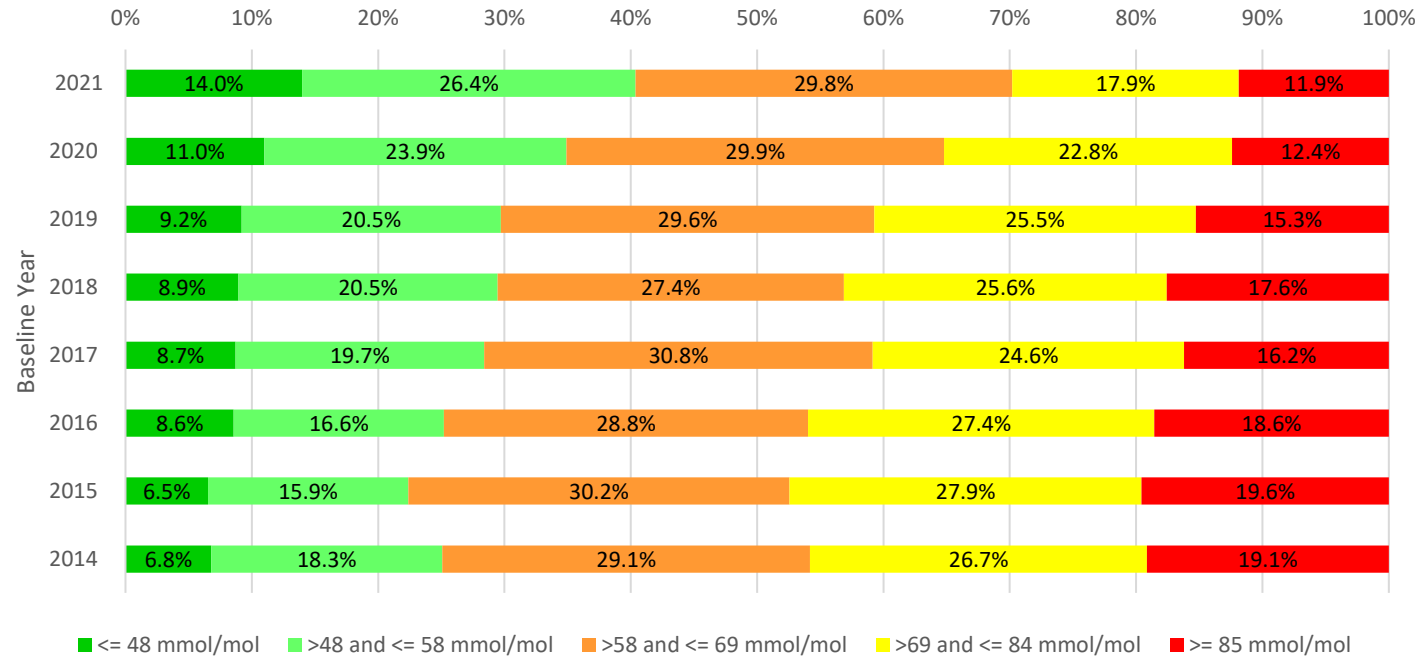


Achieving glycaemic targets annual KPI

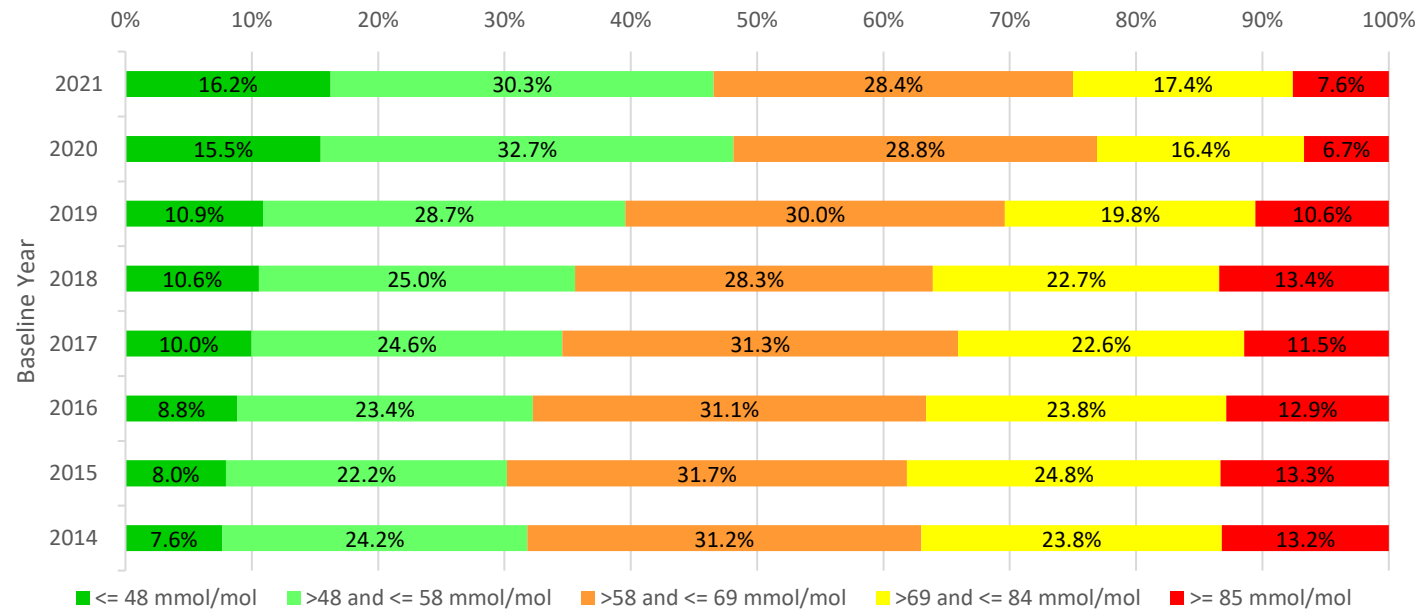


