

# ABCD audits update

Dr Bob Ryder

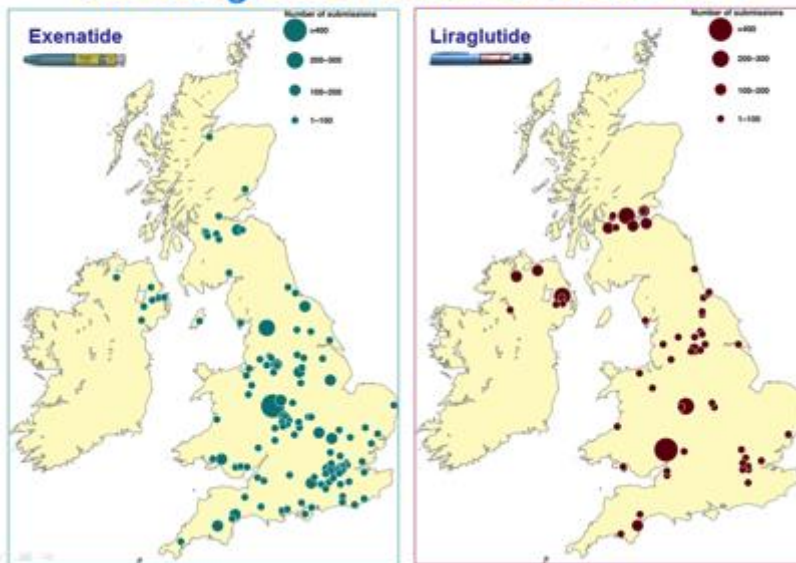
ABCD Conference 2020 - Virtual

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# ABCD nationwide exenatide and liraglutide audits

- Real-life data
  - >13000 patients from
  - >150 centres
  - >500 contributors
- There have been
  - 14 published papers
  - 24 abstracts
  - 13 oral presentations

Nationwide contribution to exenatide and liraglutide national audit 2011



## ABCD nationwide exenatide audit contributors

The following are those whom we know about.

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## Acknowledgment

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#### Acknowledgment

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# Combined trials vs real world

- Real world patients more poorly controlled and heavier than in the clinical trials

	Clinical trials combined	Real clinical use in UK (ABCD audit)
	Baseline HbA <sub>1c</sub> (%)	
Exenatide	8.37	9.47
Liraglutide	8.5	9.40
	Baseline BMI (kg/m <sup>2</sup> )	
Exenatide	32.72	39.8
Liraglutide	31	39.0

# ABCD Spring and Autumn Meeting Presentations – 2018 and Spring Presentation 2019

- Please see those presentations for lots of information about the audit programme and what we have learned etc
- What has happened since?

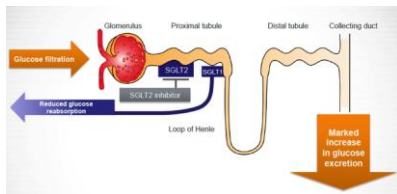


# Liraglutide audit over 10 years since launch

- Two more papers published in British Journal of Diabetes
  - Reductions in alanine aminotransferase levels with liraglutide treatment are greatest in those with raised baseline levels and are independent of weight loss
  - Early impact of liraglutide in routine clinical use on cardiovascular risk

# SGLT2 inhibitors audits

- Presentations at ADA 2020, virtual
  - The Effect of Canagliflozin on Alanine Aminotransferase (ALT) Levels
  - Many Benefits of Empagliflozin Persist in Those with Reduced Renal Function
  - The Effect of Diabetes Duration on Response to Empagliflozin
- Paper in British Journal of Diabetes
  - The effect of dapagliflozin on alanine aminotransferase as a marker of liver inflammation





# ABCD nationwide audit of FreeStyle Libre



- Poster presented at a reception at the Houses of Parliament October 2019
- Teresa May left the crucial Brexit debate to call in briefly at the back - moral support to the cause!

