Meeting the challenges of housebound patients with diabetes

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Abstract
Access to health care is a major determinant of population health, yet the people who need health care the most can be the least able to access it. The housebound are typically a frail group characterised by the potential for dramatic change to their wellbeing after a seemingly minor event. Housebound people with diabetes have been found to have lower rates of access to their nine essential health checks; most notably retinal screening uptake rate is halved in this population.

In response, innovative service redesigns have been described. We are establishing a local inter-agency collaboration to provide a targeted service specifically for the housebound population with diabetes where all their diabetes care is delivered together. This shared project incorporates three GP surgeries, our local community care team, regional retinal screening provider, local volunteer drivers and befriending charities. The value of working with local charities that are embedded in the community has extended the scope of the service to address the loneliness which is often co-existent in this expanding patient group.

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Key words
community; diabetes; housebound; reconfiguration; service

Introduction
Health care accessibility, defined as the opportunity to have health care needs fulfilled,¹ is one of the key determinants of population health.² However, the inverse care law states that the availability of good health care tends to vary inversely with the population need.³ Hard-to-reach or service resistant patient groups are underserved risking poor outcomes.⁴ In order to maximise health care delivery, service planning may require novel ways of thinking.³

Variation is the prominent theme identified in the latest National Diabetes Audit reports with geographical location and demographics impacting on whether patients receive the minimum standard of care.⁵ Hard-to-reach groups are at particularly high risk of inequity and associated poor outcomes. Community services are encountering increasing numbers of housebound patients with diabetes which poses novel challenges to effective care provision. This article explores some of the challenges of high standard of diabetes care delivery to the housebound population and explores innovative care model examples.

Housebound patients with diabetes
Housebound individuals represent a heterogeneous group typically characterised by a degree of frailty with the potential for serious adverse outcomes after a seemingly minor stressor event.⁷ For example, a reduction in visual acuity can lead to marked loss of independence as visual impairment represents a treatable risk factor for falls.⁸ This highlights the value of ongoing retinal screening in housebound patients with diabetes. The policy position set by the National Service Framework for long-term conditions in 2007 stated that all housebound and disabled patients should have the same level of access to eye care services as that of able bodied patients. However, under the current diabetic eye screening programme with centralised venues, the uptake by those who are housebound may be lower than that of those who are independently mobile.

Novel strategies to increase retinal screening in hard-to-reach patients
In 2015, South Tyneside Clinical Commissioning Group (CCG) launched a one-stop service where people attending retinal screening...
had all nine NICE recommended care processes assessed at the same visit (retinal screening, blood pressure, cholesterol, foot check, HbA1c, urine albumin to creatinine ratio, creatinine, BMI, and smoking status). Based on the 2015/16 National Diabetes Audit results, they successfully increased the uptake of all care processes to 69.8% overall, overcoming the previously identified wide variation.9 This simple and easily reproducible model demonstrated the benefit of service coordination which forms a core component of the chronic care model.10

At the 2016 national retinal screening conference, the Worthing service presented a novel pathway for people who reside in care homes.11 Following an increase in patients being sent to appointments without suitable provision for additional needs, such as dementia, these patients were frequently reported to become confused or upset. A new assessment process was established where, prior to their appointment attendance, a telephone checklist was completed with a care home staff member. An algorithm triaged people to the most appropriate service such as a hospital or community based appointment or slit lamp clinic. Following 15 months of implementation, 210 (49%) patients were excluded from a standard retinal screening appointment with an alternative, more appropriate option offered.

Table 1. Data from the National Diabetes Audit 2015–2016 for the West Hampshire CCG highlight the unmet need for the housebound population

<table>
<thead>
<tr>
<th>Variable</th>
<th>CCG average for over 65s</th>
<th>Housebound population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retinal screening uptake (%)</td>
<td>73.9</td>
<td>35.5</td>
</tr>
<tr>
<td>Annual foot check (%)</td>
<td>58.1</td>
<td>54.8</td>
</tr>
<tr>
<td>All other care processes completed (%)</td>
<td>59.7</td>
<td>48.4</td>
</tr>
<tr>
<td>Nature of patient contact</td>
<td>Variable, primarily at health care settings</td>
<td>Domiciliary visits from community care teams</td>
</tr>
</tbody>
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Figure 1. A timeline for set-up, roll-out and service evaluation

Thirty-six percent had undergone retinal screening, far lower than the national uptake of 73.9%;12 48% received all eight other care processes with the majority completed during surgery-based nurse practitioner domiciliary visits rather than the community care team (Table 1). This resource-heavy model of care prevents retinal screening home visits due to inefficiency.

