Diabetes: QI and medicines optimisation in primary care

Andrew Askey
Outline

• 8 Care processes for diabetes
  – Local improvement scheme
    • ACR screening
    • 8 care processes
    • Cholesterol <4mmol/l

• Making a difference: WMAHSN project

• RCGP Quality Improvement Project in diabetes care
Diabetes observed prevalence by CCG

Comparison with CCGs in the SCN

- 8.7% observed diabetes prevalence in NHS Walsall CCG, compared to 6.4% in England.
Diabetes observed prevalence by CCG

Comparison with demographically similar CCGs

- NHS Walsall CCG: 8.7%
- NHS Wolverhampton CCG: 8.1%
- NHS Bolton CCG: 7.9%
- NHS North Kirklees CCG: 7.8%
- NHS Heywood, Middleton and Rochdale CCG: 7.8%
- NHS Bradford Districts CCG: 7.7%
- NHS Stoke On Trent CCG: 7.6%
- NHS Oldham CCG: 7.5%
- NHS Tameside and Glossop CCG: 7.2%
- NHS Rotherham CCG: 6.7%
- NHS Greater Huddersfield CCG: 5.9%
Diabetes prevalence by GP practice

- GP practice range of observed diabetes 6.2% to 16.5%
At risk of diabetes: estimated percentage of population

Estimated percentage at risk of diabetes by local Authority, top 10
2015
8 Care Processes

2014-15 Care process completion for people with T2DM
NDA data T2DM for WCCG and England

- HbA1C
- Blood Pressure
- Cholesterol
- Serum Creatinine
- Urine Albumin
- Foot Surveillance
- BMI
- Smoking
- All Eight Care Processes

8 Care Processes

2014-15 Care process completion for people with T1DM

- HbA1C
- Blood Pressure
- Cholesterol
- Serum Creatinine
- Urine Albumin
- Foot Surveillance
- BMI
- Smoking
- All Eight Care Processes

Graph showing comparison between WCCG and England for care process completion.
ACR testing

• ACR testing: no longer in QOF
  – Not being done routinely in all practices
• Indicator of risk of micro and macrovascular complications
• Risk increases even below limits for diagnosis of microalbuminuria
Progression of nephropathy

ACR mg/day

Normal  Microalbuminuria  Macroalbuminuria  Elevated plasma...
Detection and management

• Annual ACR test
• If positive, repeat twice within 3-6 months,
• Persistent positive result, code for microalbuminuria (or proteinuria)
• Start ACE or AIIR antagonist if not already on one
• Screen for microvascular and macrovascular complications
What is expected?

• To achieve 92% patients with diabetes having ACR test
• This was achieved 2012
• Should be established as routine diabetes care
• LIS for this year only
What support is available?

• EMIS web concepts and protocol
  – To check whether ACR done
  – To check if positive test
  – To check appropriate coding
  – To check appropriate treatment
  – With prompts where intervention needed
ACR screening

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACR done</td>
<td>469</td>
<td>613</td>
<td>144</td>
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<tr>
<td>(monthly average)</td>
<td>32</td>
<td>51</td>
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</table>
ACR screens done 2013-2015

