Merseyside Adult Impaired Glucose Regulation Guidelines

Launch Event- 14th November 2013
The Diabetes Network

David McKinlay

Quality Improvement
Lead- Diabetes
A network approach

“Clinical networks are an NHS success story. Combining the experience of clinicians, the input of patients and the organisational vision of NHS staff they have supported and improved the way we deliver care to patients in distinct areas, delivering true integration across primary, secondary and often tertiary care”

Why?
• To meet the challenges faced
• Improve care and outcomes
• Reduce variation
• Promote equity and access

How?
• Multi stakeholder partnership- people with diabetes, primary/secondary/community care, public health, commissioners local authority, third sector
• Forum for partnership working
• Shared vision
• Evidence into action
• Expert consensus
Merseyside Diabetes Network

• Achievements
  • Hypoglycaemic pathway, insulin pump specification, referral criteria, CGM pilot in pregnancy, audits- DKA, hypoglycaemia, footcare e-learning..... IGR!

• Structure
  • Diabetes board
  • Merseyside diabetes patient action group
  • GP and commissioning leads
  • Task and finish groups
Strategic Clinical Networks

April 2013- Non-statutory, 5 year mandate

12 Networks across the country each focusing on:
- Mental Health, dementia, and neurological conditions
- Maternity and children
- Cancer
- Cardiovascular disease (Diabetes, Stroke, Cardiac, Renal)

- National clinical leads, local clinical leadership
- Large scale strategic change, consistent approach, spread innovation
- Overarching expectations from NHS outcomes framework
- Forum for improvement across the system
Next steps........

- Current work plan
- Transition/ development
- Prioritisation locally and nationally

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Achievements to date
Impaired Glucose Regulation the journey

Ruth du Plessis
November 2013
Background

• 2010 – Diabetes QIPP board provided the mandate

• Key stakeholders:
  - Patient Representatives Group
  - Public Health
  - Primary Care

- Key evidence supported the case for prevention:
  - Diabetes NSF Standards 1 and 2 (2001)
  - NHS Health Checks programme (2009)
  - Diabetes Prevention in Liverpool – the way forward (2010)
Rationale

• Diabetes prevalence increasing

• Strong evidence for the high risk approach
  – Possible to identify, and take action to change risk factors
  – Early intervention can prevent, delay or reverse the onset of diabetes
  – Evidence of clinical and cost effectiveness for lifestyle interventions
QOF disease registers
Southport & Formby CCG 2008 to 2012

Coronary Heart Disease
Diabetes Mellitus
Heart Failure
Atrial Fibrillation
Chronic Kidney Disease Prevalence
Evidence Base

• American and European Guidelines on effective interventions for IGR

• Weight ↓ 3.7–6.8 kg in overweight aged 30 – 50 = ↓ 33% risk of diabetes [Moore et al 2000]

• Modest lifestyle changes can significantly postpone onset of diabetes in high risk individuals [Finnish Diabetes Prevention Study, 2001; US Diabetes Prevention Program, 2002]

• Lifestyle intervention = more effective than Metformin in reducing incidence of diabetes [US Diabetes Prevention Program, 2002]
Milestones - 1

• North Mersey Diabetes QIPP Board - June 2010
• Steering group commenced - November 2010
• *GP practice survey – January 2011
• *Clinical Audit – September 2011
• Clinical Pathway – May 2012
• National read codes secured – October 2012
• Completed business case to 6 CCGs – November 2012

* to be discussed in more detail
Milestones - 2

• Insight work completed - January 2013
• Report to Directors of Public Health – January 2013
• Lifestyle Service Specifications amended – March 2013
• Clinical Guidelines agreed – October 2013
• Evidence review of interventions - October 2013
• Patient leaflet and goal planner – November 2013
• Lifestyle staff training – December 2013/Jan 2014
Activities - Survey

• GP Practice Survey (February 2011) in Sefton, Knowsley and Liverpool, online questionnaire

