

## Special Article

# Association of British Clinical Diabetologists (ABCD) and Diabetes-UK survey of specialist diabetes services in the UK, 2006. 1. The consultant physician perspective

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### Abstract

**Aims** To identify the views and working practices of consultant diabetologists in the UK in 2006–2007, the current provision of specialist services, and to examine changes since 2000.

**Methods** All 592 UK consultant diabetologists were invited to participate in an on-line survey. Quantitative and qualitative analyses of responses were undertaken. A composite 'well-resourced service score' was calculated. In addition to an analysis of all respondents, a sub-analysis was undertaken, comparing localities represented both in 2006/2007 and in 2000.

**Results** In 2006/2007, a 49% response rate was achieved, representing 50% of acute National Health Service Trusts. Staffing levels had improved, but remained below recommendations made in 2000. Ten percent of specialist services were still provided by single-handed consultants, especially in Northern Ireland (in 50% of responses,  $P = 0.001$  vs. other nations). Antenatal, joint adult–paediatric and ophthalmology sub-specialist diabetes services and availability of biochemical tests had improved since 2000, but access to psychology services had declined. Almost 90% of consultants had no clinical engagement in providing community diabetes services. The 'well-resourced service score' had not improved since 2000. There was continued evidence of disparity in resources between the nations (lowest in Wales and Northern Ireland,  $P = 0.007$ ), between regions in England (lowest in the East Midlands and the Eastern regions,  $P = 0.028$ ), and in centres with a single-handed consultant service ( $P = 0.001$ ). Job satisfaction correlated with well-resourced service score ( $P = 0.001$ ). The main concerns and threats to specialist services were deficiencies in psychology access, inadequate staffing, lack of progress in commissioning, and the detrimental impact of central policy on specialist services.

**Conclusions** There are continued disparities in specialist service provision. Without effective commissioning and adequate specialist team staffing, integrated diabetes care will remain unattainable in many regions, regardless of reconfigurations and alternative service models.

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**Keywords** commissioning, consultant diabetologists, diabetes, National Service Framework, specialist services

**Abbreviations** ABCD, Association of British Clinical Diabetologists; DSN, diabetes specialist nurse; GP, general practitioner; NHS, National Health Service; NSF, National Service Framework; RCP, Royal College of Physicians; WTE, whole time equivalent

### Introduction

The provision of services for people living with diabetes in the UK has been the focus of attention since the publication, in England, of the Diabetes National Service Framework (NSF) Standards and Delivery strategy documents in 2001 and 2002

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[1,2], the NSF for Diabetes in Wales [3], the Scottish Diabetes Framework [4] and the Blueprint for Diabetes Care in Northern Ireland [5]. A series of documents in support of commissioning and provision of diabetes services has since been published by the National Diabetes Support Team at the Department of Health [6–8], while at the same time a major shift in service provision from hospital to community care has been an explicit government policy objective [9,10].

Reconfiguration of diabetes care was underpinned by key standards, with implications for both specialist and primary care diabetes services. The introduction of the General Medical Services contract for general practitioners (GPs), with recording of process and surrogate outcome measures of diabetes care through the Quality Outcomes Framework, is reported to have enhanced care for those living with diabetes [11]. Integration of diabetes services across the primary care–specialist interface was another objective of service reconfiguration, along with appropriate resource allocation, staffing and skill mix [1–7].

Just prior to the introduction of the NSF in 2001, the Association of British Clinical Diabetologists (ABCD) undertook an extensive survey of secondary care services for diabetes in the UK [12–15]. The key findings were that over one-third of specialist services were provided by a single-handed consultant physician; that support from diabetes specialist nurses, podiatrists and dieticians was considerably less than had been recommended [16], that retinal screening programmes were not operating in at least 25% of centres, and access to key biochemical testing was far from comprehensive. Another important finding, which the NSF sought to eradicate, was clear evidence of regional variation in key personnel, facilities and specialist diabetes services. There were frequent reports of failed bids for service improvements, especially for dietetic and podiatry support.

In 2004–2005, 89 consultant diabetologists in England were interviewed in a review of the roles, responsibilities, working practices and job satisfaction of consultant diabetologists [17]. This, however, was prior to the impact of the White Paper on ‘Shifting the Balance of Power’ to the community and the acute financial shortfall for health economies in the UK in 2006 [18]. Challenges were recognized, but job satisfaction was generally high, and there was a clear understanding of the multifaceted roles of consultant diabetologists best met by a pool of specialists working collaboratively. There was a clear desire to engage in service reconfiguration, but frustration that this was impeded by the organizational structures and the ethos of plurality of provision that had been introduced into healthcare.