# ABCD nationwide audit of FreeStyle Libre



Original Research

## **Effect of Flash Glucose Monitoring on Glycemic Control, Hypoglycemia, Diabetes-Related Distress, and Resource Utilization in the Association of British Clinical Diabetologists (ABCD) Nationwide Audit**

Harshal Deshmukh, Emma G. Wilmot, Robert Gregory, Dennis Barnes, Parth Narendran, Simon Saunders, Niall Furlong, Shafie Kamaruddin, Rumaisa Banatwalla, Roselle Herring, Anne Kilvert, Jane Patmore, Chris Walton, Robert E.J. Ryder, Thozhukat Sathyapalan

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- July 2020 – first paper from the audit published in Diabetes Care
- As with all our audit publications all audit contributors are listed in the publication

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Chesterfield Royal Hospital NHS Foundation Trust, Chesterfield Royal Hospital: Bills G, Cooper H, Foley C. City Hospitals Sunderland NHS Foundation Trust, Sunderland Royal Hospital: Bishop D, Fenwick L, Hopper N, Lee A, Nayar R., Countess Of Chester Hospital NHS Foundation Trust, Countess Of Chester Hospital: Ahmed SH, Bridges J, Efram I. County Durham And Darlington NHS Foundation Trust, University Hospital Of North Durham: Devlin S, Dobson H, Kamaruddin S. County Durham And Darlington NHS Foundation Trust, Darlington Memorial Hospital: Kamaruddin S, Kirby C. County Durham And Darlington NHS Foundation Trust, Bishop Auckland Hospital: Stelling A. Croydon Health Services NHS Trust, Croydon University Hospital: Chuah L, Lovie K. Derby Teaching Hospitals NHS Foundation Trust, Royal Derby Hospital: Carpenter J, Gerrard K, Hesketh E, Hughes M, Langeland L, Marchant E, Monks K, Morrison A, Owen S, Ruston S, Sellahewa K, Smith J, Stanton P, Taylor A, Taylor N, Taylor R, West S, Wildsmith S, Wilmot E. Doncaster And Bassetlaw Hospitals NHS Foundation Trust, Doncaster Royal Infirmary: Garbutt S. Dorset County Hospital NHS Foundation Trust, Dorset County Hospital: Wotherspoon F. East And North Hertfordshire NHS Trust, Lister Hospital: Thornton M, Troke R. East And North Hertfordshire NHS Trust, Queen Elizabeth II Hospital: Thornton M. East Kent Hospitals University NHS Foundation Trust, William Harvey Hospital: Christian P. East Lancashire Hospitals NHS Trust, Royal Blackburn Hospital: Ramtoola S. East Suffolk and North Essex NHS Foundation Trust, Colchester General Hospital: Cackett N, Jordan N. East Sussex Healthcare NHS Trust, Conquest Hospital: Aung KK, Dashora U. Frimley Health NHS Foundation Trust, Frimley Park Hospital: Bailey N, Henke C, Mukhtar R, Tringham J. Gateshead Health NHS Foundation Trust, Queen Elizabeth Hospital: Tsalidis V, Scott L, Reid J, Pearsall A. Harrogate And District NHS Foundation Trust, Harrogate District Hospital: Hammond P, Rahman S. Hull and East Yorkshire Hospitals NHS Trust, Hull Royal Infirmary: Deshmukh H, Gupta S, Van-Tilburg Rogers R, Sathyapalan T. Isle Of Wight NHS Trust, St Mary's Hospital: Tapus M, Whittingstall L. Lancashire Care NHS Foundation Trust - (Diabetes Specialist Nursing Service), Minerva Health Centre: Kear G. Lancashire Teaching Hospitals NHS Foundation Trust: Royal Preston Hospital: Baxter S, Byrne J, Orme K, Vaidya A. London North West Healthcare NHS Trust, Central Middlesex Hospital: Muralidhara K. Luton And Dunstable Hospital NHS Foundation Trust, Luton & Dunstable Hospital: Wong KF. Maidstone And Tunbridge Wells NHS Trust, The Tunbridge Wells Hospital: Barnes D. Mid Yorkshire Hospitals NHS Trust, Pontefract General Infirmary: Dobson H, Gardiner S, Roberts S. Mid Yorkshire Hospitals NHS Trust, Pinderfields General Hospital: Dobson H, Galliar K, Gardiner S, Jennians S, Jones S, Roberts S, Watson E. Mid Yorkshire Hospitals NHS Trust, Dewsbury & District Hospital: Caine G, Gardiner S, Dobson H, Jones S, Scott K. NHS Bury CCG, St Gabriel's Medical Centre: Deacon R. NHS North East Essex CCG, Bluebell Surgery: Addington H, Chandler H, Holcombe A, Jagger C, khawnekar D, Kingston T, Roberts L, Streeting J, Walsh C. North Bristol NHS Trust, Southmead Hospital: Parfitt V. North Cumbria University Hospitals NHS Trust, West Cumberland Hospital: Green K, Wardyniec C, Whitehead P. North Cumbria University Hospitals NHS Trust, Cumberland Infirmary: Carruthers C, Edge J, Overend L, Whitehead P. North Lincolnshire & Goole NHS Foundation Trust, Scunthorpe General Hospital: Pothina NP. North West Anglia NHS Foundation