• Key Issues Identified by Practices
  – Guidance on standardised approach for this cohort required
  – Strategies for non-compliant patients
  – Improved access to lifestyle services
  – Capacity in lifestyle services
  – Patient education
Activities – Clinical Audit

- Standardised audit tool and searches
- Compatible with GP clinical systems within Merseyside
- 63% of practices consented (148 practices)
- Over 600,000 patient records included
- Data on patients with IGR (IFG, IGT) and or history of Gestational Diabetes (GD)
- Data cleansed and analysed by Public Health Intelligence
Activities -
Clinical Audit Results

The audit was undertaken prior to the publication of NICE guidelines (PH38)

- Mean recorded prevalence of IGR **0.82%**
- Range **0.00% – 4.6%**
- Of 908 patients with IGR following a FPG in 2009:
  - The majority had not had a annual blood test
- Of 802 patients history of Gestational Diabetes
  - The majority had not had a annual blood test
- **82%** of patients with IGR overweight or obese
- There were very few documented referral to lifestyle services
Insight work

- Interviews and focus groups across Merseyside
- 65 people aged 40 and over, who were overweight or obese; included BME groups, eight people with IGR
- Healthy foundation segmentation, almost half were identified as ‘unconfident fatalists’ (UFs) and a third were ‘live for todays’ (LfTs)
- Primary care has a pivotal role
- Would not attend ‘education’, wanted ongoing support to for lifestyle change
Insight work

• Effective interventions
  – offer of support every step of the way, take small steps,
  – provide assistance with willpower, coping strategies and practical support.
  – Tackle mental health issues to foster a positive outlook.

• Considerable monitoring of progress and ongoing mentoring is important
Insight work - communication

• Three of 60 people had heard of the term pre-diabetes.

• The word ‘pre’ was found to be difficult to understand and suggested “pre-diabetes says you are going to get it anyway, it’s just the lead up to it”.

• The preferred term suggested by the interviewees and then further tested was ‘borderline diabetes’.
  – This term felt to be the most appropriate and understandable
  – Seen as more positive suggesting there is a chance of preventing the onset of diabetes
A number of definitions were also tested. The preferred definition was:

“Borderline diabetes, called Impaired Glucose Regulation (IGR) by health professionals, is serious because it significantly increases your risk of getting Type 2 diabetes. It can also double your chances of suffering from heart disease or stroke.”

Being told they have borderline diabetes (IGR) is a motivator to make lifestyle changes.
Insight Work - pathway

• The pathway itself was well-received, although it needs to be applied flexibly
• The target audience very much wanted health professionals/workers to listen and understand their personal barriers
• Primary care has a pivotal role to play in encouraging people to attend lifestyle services and IGR specific follow-up
### Insight Work-pathway

<table>
<thead>
<tr>
<th>What was wanted</th>
<th>The pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I don’t know where to start.” i.e. give me a starting point</td>
<td>First explanation and discussion of borderline diabetes (primary care)</td>
</tr>
<tr>
<td>“I need guidance”</td>
<td>Follow-up session giving information about how to look after borderline diabetes (delivered by lifestyles / health trainers)</td>
</tr>
<tr>
<td>“I know it’s down to me, but I need support.”</td>
<td>Lifestyle services to help live a healthier life and control your pre-diabetes</td>
</tr>
<tr>
<td>“Look after me”</td>
<td>Checking on your borderline every year (primary care)</td>
</tr>
</tbody>
</table>
Insight work-Initial diagnosis

• All are keen to make the most of this one-to-one session and would like:
  – A health professional with a good understanding of IGR
  – Answers – why have I got this, what will happen to me, what can I do about it, what help is available ...
  – Information to take away – leaflet/online
  – Positive, friendly in tone
  – No time limit – have as much time to talk as they need
Health trainer/Lifestyle Advisor

- Initial appointment
- Personal care plan
- Weight management programme
- Lifestyle services

First contact to be made as quickly as possible (1-2 weeks) with goal planner to bridge gap.