Run chart of number of ACR screens done SJMC diabetes clinic 2013-2015

Number of patients

Median
## Microalbuminuria coded

<table>
<thead>
<tr>
<th>Microalbuminuria</th>
<th>2014</th>
<th>2015</th>
<th>Difference</th>
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<tbody>
<tr>
<td>Read coded diagnosis</td>
<td>84</td>
<td>137</td>
<td>53</td>
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<tr>
<td>ACEi or ARB prescribed</td>
<td>341</td>
<td>369</td>
<td>28</td>
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EMIS prompts
<table>
<thead>
<tr>
<th>Date</th>
<th>Item</th>
<th>Value</th>
<th>Range Indicator</th>
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</thead>
<tbody>
<tr>
<td>15-Jul-2015</td>
<td>Urine albumin:creatinine ratio</td>
<td>4.8</td>
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<tr>
<td>15-Jul-2015</td>
<td>Serum cholesterol</td>
<td>4.2 mmol/L</td>
<td></td>
</tr>
<tr>
<td>04-Jun-2015</td>
<td>Spirometry reversibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>04-Mar-2015</td>
<td>Asthma Control Test score</td>
<td>21 /25</td>
<td></td>
</tr>
<tr>
<td>05-Aug-2014</td>
<td>Predicted peak expiratory flow rate using EN 13826 standard</td>
<td>425 L/min</td>
<td></td>
</tr>
<tr>
<td>05-Aug-2014</td>
<td>Peak flow rate before bronchodilatation</td>
<td>450 L/min</td>
<td></td>
</tr>
<tr>
<td>05-Aug-2014</td>
<td>Body mass index</td>
<td>48.7 kg/m2</td>
<td></td>
</tr>
<tr>
<td>05-Aug-2014</td>
<td>O/E - weight</td>
<td>114 kg</td>
<td></td>
</tr>
<tr>
<td>05-Aug-2014</td>
<td>O/E - height</td>
<td>153 cm</td>
<td></td>
</tr>
<tr>
<td>03-Apr-2014</td>
<td>Haemoglobin A1c level - IFCC standardised</td>
<td>48 mmol/mol</td>
<td></td>
</tr>
<tr>
<td>03-Apr-2014</td>
<td>GFR calculated abbreviated MDRD</td>
<td>28 ml/min</td>
<td></td>
</tr>
<tr>
<td>24-Dec-2013</td>
<td>Alcohol consumption</td>
<td>6 U/week</td>
<td></td>
</tr>
<tr>
<td>14-Nov-2013</td>
<td>Cigarette smoker</td>
<td>15 /day</td>
<td></td>
</tr>
<tr>
<td>14-Nov-2013</td>
<td>Asthma accident and emergency attendance since last visit</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>14-Nov-2013</td>
<td>Diurnal variation of peak expiratory flow rate</td>
<td>82 %</td>
<td></td>
</tr>
<tr>
<td>14-Nov-2013</td>
<td>Number of cons days less than 80% peak expiratory flow rate</td>
<td>0 day</td>
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<tr>
<td>05-Nov-2013</td>
<td>Glucometer blood sugar</td>
<td>7.3 mmol/L</td>
<td></td>
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<tr>
<td>05-Nov-2013</td>
<td>Target weight</td>
<td>80 kg</td>
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<tr>
<td>05-Nov-2013</td>
<td>Target diastolic blood pressure</td>
<td>70 mm-Hg</td>
<td></td>
</tr>
<tr>
<td>06-Nov-2013</td>
<td>Target systolic blood pressure</td>
<td>130 mm-Hg</td>
<td></td>
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<tr>
<td>05-Nov-2013</td>
<td>O/E - blood pressure reading</td>
<td>138/80 mm-Hg</td>
<td></td>
</tr>
<tr>
<td>25-Oct-2013</td>
<td>HPV - Human papillomavirus test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-Oct-2013</td>
<td>C. smear: repeat 3 months</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-Oct-2013</td>
<td>Cerv. smear: borderline changes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07-Aug-2013</td>
<td>Waist circumference</td>
<td>88 cm</td>
<td></td>
</tr>
<tr>
<td>31-May-2013</td>
<td>GPPAQ usual level of walking pace - slow</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-May-2013</td>
<td>GPPAQ hrs in last wk spent gardening/DIY-some but less than 1hr</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-May-2013</td>
<td>GPPAQ hrs in last wk spent on house work/child care-3hrs or more</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-May-2013</td>
<td>GPPAQ hrs in last week spent walking-some but less</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Positive microalbuminuria test; if only one positive result please repeat. If persistent positive results, please code appropriately.

For type 2 diabetes with microalbuminuria add C10FM, for type 1, C10EL.

Latest HbA1c more than 6 months...
Offer Diabetes Management Plan
Latest cholesterol = 4.2 on 15-Jul...
No recent statin issued this patient...
Positive microalbuminuria test; if o...
The most recent alcohol data rec....
ASKEY, Andrew (Dr)

Patient has been placed under restrictions and no permit to drive a car. It is beyond the presence of action of sitagliptin, and indeed the reason it was prescribed. It is a fact of DVLA guidelines on non-insulin treatment, suggest that in the case of diabetes, the drug is not likely to be tolerated. Suggesting that it may be worth considering alternative treatments. Differing guidelines do not suggest action in such cases.

### Summary
- **HbA1c**: 62.5
- **Cholesterol**: 5.7
- **BP**: 120/80

### Notes
- **Last Cholesterol**: 5.7
- **Latest IFCC HbA1c**: 62.5 mmol/mol
- **The most recent alcohol data recorded**: [Details]
- **The last cholesterol value in this document**: [Details]
- **NICE diabetes targets not yet reached for this patient**: [Details]
- **Patient on QOF Registers**: [Details]
Impact

• Local Improvement Scheme for all practices in Walsall CCG
• 63 practices
• Potential increase of 6000 additional patients being screened in 2015.
Cholesterol target <4mmol/l

• This is a key indicator in NDA
• QOF target still 5mmol/l
• BUT the evidence supports lower cholesterol, as low as achievable
What is expected?