**Over 14,400
people with type 1**

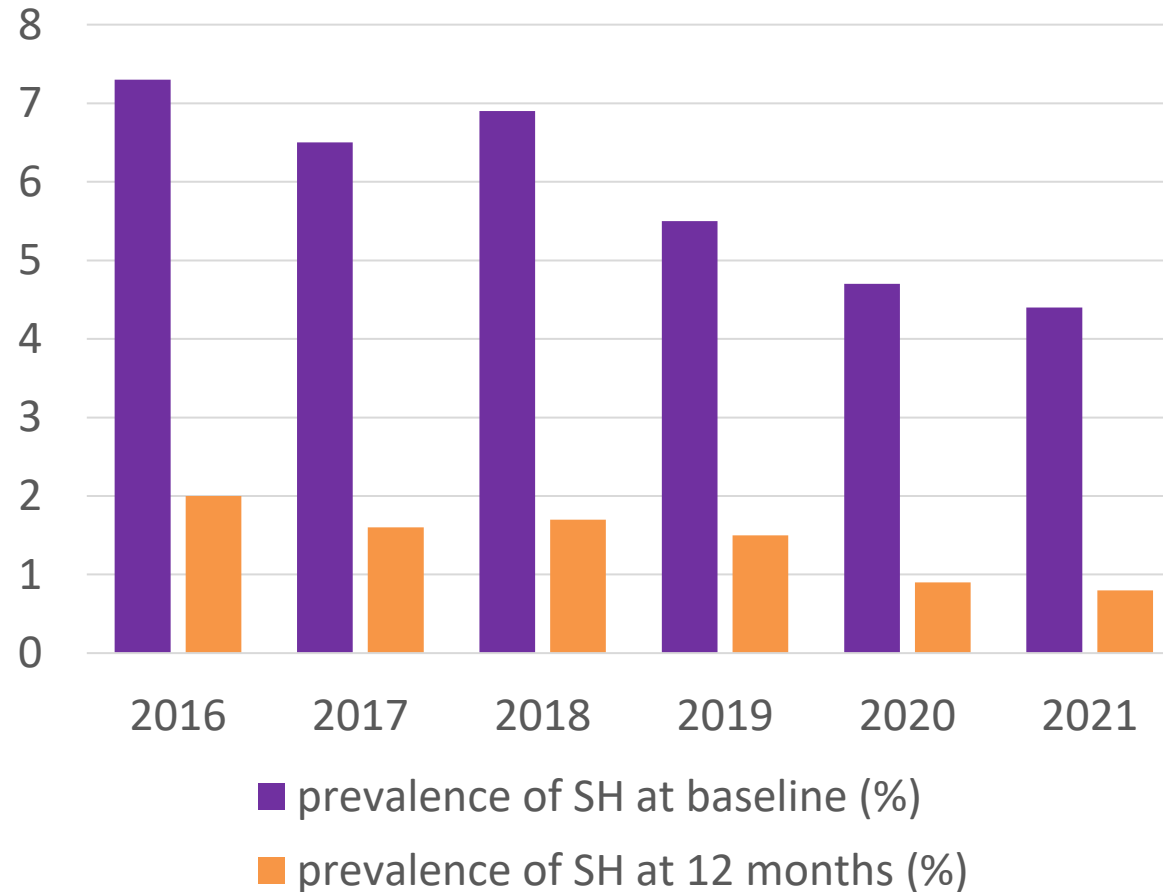
Baseline HbA1c Values for Patients with Paired Data