Option of completing one-to-one with health trainer/lifestyle advisor or in a group education session.

Health trainer/lifestyle advisor available to provide telephone support / motivation / suggest alternative services if initial recommendations not working.
Insight work – annual review

• The support of their GP practice is important, expectations:
  – The target audience were now aware that they are at risk of developing diabetes and should therefore be monitored regularly
  – Subsequent contacts should follow the same format as the initial meeting, i.e. positive and friendly in tone and no time limit
  – Important to discuss progress (focusing on lifestyle change) – any improvement from initial diagnosis?
Public Health Leads

• Knowsley
  – Sarah.McNulty@knowsley.gov.uk (overall project lead)
  – Jane.Briers@knowsley.gov.uk (education lead)
• Liverpool
  – Annette.James@liverpool.gov.uk (supported the insight work)
  – Emma.Page@liverpool.gov.uk (insight team)
• Halton
  – joanne.sutton@halton.gov.uk (supported the tender for staff training)
• St Helens
  – HelenJWilliams@sthelens.gov.uk
• Sefton
  – ruth.duplessis@sefton.gov.uk (operational lead) and Val Sheard
    val.sheard@sefton.gov.uk
IGR Pathway
Overview and Implications for General Practice

Dr. Mike Merriman
Knowsley CCG
The Diabetes Burden

• People with diabetes
  – Morbidity and Mortality
  – Personal Financial Loss
  – Effect of family

• Health and Social Care Economy
  – Health Care Provision
  – Drug Costs
  – Social Care Costs
We can prevent/delay type 2 diabetes

- Finnish Diabetes Prevention Study and the American Diabetes Prevention Programme reported in 1990s
- Both showed that lifestyle measures and weight loss can delay/prevent diabetes in a significant number of people at high risk of diabetes.
- **Number Needed To Treat 5-6.9**
Business Case

- Invest to save.
- Public Health and Merseyside Diabetes Network produced a business case based on NICE financial modelling.
- These estimate a net cost avoidance over 8 years.
Why haven’t we done this before???

• Pre diabetes was diagnosed by Oral glucose tolerance test.
  – Expensive
  – Cumbersome
  – Required fasting
  – Poor reproducibility

• Not feasible
HbA1c can now be used as a diagnostic test

- WHO define the criteria by which HbA1c can be used to diagnose diabetes 2011.

- NICE published guidelines on the use of HbA1c in the detection of pre diabetes/Impaired Glucose Regulation 2012.
Why HbA1c: It’s a good test!!

- It is more reliable than plasma blood glucose measurements No fasting is required
- Screening is not limited to the morning
- Superior predictor of cardiovascular disease.
- It gives a rapid result
- It avoids the reliance on the cumbersome Oral Glucose Tolerance Test
HbA1c Range

• HbA1c 48mmol/mol and above is diagnostic of diabetes mellitus (two tests)
• HbA1c predicts risk for developing diabetes as a continuum.
• IGR/Pre diabetes is defined by NICE as 42-47mmol/mol (one test)
• Arbitrary decision by based on affordability of numbers to be screened and managed
Risk of HbA1c Testing

- A patient with type 1 diabetes may be missed
- This will have potentially serious consequences
Don’t Use HbA1c in:

- Children
- Patients with symptoms of type 1 diabetes
- Patients who are acutely unwell
- Patients on corticosteroids or antipsychotics
- Patients with pancreatitis or have had pancreatic surgery
- Pregnancy
HbA1c may be affected by:

- Haemaglobinopathies
- Pregnancy
- Medication
  - Antiretrovirals, ribavirin, dapsone
- Alcoholism
- Renal failure
- Other see detailed guideline
Expected Numbers

