## East Sussex Medicines Optimisation Project- Type 2 Diabetes Frailty Reviews

## Background

The number of older people with type 2 diabetes and frailty is growing. These patients are at increased risk of adverse effects from blood glucose lowering therapies including hospital admissions. Severe hypoglycaemia is the second commonest cause of hospital admission for drug related adverse events and is associated with an increased risk of CVD events or death, particularly in people with pre-existing CVD.

There are growing concerns that intensive treatment with insulin and sulfonylureas in older people with low HbA1c (<53mmol/mol) increases the risk of hypoglycaemia, morbidity and mortality. Frailty and dementia are risk factors for hypoglycaemia setting a vicious circle. Older people are also less likely to benefit from the long term protective effects of good glycaemic control and are at risk of inappropriate polypharmacy due to co-morbidities.

Concerns over the harms from hypoglycaemic agents in the treatment of type 2 diabetes has led to revised NICE guidance recommending an individualised approach with more relaxed HbA1c targets for older people at high risk of hypoglycaemia utilising shared decision making with patients. NICE guidance advises that HbA1c targets of less than 58 mmol/mol may not be appropriate for people at older ages, those with impaired renal function, co-morbidities, limited life expectancy, interacting medication, previous hypoglycaemia or inability to self-manage treatment. Similar recommendations are supported in European and American guidance.

This project was undertaken to support primary care diabetes teams in working with patients to optimise prescribing through implementation of NICE guidelines to adapt an individualised approach to diabetes care considering the need for relaxed individualised HbA1c targets for older people with frailty balancing the drive for tight glycaemic targets and prevention of harm generating significant savings to the prescribing budget.

Aim

To reduce harm by moving towards an individualised approach for managing type 2 diabetes in older people with frailty. The main objective was to agree individualised HbA1C targets using shared decision making with patients by taking into account factors such as co-morbidities, impaired renal function and life expectancy to reduce the harms associated with problematic polypharmacy, improve patient safety and quality of life for older people living with type 2 diabetes.

## Method

The project was included in our CCG prescribing support scheme which incentivises GP practices to invest time in reducing unwarranted variation in diabetes prescribing. CCG pharmacists reviewed cohorts of patients with frailty within all our GP practices through running locally developed searches on the prescribing systems. Practices were then required to meet with a senior CCG pharmacist to discuss the patient level diabetes medication reviews and agree action plans to individualise diabetes care in older people.

Key stakeholders were consulted during the project development and updated regularly. Our diabetes formulary was refreshed and clinical guidelines and pathways for blood glucose management in Type 2 diabetes were developed with individualising targets and treatment at the heart. Opportunities to educate clinicians on diabetes medicines optimisation and share details of our project were utilised during GP engagement and community pharmacy events. Inspirational clinical speakers delivered key note sessions at GP education events.

Training was provided by the Effective Diabetes Education (EDEN) group for pharmacists undertaking reviews. Key resources including searches and an EMIS template were developed to standardise data collection. Searches were built to identify frail patients over 65 years old with low HbA1c prescribed blood glucose lowering agents.

Pharmacists conducted notes based reviews and arranged MDT meetings with key clinicians to discuss medication optimisation recommendations and share key messages. The project focused on diabetes medication optimisation; however, other polypharmacy issues identified during the reviews were also discussed. Action plans were agreed to ensure key messages became embedded into normal practice and practices obtained feedback quarterly via the prescribing dashboard. Implementation of agreed actions was assessed by audit at year end.

## Results

All practices took part in the project and worked collaboratively to reduce polypharmacy and the harms associated with aiming for tight HbA1c targets in people with type 2 diabetes and frailty. Meetings took place with 43 GPs and in most cases, practice nurses and pharmacists also attended.

Over 400 patient records were reviewed by the MM pharmacists. Many practices chose to review more patients once the level of risk had become apparent.

93% (n=436) of recommendations made by the MM pharmacists to de-escalate treatment were accepted. As a result of our CCG MM pharmacist led reviews, 55% (n= 238) of patients had a blood glucose lowering agent stopped. 45% (n=198) of patients had a medication change whereby the blood glucose lowering agent was continued, but at a lowered dose. Inappropriate prescribing due to polypharmacy, drug interactions, co-morbidities, renal impairment, lack of evidence and/or not meeting NICE targets to continue were the main reasons for therapy changes.

The chart below shows a breakdown of the agents stopped/reduced as a result of MM led reviews. Approximately 20% (n=79) of recommendations were owing to renal function decline where blood glucose lowering therapies should have been reduced/stopped in line with manufacture recommendations.

\*Note- some patients had more than one intervention per patient

541 medication optimisation recommendations not relating to blood glucose management were also made.

Of the elderly patients reviewed, 60% (n=204) were found to have a recent HbA1c of ≤48mmol/mol, of which 19% (n=66) had an HbA1c ≤ 42mmol/mol. All these patients were receiving blood glucose lowering therapies. Where HbA1c was deemed unreliable for example due to severe CKD, these reading were excluded. The graph below details the breakdown of patients according to HbA1c categories.