Trust, Peterborough City Hospital: Yong D. Northamptonshire Diabetes Network, Kettering General Hospital: Kilvert A, Margabanthu G, Smith L. Northamptonshire Diabetes Network, Northampton General Hospital: Haase L, Kilvert A, Nash C, Thomson K. Northumbria Healthcare NHS Foundation Trust, North Tyneside General Hospital: King S, Potter C. Oxford University Hospitals NHS Trust, Churchill Hospital: Panch H, Lumb A, Tan G. Oxford University Hospitals NHS Trust, John Radcliffe Hospital: Cheeseman M, Tan G. Pennine Acute Hospitals NHS Trust, Fairfield Hospital: Rowles S. Pennine Acute Hospitals NHS Trust, Rochdale Infirmary: Prakash P. Pennine Acute Hospitals NHS Trust, North Manchester General Hospital: Baxter R, Wild J. Portsmouth Hospitals NHS Trust, Queen Alexandra Hospital: Cranston I. Royal Cornwall Hospitals NHS Trust, Royal Cornwall Hospital (Treliske): England A, Mallam K. Royal Devon And Exeter NHS Foundation Trust, Royal Devon & Exeter Hospital (Wonford): Walker N. Royal Liverpool And Broadgreen University Hospitals NHS Trust, Royal Liverpool University Hospital: Zaidi R. Royal Surrey County Hospital NHS Foundation Trust, Royal Surrey County Hospital: Hall C, Herring R, O'Dowd C. Royal United Hospital Bath NHS Trust, Royal United Hospital: Robinson A. Salford Royal Foundation Trust, Royal: Mudaliar RN, Paisley A. Salisbury NHS Foundation Trust, Salisbury District Hospital: Anderson C, Lawrence J, Madgwick S. Sandwell and West Birmingham Hospitals NHS trust, Diabetes & Endocrine at City Hospital: Burbridge W, Cull ML, Harris L, Lloyd J, Ryder REJ, Wyres M. South Tees Hospitals NHS Foundation Trust, James Cook University Hospital: Burns M, Murray A. South Warwickshire NHS Foundation Trust, Warwick Hospital: Kakad R. Southern Health NHS Foundation Trust, Fenwick Hospital: Thorne K. Southport And Ormskirk Hospital NHS Trust, Ormskirk & District General Hospital: Khan S, Kirkham J, Ng SM. St Helens and Knowsley Teaching Hospitals NHS Foundation Trust, Whiston Hospital: Peers V. Stockport NHS Foundation Trust, Stepping Hill Hospital: Bell R, Mason-Cave S. Surrey And Sussex Healthcare NHS Trust, East Surrey Hospital: Clark J, Streatfield N. Surrey And Sussex Healthcare NHS Trust, Crawley Hospital: Godwin H. Sussex Community Foundation Trust, Moulsecoomb Health Centre: Lipscomb D, Rezaazadeh E. The Dudley Group NHS Foundation Trust, Russells Hall Hospital: Khan S, Solomon AL, Vamvakopoulos J. The Hillingdon Hospitals NHS Foundation Trust, Hillingdon Hospital: Baburaj R, Narayanaswamy S. The Princess Alexandra Hospital NHS Trust, Princess Alexandra Hospital: Nuti A, Sennik D. The Queen Elizabeth Hospital, King's Lynn, NHS Foundation Trust, The Queen Elizabeth Hospital: Wnuk W. University Hospital Southampton NHS Foundation Trust, Southampton General Hospital: Newland-Jones P. University Hospitals Birmingham NHS Foundation Trust, Heartlands Hospital: Forsdick H, Narendran P. University Hospitals Birmingham NHS Foundation Trust, Good Hope Hospital: Narendran P, Peasgood A, Saraf S, Whitaker E. University Hospitals Birmingham NHS Foundation Trust, Queen Elizabeth Hospital: Grandy L, Morrison J, Narendran P, Ross L. University Hospitals Of Leicester NHS Trust, Leicester General Hospital: Gregory R, Mistry I, Wilson C. University Hospitals Of Leicester NHS Trust, Leicester Royal Infirmary: Sundaram P. University Hospitals Of Morecambe Bay NHS Foundation Trust, Royal Lancaster Infirmary: Begum N-M, Dampetla S, Dring H, Jackson S, Mustafa E, Shanahan T. University Hospitals Of Morecambe Bay NHS Foundation Trust, Furness General Hospital: Dring H, Hay C, Hodson K, Shanahan T. Warrington And Halton Hospitals NHS Foundation Trust, Warrington Hospital: Gopalakrishna A, Saunders S. West Hertfordshire Hospitals NHS Trust, Watford General Hospital: Fullerton S, Mitchell H. West Suffolk NHS Foundation Trust, West Suffolk Hospital: Cockerill H, Harding J, Hunt M. Western Sussex Hospitals NHS Trust, St Richard's Hospital: Cranfield L, Lacey A, Mackie C, Smith Z, Worsfold J. Western Sussex Hospitals NHS Trust, Worthing Hospital: Beacher P, Lacey A, Middleton N. Wirral University Teaching Hospital NHS Foundation Trust, Arrowe Park Hospital: Comber S, Cookson R. Wroughtington, Wigan And Leigh NHS Foundation Trust, Royal Albert Edward Infirmary: Brookes C, Ollerton A. York Teaching Hospital NHS Foundation Trust, Scarborough Hospital: Hemming V.