- Accurate estimations are difficult
- Current known prevalence
  - CCG prevalence 0.5% to 1.6%
  - Highest practice prevalence 4.6%
- Estimated numbers 2.3% of population
- Less than diabetes prevalence
- Many of the patients will already be on a disease register and receiving a recall
The Pathway for Practices

• Identifying high risk patients
• HbA1c testing
• IGR identification, read coding and register development
• IGR explanation to patients
• Cardiovascular Risk Assessment
• Lifestyle Interventions
• Call and recall system
High Risk Identification

- NHS Health Check
- Practice Searches
- Opportunistic case finding
High Risk Identification
NHS Health Check

• Practice will need a system of assessment of patients who have an initial CVD risk estimation of 20%
• HbaA1c should replace the current fasting glucose measurements
High Risk Identification
Practice Searches and structured recalls

- Change existing registers i.e. Impaired fasting glucose and/or impaired glucose tolerance to IGR.
- Practices may wish to search specifically for high risk patients discussed below.
- Replace all screening fasting blood glucose measurements with HbA1c testing. Eg Hypertension, Cardiovascular Disease
High Risk Identification-Opportunistic testing/Criteria for Searches

- BMI >28 (or >24.5 in South Asians)
- Stage one hypertension
- Waist Circumference Men>88cm, Women >104
- Family History of Type 2 Diabetes in 1st degree relative
- History of Gestational Diabetes
**Pathway Flow Chart**

**NHS Health Checks (40 – 74 years)**

- Opportunistic
- Identification of High Risk Patients (Box 1)
- GP Clinical System Searches

**HbA1c**

- **HbA1c* <42mmol/mol**
  - History of gestational diabetes
  - No history of gestational diabetes

- **HbA1c* 42-47mmol/mol**
  - Normo-glycaemia
  - Healthy Lifestyle Advice

- **HbA1c* ≥48mmol/mol (no symptoms)**
  - IGR
  - Register of IGR and history of gestational diabetes
  - Clinical/lifestyle review (Box 2)
  - Self-care (Box 3)

- **HbA1c* ≥48mmol/mol (with symptoms)**
  - Diabetes Mellitus
  - North Mersey Diabetes Pathway
  - Lifestyle Referral (Box 4)

*FPG and OGTT should be used with patients for whom HbA1c is not appropriate*
Initial Review Flow Chart

**Diagnosed with Impaired Glucose Regulation (as per pathway)**

**Practice Nurse Appointment:** Advise pt of pre diabetes, significance of diagnosis, and aims of intervention (i.e. prevention of type 2 diabetes & reduction in CVD risk)

**Carry out screening/baseline tests:**
- Blood pressure, Fasting lipids, urinalysis*, LFT*, Urine dipstick

**Blood pressure (Refer to current NICE guidance Hypertension: Clinical management of primary hypertension in adults CG127)**

**Cardiovascular risk Assessment (Refer to current NICE guidance (currently being updated): Lipid Modification: Cardiovascular risk assessment and the modification of lipids for primary and secondary prevention of cardiovascular disease CG.)**

**Place on IGR register and arrange annual recall with Practice Nurse or Health Care Assistant**

*Pt. may require Statin/BP meds therefore obtain baseline U/E/LFT at this stage to minimise the no. of times pt. needs to attend for blood tests

**Refer to Lifestyle team for Specific IGR Education Program***

**Basic Lifestyle Advice:**
- Smoking
- Alcohol
- Exercise
- Diet
- BMI
- Issue standard leaflet ‘Borderline diabetes’
- See guidance re ‘Use of Metformin’ (section 8 )

Merseyside Diabetes Network
Condition Explanation and Coding

• Practice Nursing Team
  – Advise pt of IGR/pre-diabetes
  – Significance of diagnosis
  – Aims of intervention