1 Year HbA1c Values for Patients with Paired Data

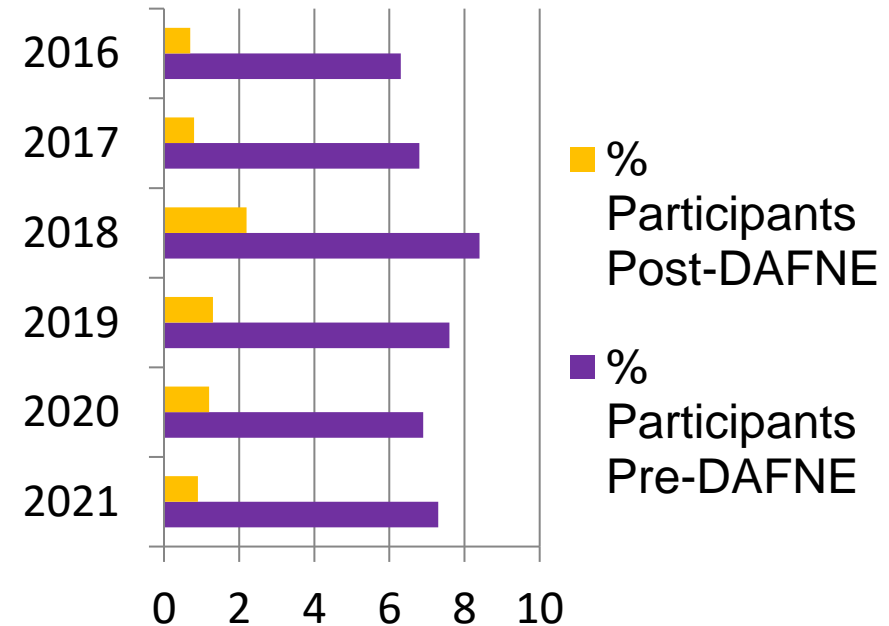
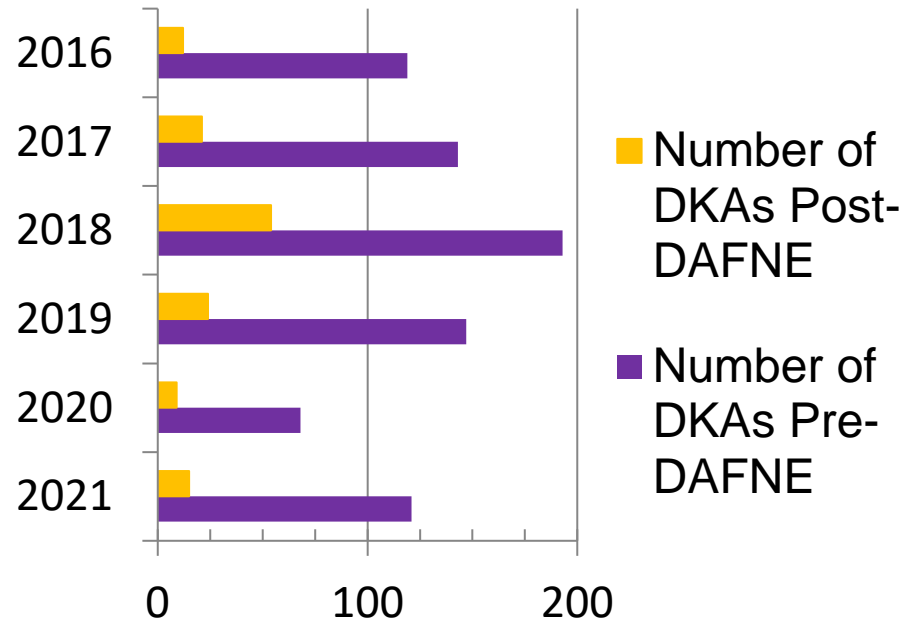