## Scotland

NHS Lanarkshire, Monklands Hospital NHS Trust: Sandeep T. NHS Lanarkshire, Hairmyres, Stonehouse Hospitals NHS Trust: Littlejohn N. NHS Tayside, Ninewells Hospital: Malik I

## Wales

Abertawe Bro Morgannwg University NHS Trust, Morriston Hospital: Shirikrishnapalasuriya N, Udiawar M. Abertawe Bro Morgannwg University NHS Trust, Neath Port Talbot Hospital: Min T, Peter R

## Acknowledgment

*The ABCD nationwide FreeStyle Libre audit is an independent audit supported by an unrestricted grant from Abbott.*

# ABCD nationwide audit of FreeStyle Libre



- 10,370 FSL users (97% type 1)
- 51% female
- Diabetes duration 16 ( $\pm 49.9$ ) years
- BMI 25.2 ( $\pm 16.5$ )



# ABCD nationwide audit of FreeStyle Libre



- After median 7.5 months follow up
  - HbA1c fell from 67.5( $\pm$ 20.9) to 62.3( $\pm$ 18.5) ( $p < 0.0001$ )
- If HbA1c  $\geq$  69.5
  - HbA1c fell from 85.5( $\pm$ 16.1) to 73.1( $\pm$ 15.8) ( $p < 0.0001$ )
- Gold score (hypoglycaemic unawareness)
  - Fell from 2.7( $\pm$ 1.8) to 2.4( $\pm$ 1.7) ( $p < 0.0001$ )
  - 53% of those with Gold score  $\geq$ 4 at baseline had score  $<$ 4 at follow up
- There as also a significant reduction in diabetes distress ( $p < 0.0001$ ), paramedic callouts and hospital admissions due to hypoglycaemia or hyperglycaemia/DKA