• Education and Training

• Read Code IGR- C11y4
Clinical Assessment

- CVD risk assessment
  - BP, BMI, Waist Circumference
  - eGFR, creatinine, lipids, LFT, (HbA1c)
- Lifestyle Advice
  - Diet, Alcohol (Audit-C), Smoking, Physical Activity (GPPAQ)
- Pharmacological Review
- Preconception Counselling
- Annual Recall
Lifestyle Interventions

• Brief Interventions
• Referral for structure lifestyle advice local health trainers
• Practices will need to have forms and referral processes
Practice IGR Register

• IGR Code C11y4
• Call and Re-Call system
• Clinical Reviews
Conclusion

• We have a clear pathway for managing people with an increased risk of developing diabetes.
• General practice has the skills to implement the pathway
• If successful we can reduce the projected burden of diabetes across Merseyside
Interventions: evidence base and lifestyle advice

Helen Armitage
Public Health Specialty Registrar, Knowsley Council

Karen Hill
Clinical Lead – Nutrition and Dietetics, Liverpool Community Health
Overview

• The evidence base
  – NICE guidelines
  – Other research
  – Goals and recommendations

• Translating evidence into lifestyle advice
  – Local context
  – Resources
  – Practical interpretation
Evidence review - aims

• To evaluate the process and evidence-base underpinning NICE 2012 recommendations
• To review evidence from translational/pragmatic studies
• To inform development of the education package specification for health trainers
• To ensure recommendations for the Merseyside IGR intervention are evidence-based, nutritionally sound and workable
NICE (2012)

PH38 Preventing type 2 diabetes: risk identification and interventions for individuals at high risk

• Based on a systematic review and meta-analysis of RCTs up to 2011 (n=14)
  – 72% were of high quality methodologically

• Mostly multi-lifestyle interventions (weight, diet, physical activity, behaviour change)

• Intense: expert staff, 1:1, ++contact time, motivated participants

• Active phase: 2-6 years
  – Eg DPP, 2002, (n=3234); DPS, 2003, (n=522)
Primary outcome: progression from IGR to DM2

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Effect estimate (HR) at Mean weight change in intervention group (kg)</th>
<th>% achieving 7% weight loss at</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall (n=14)</td>
<td>0.51 (0.43-0.62)</td>
<td></td>
</tr>
<tr>
<td>Diet and exercise (n=9)</td>
<td>0.47 (0.37-0.59)</td>
<td>-5.16 to +0.16 over 2-5 years follow-up DPP: 50% met target at 6mths</td>
</tr>
<tr>
<td>Exercise (n=1)</td>
<td>0.53 (0.34-0.83)</td>
<td></td>
</tr>
<tr>
<td>Diet (n=3)</td>
<td>0.67 (0.49-0.92)</td>
<td></td>
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- NNT 6.4 (vs 10.8 for OHAs) for multi-component trials (Psaltopoulou et al, 2010)
- More recent meta-analyses emphasise diminishing risk reduction over time (genes + reduced adherence)
Translational studies

- NICE also analysed 15 translational studies; 20% high quality
- Three other more recent reviews were identified
- Characteristics:
  - Almost all DPP/DPS based
  - Shorter intervention: mean length 32 weeks; median number contacts: 6 (range:3-54); often group format, use of lay educators
  - None from UK
Real-world outcomes

• Primary outcome weight loss
• At 12 mths mean weight loss -1.8kg (range: -0.4-6.2kg) and 25-45% have achieved 5% weight loss goal (Johnson et al, 2013)
• Roughly half as effective as the original DPP/DPS trials at 3 years (-1.0-3.3kg)
• Very variable results, depends on population, resources, staff skills and knowledge...
• We can add to this research
Other considerations

• Some evidence for additional benefits of lower glycaemic index and modestly increased protein diets (~25%) in IGR interventions → satiety and improved glycaemic control, e.g. DIOgenes trial

• Trial evidence for weight-independent effect of exercise alone e.g. PREPARE trial, pedometer-enhanced

• Australian IGR guidance highlights roles for ‘pottering’, resistance training and building in frequent activity
Translating evidence into individualised lifestyle advice