• Increase percentage of people with diabetes with cholesterol lower than 4mmol/l to a minimum of 40%

• Increase appropriate use of statin
What support is available?

- PRIMIS searches
- (local searches, protocols, prompts yet to be developed)
- Links to Prescribing incentive scheme, increasing statin therapy for people with diabetes
Line chart of statin prescribing SJMC diabetes clinic 2013-2016
(number of patients)
Line chart of percentage of statins prescribed by type SJMC diabetes clinic 2013-2016

- Pravastatin
- Simvastatin
- Atorvastatin
Cholesterol <5mmol/l
Run chart of percentage of cholesterol results ≤5mmol/l SJMC diabetes clinic 2013-2016

Cholesterol <4mmol/l
Targets

Treatment Targets achieved 2014-2015, T2DM

- HbA1c < 48 mmol/mol (6.5%)
- HbA1c ≤ 58 mmol/mol (7.5%)
- HbA1c ≤ 86 mmol/mol (10.0%)
- Blood Pressure ≤ 140/80
- Cholesterol < 4 mmol/L
- Cholesterol < 5 mmol/L
- All Three Treatment Targets

(NHS WALSALL CCG (05Y) vs ENGLAND)
Treatment targets achieved 2014-2015 T1DM

- **HbA1c < 48 mmol/mol (6.5%)**
- **HbA1c <= 58 mmol/mol (7.5%)**
- **HbA1c <= 86 mmol/mol (10.0%)**
- **Blood Pressure <= 140/80**
- **Cholesterol < 4 mmol/L**
- **Cholesterol < 5 mmol/L**
- **All Three Treatment Targets**

### Targets

- **HbA1c**
  - < 48 mmol/mol
  - <= 58 mmol/mol
  - <= 86 mmol/mol
- **Blood Pressure**
  - <= 140/80
- **Cholesterol**
  - < 4 mmol/L
  - < 5 mmol/L

### Treatment Targets

- **NHS WALSALL CCG (05Y)**
- **ENGLAND Percentage completed**
Impact of LIS

- ACR screens
  - Potential increase about 6000 more screens done
- 8 Care processes
  - Possibly 2500?
- Cholesterol <4mmol/l
  - Possibly 3000+
Clinical effectiveness and quality improvement

• GLP1 injectable drugs for diabetes

<table>
<thead>
<tr>
<th></th>
<th>Prior to GLP1</th>
<th>After GLP1</th>
<th>NICE targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average weight (kg)</td>
<td>116.1</td>
<td>110.4</td>
<td></td>
</tr>
<tr>
<td>Average HbA1c (mmol/mol)</td>
<td>77.03</td>
<td>63.6</td>
<td></td>
</tr>
<tr>
<td>Average weight loss (kg)</td>
<td></td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>Average weight loss (%)</td>
<td></td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Average HbA1c loss (mmol/mol)</td>
<td></td>
<td>14.3</td>
<td>11</td>
</tr>
</tbody>
</table>
## SGLT2 audit in practice

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>At follow up</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>HbA1c (mmol/mol)</td>
<td>62.7-93</td>
<td>56.2-75.1</td>
<td>+0.7 to -17.9</td>
</tr>
<tr>
<td>Hba1c mean (mmol/mol)</td>
<td>76.8</td>
<td>67.5</td>
<td>-9.36</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>70-182</td>
<td>70-154</td>
<td>0 to -28</td>
</tr>
<tr>
<td>Weight mean (kg)</td>
<td>126.4</td>
<td>114</td>
<td>-12.4</td>
</tr>
<tr>
<td>Weight loss as %</td>
<td></td>
<td></td>
<td>0 to -15.8%</td>
</tr>
<tr>
<td>Weight loss mean %</td>
<td></td>
<td></td>
<td>7.96%</td>
</tr>
</tbody>
</table>
Change in HbA1c with SGLT2

HbA1c (baseline) vs HbA1c (follow up)
Change in weight with SGLT2
Cautions

- Small cohort
- Short duration of treatment
- Total of 19 patients initiated on SGLT2
- 2 stopped due to adverse effects (infections)
- 1 poor concordance
- 1 started on insulin after hospital admission