# ABCD nationwide audit of FreeStyle Libre



- Conclusion - the use of FSL was associated with
  - significantly improved glycaemic control
  - hypoglycaemia awareness
  - and a reduction in hospital admissions

# ABCD nationwide audit of FreeStyle Libre



- NB – the audit continues with a mission to get large numbers of patients with 1 year of follow up



# ABCD nationwide semaglutide audit

- First abstract being presented as poster at this meeting
- 1451 patients
- Patients as ever heavier and more poorly controlled than in the clinical trials
- Considerable reductions in weight and HbA1c
- Those switched from other GLP1-RAs demonstrated significant additional reductions in HbA1c and weight after making the switch

# Recently launched ABCD audits

- DIY-Artificial Pancreas Systems audit (DIY-APS)

1

# #wearenotwaiting movement



Above – a cartoon shows a smart phone closing the loop between continuous glucose sensor and insulin pump. Anecdotally the system works – but how well and how often. What are the benefits? What are the problems? Are there any dangers? – the audit could tell us.

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  - If you have any patients who use DIY-APS please join the audit
  - Dr Tom Crabtree will be discussing DIY-APS at and ABCD webinar on 7 January 2021

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  - Dr Tom Crabtree will be discussing DIY-APS at an ABCD webinar on 7 January 2021
- COVID-19 and Diabetes audit
  - Recently launched
  - Already data collected on over 2700 patients from 36 centres admitted to hospital with diabetes who had COVID during this year

# ABCD audits imminently being launched

- Oral semaglutide – once you are able to prescribe it, please submit your patients to this audit of the first oral GLP-1 receptor agonist

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- Testosterone in men with type 2 diabetes
  - **Launching at this meeting**

# TESTOSTERONE DEFICIENCY IN MEN WITH TYPE 2 DIABETES

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- If present should measure testosterone and, if low, repeat with SHBG, LH, FSH

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# TESTOSTERONE DEFICIENCY IN MEN WITH TYPE 2 DIABETES

- High prevalence - 40% of men with type 2 diabetes have symptomatic testosterone deficiency
- Testosterone deficiency is associated with: an adverse effect on cardiovascular risk factors, osteoporosis, reduced muscular strength (including frailty), anaemia and reduced psychological well-being
- Testosterone deficiency is also associated with an increased mortality in type 2 diabetes and independently in cardiovascular disease

# TESTOSTERONE DEFICIENCY IN MEN WITH TYPE 2 DIABETES

- Testosterone replacement has been shown to:
  - Improve insulin resistance
  - Lower HbA1c
  - Lower cholesterol
  - Reduce body weight
  - Reduce mortality
- And the patient feels better!



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# Testosterone in men with type 2 diabetes audit

- Hugh is eminently qualified both to tell us about testosterone therapy in men with type two diabetes and to lead the ABCD nationwide and worldwide audit
- Professor Hugh Jones is Honorary Professor of Andrology in the Department of Human Metabolism the University of Sheffield Medical School,
- and
- Hon. Consultant Endocrinologist at the Royal Hallamshire Hospital, Sheffield.
- He is a clinical and laboratory researcher into the role of testosterone in the pathogenesis and treatment of type 2 diabetes and cardiovascular disease.
- He has also conducted research on the hypothalamic and paracrine control of anterior pituitary hormone secretion, among others.
- He was elected to the European Academy of Andrology and is a co-chair of the testosterone and metabolic disorders group as part of the International Consultation on Men's Health and Infertility.
- He is on Guideline committees for Management of Testosterone Deficiency- European Association of Urology and British Society for Sexual Medicine (BSSM).
- He is President elect for the Androgen Society (which is an International Society)
- Hugh – over to you to tell us about the problem of testosterone deficiency in men with type 2 diabetes and why we need this ABCD nationwide and worldwide audit to inform us more