Establishing a novel service for housebound diabetes patients

In response to these findings we are working in partnership with our local retinal screening provider, Health Intelligence Ltd, local volunteer groups, primary care and patient representatives to provide a service that is acceptable and accessible to housebound patients to improve retinal screening uptake, and aim to deliver multiple health care checks in one visit. A regional ‘one-stop service’ is being established through three GP practices combining resources (Figure 1). All housebound patients with diabetes are initially screened by a GP and a practice nurse for suitability – for example those who are bed-bound or with palliative conditions in the end stages of life are excluded. Each patient is invited to attend the service where they can have all their diabetes checks, including retinal screening, completed. The retinal screening providers are enabling pre-population of a specified list

Defining the problem and areas of opportunity for health care accessibility

Further opportunity exists when looking outside the health care system. Partnerships with community organisations, for example charity or volunteer driver groups, may assist the uptake in services already offered. This represents another core concept of the chronic care model.

To further explore the local extent of variation in delivery of the NICE approved diabetes care processes we audited the data of housebound people with diabetes registered at two general practices in New Milton, Hampshire. Of 1249 patients with diabetes, 31 (2.5%) were recorded as housebound. All were older than 65 years and co-existent dementia was common.
with housebound patients and then applying a ‘housebound’ flag to their database that will initiate an invitation to the ‘housebound’ pathway. The patients will be given the option of connecting with a local volunteer driving service to facilitate attendance. In addition to the retinal screening, the service includes a practice nurse who will carry out foot examination, blood pressure and weight measurements and collect samples for albumin to creatinine ratio, creatinine and HbA1c. This role could be taken on by a trained health care assistant to realign our approach to fit alongside each organisation having their own accountable to their board of trustees, donors and volunteers with each organisation having their own vision. This realisation allowed us to rethink our approach to fit alongside the goals of each agency. Additionally, we sought their advice as all had successfully worked in our communities and developed established links. This then led to positive discussions and subsequent engagement which provided an essential foundation to establishing this service. We advise that early development takes a broad consultation from local groups as this can shape proposals, complement their existing projects (typically unknown to NHS services) as well as fostering relationships that will form important components for implementation.


<table>
<thead>
<tr>
<th>Metrics to assess the success of the service</th>
<th>Measurement</th>
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| Patient uptake                             | • Number of GP practices enrolled  
• Number of housebound patients identified  
• Responses/total patient invitations sent (percentages) |
| Patient attendance                         | • Attendance/accepted invitations  
• Attendance/total patient invitations  
• Written feedback sought from attendees  
• Informal patient and carer feedback |
| Completion of the nine care processes       | • Total and individual process percentages  
• Analysed for whole CCG and housebound groups (attended and did not respond/agree or attend new service groups) |
| Health economic assessment                 | • Initial assessment at one year from first session  
• Collaboration with academic, acute services and CCG partners planned |
| Health care staff feedback                 | • Stakeholders regular meetings and informal staff feedback |
| Engagement with local volunteer groups     | • Partnerships with local charity and services  
• Confirmation of ongoing commitment |
| Efficacy                                   | • Prospective audit (care process delivery compared to national standards)  
• Steering group review of reported incidents  
• Multi-organisation review on service and any identified barriers to delivery post initiation |

Table 2. Assessment of our service will be made at one year post implementation based upon a variety of strategic endpoints

Key points
- Currently, housebound people with diabetes are less likely to access retinal screening
- Equity in health care demands that it is accessible to everyone, including hard-to-reach groups
- An inter-agency collaboration is being established to provide a service specifically for the housebound population with diabetes where all their diabetes care is delivered at one point

Assessing the new service
As outlined in Table 2, in addition to efficacy, the success of this reconfiguration will be assessed upon patient uptake, attendance, completion of the nine care processes, health economic assessment, health care staff feedback, engagement of local volunteer groups and regular meetings of all stakeholders. This assessment is planned for one-year post implementation (Figure 1).

Discussion
We believe this novel cross-agency community collaboration represents an evolution of community services to address currently unmet needs of a challenging and enlarging patient cohort. The ability to adapt care strategies is likely to gain more importance as the NHS strives to meet the needs of our changing population demographics. We are unaware of other comparable services, meaning at this time the benefits of our collaboration are unproven. We hope this reproducible service strategy translates to meaningful benefits to our housebound patients with diabetes, with associated benefits and efficiencies to those who provide the multidisciplinary community care to this group.

Declaration of interests
There are no conflicts of interest declared. Funding: none.

References
References are available in Practical Diabetes online at www.practicaldiabetes.com.
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References