Reduced prevalence of severe hypoglycaemia after DAFNE



Prevalence of severe hypoglycaemia is reduced by 72 - 82 % each year

DAFNE also reduces DKAs



Post DAFNE the number of DKA episodes has reduced every year by 72 – 90 %

Post DAFNE the number of patients experiencing DKA has reduced every year by 74 – 89 %

Conclusions

Better Data Quality

Data
ascertainment
now > 80%

More centres
achieving > 50 %
paired data

Lower HbA1cs

Consistently
4 – 8 mmol/mol
reduction

More people at
target of
 ≤ 58 mmol/mol
(46%)

Less SHs and DKAs

SHs reduced by
~ 75%

DKAs reduced
by ~80 %



100%

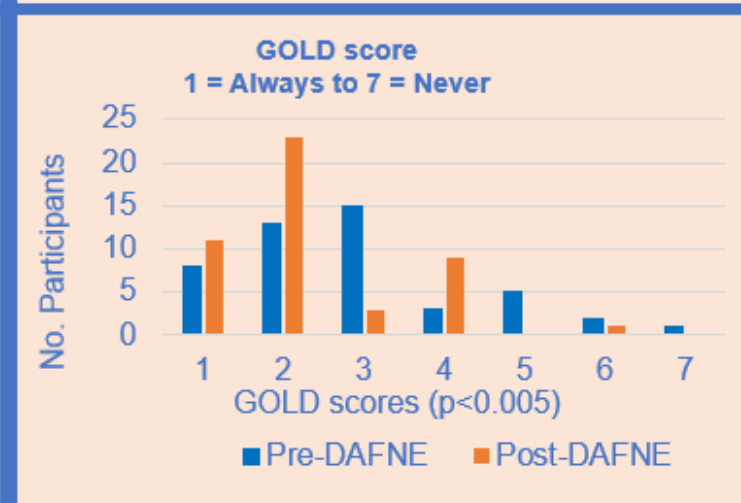
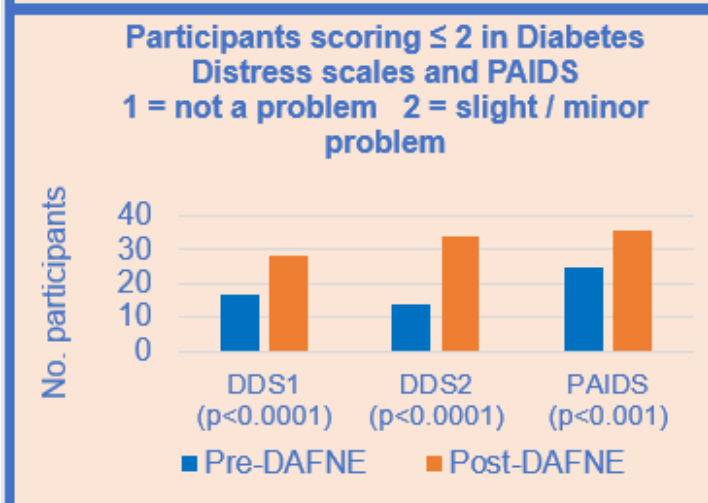
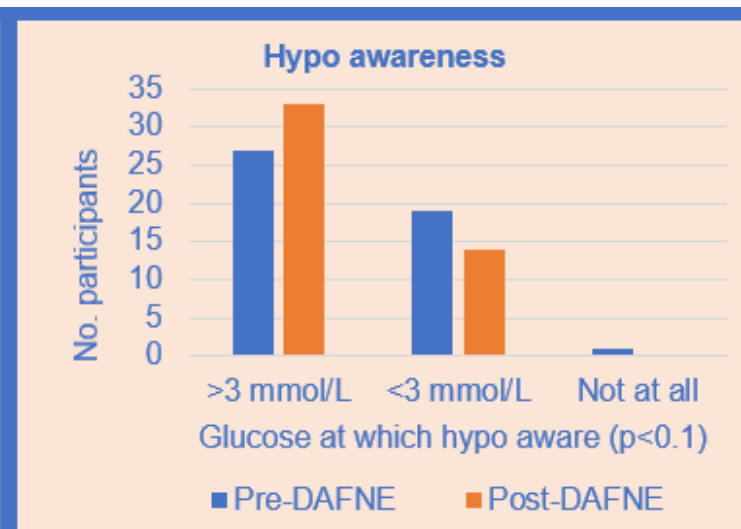
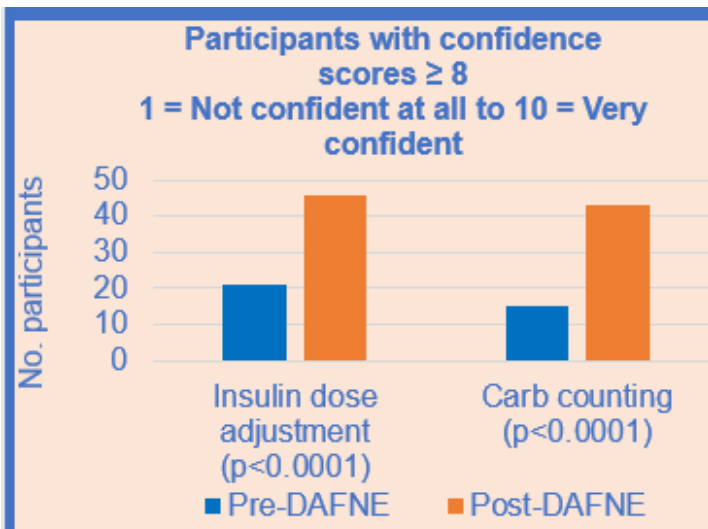
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Diabetes decisions:
Always
think about
doing everything
properly to ensure
everyday safety and to
achieve good
treatment quality