• Local context
  – Multi-faceted
  – Sustainable, culturally and socially acceptable
  – Achievable on a budget (in Merseyside boroughs 30-60% of people are in the most deprived 20% of the population nationally)
  – Family-friendly
  – Can be tailored to meet needs of different ethnic groups; men and women
Final evidence-based intervention

• **Staff** who can communicate risk appropriately and understand what works and why

• Includes **behaviour change** and **self-monitoring techniques**

• **Individualised goal-setting**
  – Weight loss (~5%), *not* ‘healthy weight’ BMI as per NICE
  – Improved dietary choices
  – Physical activity
Dietary modification

• **Reduce** fat, saturated fat, added sugars
• **Increase** whole-grains, vegetables and pulses
• **Limit** energy-dense drinks: fruit juice, alcohol, pop
• **Low GI** can be encouraged
• **Aim for low fat protein** at every meal to reduce glycaemic load and enhance satiety
• Very low carbohydrate or high protein or <20% fat or <1200kcal diet cannot currently be recommended for this first line health-trainer led intervention
Physical activity

• Staged goals. Build up to 150-200 mins of moderate activity; can include 60mins resistance
• Reduce sedentary behaviour
• Emphasise distinct benefits, habit-building, frequency and self-monitoring
Practical advice to give to IGR patients

• Insight work was carried out with a group of 65 people who had risk factors for Diabetes; their recommendations were:
  – A leaflet given out by primary care to include a goal plan and some top tips
  – That we used a ‘traffic light’ system for foods to eat more of, less of and to avoid
  – Advice was based on the Eatwell plate
Green foods to eat more of

• To help you get the right balance of the five main food groups, take a look at the ‘eatwell plate’

• Aim to eat 5 portions of fruit and vegetables every day

• Select cereal products that are higher in fibre, wholemeal or wholegrain

• Have a portion of lean protein at every meal, e.g. chicken or turkey without the skin, fresh or tinned fish, low fat dairy products, beans or lentils, 1-2 eggs

• Water – drink 6-8 glasses a day
The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.
Amber foods to choose sparingly

- **Oils and spreads** – use small amounts and choose those based on olive oil, sunflower oil, rapeseed oil or soya rather than butter or lard
- **Dairy** – choose skimmed or semi-skimmed milk and low fat yoghurts and cheese
- **Meat** – remove any visible fat and cook by grilling or baking instead of frying
- **Salt** - try not adding any salt at the table, and gradually use less in cooking.
- **Alcohol** – most alcoholic drinks are high in sugar and calories, but low in healthy vitamins and minerals. Try not to drink more than a small (125ml) glass of wine, or one pint of lager or bitter per day and remember to have 2 alcohol free days every week.
- Limit **fruit juices** to one small glass per day
Red Foods to eat less of

• **Processed meat** such as sausages, burgers and pies

• **Fast food** such as crisps, cakes, biscuits and sweets

• **Takeaways**, including fish and chips or pastries/pies which are high in saturated fat

• **Sugary drinks** – choose sugar-free, no-added-sugar or diet soft drinks and squashes and use sweeteners in hot drinks
Physical activity advice

• Aim for at least 30 minutes of moderate physical activity 5 times a week
• Any activity will improve your health, wellbeing and motivation, so JUST MOVE! Try to be active in bouts of a few minutes and build it up. Take every opportunity to be more active and to limit the amount of time spent sitting down. Tips for being active:
  • Start off slowly and build it up – set yourself realistic goals
  • Try keeping a physical activity diary and introduce different activities to avoid boredom – using a pedometer to count how many steps you take each day can really help you achieve your exercise goals
  • Find an activity you ENJOY and you will be more likely to stick to it
  • Exercise doesn’t need to be sports-based! You can build physical activity into your everyday routine such as walking or cycling to work or the shops; housework and gardening count too. Why not get off the bus a stop earlier or park your car further away?
  • The best health benefits come from being more active day-to-day
  • Doing some activities with a friend or the whole family may help to keep you motivated
The personal health plan

My HbA1c / blood sugar is:
My weight now is:
My waist circumference is:
My goal is:

What am I going to do now/this week?
   1.
   2.
   3.