Throughout the project, MM pharmacists delivered a number of education and training sessions, both at practice and CCG level. Key events included CCG diabetes locally commissioned service update meetings, healthy living pharmacy events and a local Royal Pharmaceutical Society (RPS) evening event. The table below outlines the quantitative feedback from these focused events.

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| --- | --- | --- | --- | --- |
| **Event** | **Excellent** | **Good** | **Average** | **Poor** |
| GP Practices LCS update. Feedback given by 22 GPs, 28 Practice Nurses and 4 other HCPs | 31 | 22 | 1 | 0 |
| GP Practices LCS update. Feedback given by 17 GPs, 21 Practice Nurses and 6 other HCPs | 12 | 27 | 6 | 0 |
| GP Practices LCS update. Feedback given by 25 GPs, 31 Practice Nurses and 7 other HCPs | 18 | 39 | 5 | 0 |
| RPS Sussex event. Feedback given by 18 Pharmacy Professionals | 13 | 5 | 0 | 0 |

Delegates were also asked to comment on how they would apply their learning to improve practice. A sample of the qualitative feedback received is shown below.



Our CCG diabetes lead GP, Dr Binodh Chanthanath commented: *“This is a brilliant quality improvement project that has conveyed the significance of individualised care in diabetes and probably taken it to the next level. The work has enlightened healthcare professionals, to be mindful of the risk of hypoglycaemia, when medications are prescribed or reviewed when managing older people with diabetes. We have now modified our annual care planning by incorporating a section to promote a partnership approach in medicine optimisation, which should facilitate a safe and individually tailored care”.*

The main objective of this project was to reduce harms from medications and improve quality of life for older people living with type 2 diabetes; however, the project did generate financial savings of £75K across both CCGs. This figure does not include where practices continued to review patients beyond the requirements for the scheme nor the financial benefits to the health economy of preventing a hospital admission for hypoglycaemia which is £3K per patient per year. Therefore, the actual savings are likely to be higher than those recorded by the CCG team.

## Discussion

During the initial stages of project development, some diabetes leads did not feel the overtreatment of type 2 diabetes in older people was a problem locally owing to individualising targets being part of their routine practice. Case presentation of severely frail patients with low HbA1c’s treated with insulin and/or SUs found within our CCG helped justify the need for this project.

At practice level, we faced challenges from practice managers and some GP colleagues regarding the possible negative effect of this project on QOF targets. Here, it was evident that an individualised approach to diabetes care had not been adopted resulting in therapy remaining unchanged or being escalated to meet QOF targets for patients with frailty and comorbidities. Many of the HbA1c identified were very low which was concerning. This also indicated that a significant increase in HbA1c would be required to affect QOF. Towards the end of the project, the proposed changes to QOF taking into frailty were released which supported our project.

For some patients, we found that frailty scores recorded on the clinical system did not accurately represent the patient. Through reviewing individual patient notes and MDT discussions, we were able to ascertain whether the recorded frailty score was true for each patient before discussing individualised targets.

We also identified challenges regarding responsibility for medication review within practices. Some nurse colleagues undertaking type 2 diabetic annual reviews reported that they did not feel supported in making therapy changes. Other barriers such as capacity and capability were also identified.

The project was not without challenges; in some practices it was possible to observe difference in behaviour between individual clinicians, appearing to reflect the individual clinician’s attitudes and beliefs therefore the practice action plan had to be flexible enough to capture different clinicians prescribing practice.

Throughout the project, we identified many cases of inappropriate polypharmacy where blood glucose lowering therapies and blood pressure therapies had been escalated for patients older than 70 years with frailty and multiple co-morbidities. In some cases, there was documentation to suggest symptoms of hypoglycaemia; however, therapy remained the same.

In addition, we also identified many cases where blood glucose lowering therapies should have been reduced or stopped owing to renal impairment. There was an apparent lack of awareness of guidance in relation to both initiation and monitoring of these agents. We used this opportunity to develop local guidance which we shared with clinicians during the meetings and used as education tools.

## Conclusion and Next steps

Through undertaking holistic polypharmacy reviews, there was the opportunity to review inappropriate prescribing and rationalise therapy. This reduced the potential for harm from inappropriate polypharmacy, improved patient safety and providing financial benefits to the health economy, (e.g. preventing an admission to hospital owing to hypoglycaemia) and the prescribing budget.

Overall, the key messages of the project were well received. There was a clear focus on improving quality of prescribing which clinicians valued. Feedback was very positive with clinicians commenting that they valued the opportunity to consider medicines optimisation more holistically.

We will continue share the legacy messages of this project and work with clinicians to improve diabetes medicines optimisation through encouraging clinicians to champion an individualised approached to diabetes care taking into account factors such as frailty and co-morbidities.

In developing this project, we produced local guidance on setting HbA1c targets which clinicians have reported they really value and now use routinely in their practice. These resources are available on our formulary website (available [here](http://www.eastsussexformulary.co.uk/therapeutic-sections/6-endocrine-system/61-drugs-used-in-diabetes/)).

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