What does MDI management with CGM really mean though in everyday life with diabetes?

- 5.30 a.m. Get up, monitor, inject basal insulin
- 6.30 a.m. Calculate breakfast carb, calculate correction insulin, calculate bolus insulin
- 7.15 a.m. Monitor CGM, drive to work
- 8.30 a.m. Monitor CGM prior to meeting
- 11.00 a.m. Hassle with the boss / monitor CGM, correction of BG increase
- 12.00 p.m. Monitoring CGM, lunch in the canteen, calculate carb, calculate correction, think about overlapping action profile (11 a.m.), calculate bolus
- 1.30 p.m. Some hypo symptoms, monitor, eat, treat hypo
- 3.00 p.m. Invited to coffee by a colleague, estimate the carb content of the cake, inject bolus insulin
- 4.00 p.m. Meeting, give a talk (stressful) so BG rises
- 5.00 p.m. Monitor, calculate correction insulin, correct
- 5.30 p.m. Last-minute task for the next day (stressful) so BG rises
- 6.00 p.m. Monitor, insulin correction, drive home
- 6.30 p.m. Go shopping
- 7.00 p.m. Cook
- 8.00 p.m. Evening meal, monitor, calculate mealtime carb, calculate correction insulin, calculate bolus insulin and inject
- 9.00 p.m. Finish last-minute task
- 11.00 p.m. Monitor, inject basal insulin, calculate correction insulin
- 11.10 p.m. Go to sleep at last





Conclusions

DAFNE structured education...

- Improves emotional wellbeing
- Increases confidence in insulin dose adjustment
- Increases confidence in carbohydrate counting
- Improves hypo awareness (GOLD score)

Before DAFNE:

‘I find diabetes exhausting.’

After
DAFNE:



‘I feel like I have more understanding of what impacts my BG levels and how to manage this. I think my % in target has improved since being on the course and I feel **more confidence** in making changes when needed.’

Before DAFNE:

I can't seem to be consistent, I have hypos in the night and I can't work them out.

After
DAFNE:



‘I feel I am now in more control of my diabetes.
Diabetes fits into my life now, not the other way round.’

Before DAFNE:

‘Although I live with Diabetes every waking hour, I refuse to be limited by the condition and endeavour to lead a life that is not constrained by the affliction.’

**After
DAFNE:**



‘Combined with a practical self- education over 25 years, I **am confident** that I now know what I am talking about.
DAFNE has certainly enlightened me as to the logic and sense of Carb counting to improve my diabetic control. I suppose the proof of that will be demonstrated over time.’

Before DAFNE:

‘Find it very difficult to navigate the system having received the diagnosis as an adult.’