How will I keep a note of my progress?
Smoking

• Refer to smoking cessation when ready
  – risk for DM2 (cigarette toxins/free radicals/
   /indirect lipotoxic effect?)

• Exercise benefits too
Metformin use in Impaired Glucose Regulation

Interpretation of HbA1c results
Metformin - Advantages

• Shown to be effective in IGR although effectiveness half that achieved with lifestyle modification (31% vs. 58%)
• Greater benefit in younger and obese individuals
• Inexpensive drug
• Safe; virtually no long term side-effects and low prevalence (5-10%) of modest s/effects such as nausea & GI disturbance
Metformin - Advantages

• May be the only option for adults at high risk who are unable to participate in lifestyle change programmes because of disability or other medical reasons
Metformin - Disadvantages

• Less effective than lifestyle changes
• Less cost-effective than lifestyle changes
• In common with other pharmacotherapy does not have a specific licence for management of IGR in the UK (although is included in NICE guidance)
• Need to check & monitor renal function twice yearly
Metformin - Disadvantages

• How do we know if a patient has gone on to develop diabetes if the HbA1c is stable? (i.e. onset of diabetes “masked”)

• In this case a patient who has in reality moved to Type 2 diabetes would be missing out on the usual screening and advice ordinarily offered to patients with diabetes; such as foot assessments and diabetic retinopathy screening (with medico-legal consequences)
Metformin - Disadvantages

• Practically this would mean stopping Metformin for 2 months & retesting HbA1c
Recommendations

• Weight reduction and increased activity offer the most secure route to reduce the incidence of Type 2 diabetes in IGR patients

• Metformin may be used in high risk individuals if
  1. HbA1c results suggest they are still progressing towards Type 2 diabetes despite intensive lifestyle change, or
  2. They are unable to participate because of disability or medical condition
Recommendations

• Discuss with such patients the potential benefits and limitations of taking metformin
• Advise them metformin treatment may need to be life-long and inform them about possible side-effects
• Continue to offer diet & activity support
• Check renal function initially then twice yearly
Recommendations

• Start with low dose (eg 500mg daily increasing up to 2000mg daily) Consider modified-release metformin if intolerant

• Prescribe for 6-12months initially. Monitor HbA1c 3-monthly

• Stop the drug if no effect seen

• Consider stopping for 2 months periodically to check if patient has developed diabetes
HbA1c Reporting

• Pathology laboratories are reporting HbA1c results with reference ranges based on the use of the test purely for diabetes monitoring

• E.g. Warrington path lab;
  Good control 42 to 53mmol/mol (shown in black type or not highlighted in some way)

• As diagnostic range this covers all the IGR range and the lower diabetes range
Current Reporting

“Good diabetes control”

Poor control
The Pathway

“Good diabetes control”

Normal  IGR  Diabetes

Poor control
Preferred reporting

Normal

42

47 48

53

Abnormal
Interpreting HbA1c results

- Using HbA1c as a diagnostic test is therefore quite different from using it as a diabetes monitoring tool.
- Care needs to be taken when looking at the results as it may not be clear why the test was requested.
- An audit in my Practice showed that IGR could be missed because the way the lab results are currently displayed does not highlight IGR (or indeed the lower diabetes range).
Interpreting HbA1c results

• The Diabetes Network has requested that all the labs in the network area report HbA1c results in the recommended format
Clinicians must then evaluate:
IGR/Diabetes diagnosis?
Well-controlled diabetes?
Interpreting HbA1c results

- All members of Practice teams who look are responsible for interpreting results need to be aware and implementation of the Pathway needs to be well-managed within the Practice