**After
DAFNE:**



‘Despite being a diabetic for a few years now, there was so much information that was never disclosed before or that I didn’t even know was relevant. Being in DAFNE has made me more aware of how to behave in a wider range of circumstances and how to manage them for the best, and **being able to share it with a great group of people made it all much better and easier to handle.**’

DAFNEplus

(Multicentre RCT,
12 month FU)



Curriculum

Integrated Technology

Structured Follow-Up

1. Breckenridge, J. P., Gianfrancesco, C., de Zoysa, N., Lawton, J., Rankin, D. and Coates, E. (2018) **'Mobilising knowledge between practitioners and researchers to iteratively refine a complex intervention (DAFNEplus) pre-trial: protocol for a structured collaborative working group process'**, *Pilot Feasibility Stud*, 4, pp. 120.
2. Campbell, F., Lawton, J., Rankin, D., Clowes, M., Coates, E., Heller, S., de Zoysa, N., Elliott, J. and Breckenridge, J. P. (2018) **'Follow-Up Support for Effective type 1 Diabetes self-management (The FUSED Model): A systematic review and meta-ethnography of the barriers, facilitators and recommendations for sustaining self-management skills after attending a structured education programme'**, *BMC Health Serv Res*, 18(1), pp. 898.
3. Coates, E., Amiel, S., Baird, W., Benaissa, M., Brennan, A., Campbell, M. J., Chadwick, P., Chater, T., Choudhary, P., Cooke, D., Cooper, C., Cross, E., De Zoysa, N., Eissa, M., Elliott, J., Gianfrancesco, C., Good, T., Hopkins, D., Hui, Z., Lawton, J., Lorencatto, F., Michie, S., Pollard, D. J., Rankin, D., Schutter, J., Scott, E., Speight, J., Stanton-Fay, S., Taylor, C., Thompson, G., Totton, N., Yardley, L., Zaitcev, A., Heller, S. and group, D. (2021) **'Protocol for a cluster randomised controlled trial of the DAFNE'**, *BMJ Open*, 11(1), pp. e040438.
4. Eissa, M. R., Good, T., Elliott, J. and Benaissa, M. (2020) **'Intelligent Data-Driven Model for Diabetes Diurnal Patterns Analysis'**, *IEEE J Biomed Health Inform*, 24(10), pp. 2984-2992.
5. Hamilton, K., Stanton-Fay, S. H., Chadwick, P. M., Lorencatto, F., de Zoysa, N., Gianfrancesco, C., Taylor, C., Coates, E., Breckenridge, J. P., Cooke, D., Heller, S. R., Michie, S. and group, D. s. (2021) **'Sustained type 1 diabetes self-management: Specifying the behaviours involved and their influences'**, *Diabet Med*, 38(5), pp. e14430.
6. Heller, S. R., Gianfrancesco, C., Taylor, C. and Elliott, J. (2020) **'What are the characteristics of the best type 1 diabetes patient education programmes (from diagnosis to long-term care), do they improve outcomes and what is required to make them more effective?'**, *Diabet Med*, 37(4), pp. 545-554.
7. Holmes-Truscott, E., Cooke, D. D., Hendrieckx, C., Coates, E. J., Heller, S. R. and Speight, J. (2021) **'A comparison of the acceptability and psychometric properties of scales assessing the impact of type 1 diabetes on quality of life-Results of 'YourSAY: Quality of Life''**, *Diabet Med*, 38(6), pp. e14524.
8. Stanton-Fay, S. H., Hamilton, K., Chadwick, P. M., Lorencatto, F., Gianfrancesco, C., de Zoysa, N., Coates, E., Cooke, D., McBain, H., Heller, S. R., Michie, S. and group, D. s. (2021) **'The DAFNEplus programme for sustained type 1 diabetes self-management: Intervention development using the Behaviour Change Wheel'**, *Diabet Med*, 38(5), pp. e14548.
9. Zaitcev, A., Eissa, M. R., Hui, Z., Good, T., Elliott, J. and Benaissa, M. (2020) **'A Deep Neural Network Application for Improved Prediction of HbA1c in Type 1 Diabetes'**, *IEEE J Biomed Health Inform*, 24(10), pp. 2932-2941.

DAFNEPlus Publications



Carb Smart



Type



Amount



Timing



Prep

DAFNE Closed Loop Essentials & Optimisation



Closed Loop Essentials course – written by DAFNE and hosted by the Open University (OU)

Developed to meet essentials skills highlighted by DTN committee

Some text, but to aid health literacy mostly links content between videos on different topics

Focus is on keeping safe, what closed loops can and cannot do, managing pump / sensor failure, ketone management plans

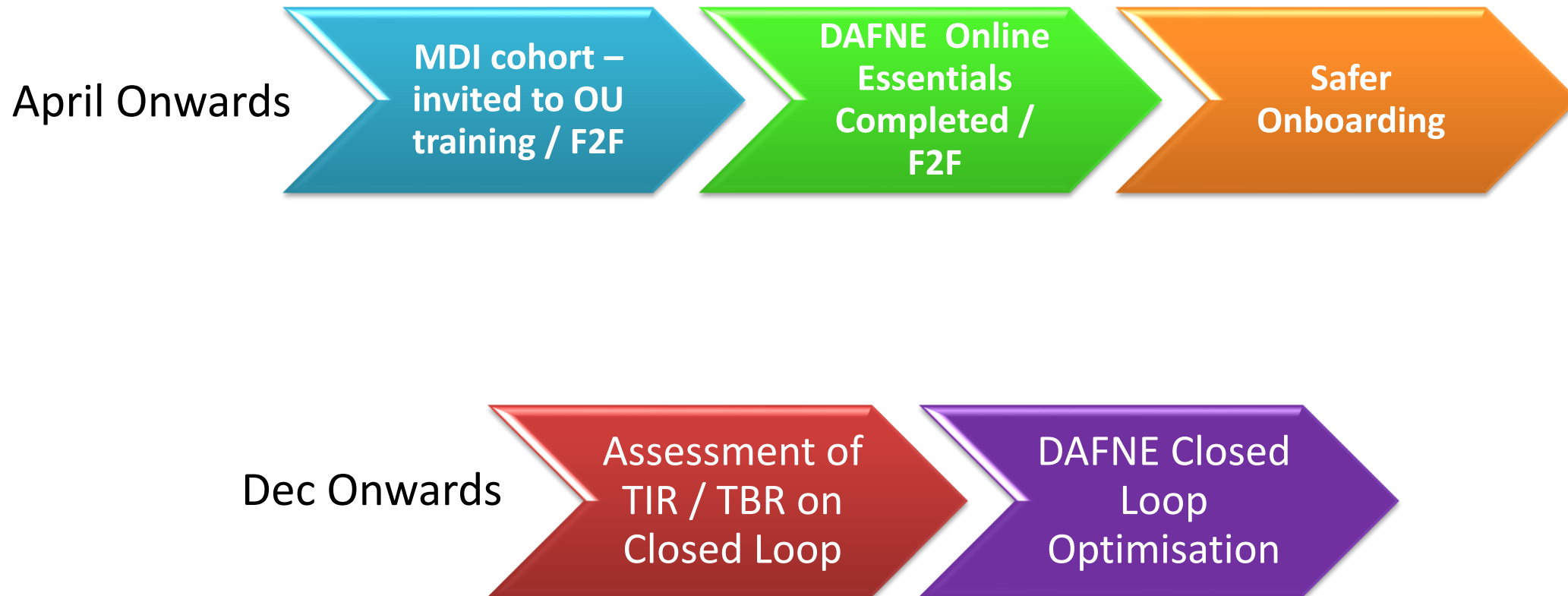
Also, importance of pre-bolusing illustrated, with ideas about how to estimate carb, either visually, using carb factors, or using carb formula.

Additional documents, e.g., check list

End of module quiz, weighted to safety, not carb counting. Certificate issued, for patients to share with HCPs.

Open to all DAFNE centres, and to non-DAFNE centres if industry / DTN funding available

DAFNE Closed Loop Essentials & Optimisation



DAFNE 2020

Face to Face in 80+
UK Centres,
Australia, Kuwait

5x1 course

Pump course

Face to Face training

DAFNE 2000
Face to Face in
3 UK Centres



DAFNE 2024

110 DAFNE centres in UK, for £5000 / y
Free OU refreshers for >60,000 graduates

Remote MDI / pump courses

Free Remote Training for Educators in
DAFNE centres

Free Remote All Doctors In Training

National audit results showing continual
improvement

Webinars on Hot Topics

Regional educator network meetings

DAFNEplus RCT results April

National DAFNE collaborative meeting
10th June 2024, all HCPs welcome

DAFNE Closed Loop Essentials April

DAFNE Closed Loop Optimisation Dec

VICTOR for people with Type 2 Dec

DAFNE 2020

Face to Face in 80+
UK Centres,
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5x1 course

Pump course

Face to Face training



DAFNE 2000
Face to Face in
3 UK Centres