In 2006, Diabetes UK subsequently undertook a patient survey of its members and a progress survey of commissioning organizations [19]. This revealed high patient satisfaction, but recognition of deficient specialist psychologist support, inadequate retinal screening services, and outstanding issues regarding paediatric and transitional care of young adults with diabetes. There was continued concern that a ‘post-code lottery’ operated in accessing new therapies and services. Commissioning organizations concurred with the findings

regarding psychology support and services for young people and identified a shortfall in resources for patient education. Several challenges that had hindered implementation of the Diabetes NSF were identified, e.g. reductions in funding, organizational change, ‘practice-based commissioning’ and ‘payment by results’.

Given the rapid pace of change in the National Health Service (NHS) and the issues raised by these reports, it was considered vital to establish independently the views of specialists involved in service provision. In late 2005, ABCD, in collaboration with Diabetes UK, developed a series of surveys to review specialist diabetes services throughout the UK. The objectives were to identify existing provision in services and changes since the earlier ABCD survey of 2000. The independent Health Care Commission conducted a review amongst Primary Care Trusts in England during the same time period as our current survey, and reported variable provision of basic needs for people with diabetes, a shortfall in patient exposure to education programmes, and a need to engage all clinical stakeholders in the commissioning of diabetes services [20].

This current survey examined core specialist diabetes services, and focused on the views and working practices of consultant diabetologists throughout the UK, complementing the interviews with consultants in England conducted 12–18 months previously [17] and the report from the Health Care Commission [20].

## Methods

An on-line survey was undertaken between May 2006 and February 2007 using the Opinion taker website. The survey was designed by the authors and included both closed and open questions about the provision of acute–general internal medicine and diabetes services. Consultants were asked to respond to three open questions, which in turn gave the opportunity for up to three responses. We ascertained what consultants considered were the main strengths and weaknesses of their specialist service, and the issues that they perceived most threatened the specialist service.

The questionnaire was piloted by the professional committees of ABCD and Diabetes UK. Consultants ( $n = 693$ ) involved in the provision of specialist diabetes and endocrinology services in the UK were identified through the databases of ABCD, Diabetes UK and the Royal College of Physicians (RCP) Manpower Survey. E-mail addresses were obtained from the directories of ABCD, Diabetes UK and other sources available to these associations, and an invitation to complete the on-line survey was sent in May 2006. A reminder was sent in September 2006, with the option of completing a mailed hard copy, and non-responders were contacted by telephone. The survey was publicised through the ABCD and Diabetes UK websites and mail shots.

One hundred and one physicians were excluded (33 provided endocrine services only; 21 had retired; 19 did not provide diabetes services; nine were not consultants; nine had recently moved posts and three were between jobs; two were unknown at that address; two provided paediatric care; one was deceased; one was a duplicate; and one was a GP), leaving a total of 592

consultants actively involved in diabetes care. Localities which had provided responses to both the 2006/2007 and 2000 surveys were identified to compare trends in service provision between this subsample and the complete sample of respondents in both surveys.

### Statistical analysis

The results were analysed using Excel and the Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) using parametric and non-parametric tests according to the distribution of the data. Association and correlation between variables were measured by Pearson's  $r$  or Spearman's  $\rho$  and  $\chi^2$  tests. ANOVA was used to assess variance between means and an on-line statistical calculator (<http://survey.pearsonncs.com/significant-calc.htm>) tested significant differences between survey results in 2000 and 2006.  $P < 0.05$  was considered to be statistically significant. Data are presented as frequencies, medians and ranges. Open-ended questions were systematically coded by one of us (C.G.), using an approach based on the framework method. Each response was read and assigned a code and grouped into themes that emerged from the data. To validate the interpretation, three consultant physicians (P.H.W., R.I.G.H. and C.W.) checked the interpretation of responses into codes and themes, and adjustments were made as required. Codes and themes were counted and ranked in order of frequency to represent the strength of respondent views.

As in the ABCD 2000 survey, a 'well-resourced service score' was used to describe variability in specialist service provision. This was based on levels of staffing, diabetes care services, and other core measures (Table 1). The same methodology was employed as in 2000 [12], with the exclusion of coding for retinal screening schemes, as this has been the focus of a separate survey. With a possible maximum score of 25 points, responses were graded as A\* (24–25), A (21–23), B (18–20), C (15–17), D (12–14) or E (< 12 points).

## Results

Two hundred and eighty-nine responses were received, representing a 49% response rate and covering 50% of acute NHS

**Table 1** Score components of a well-resourced service [with the same weightings (in parentheses) as used in the ABCD 2000 survey]

Consultants in diabetes (4)	Local vascular surgeon (1)
Diabetes specialist nurses (3)	Lipids measured (1)
Dietician (2)	High-density lipoprotein measured (1)
Podiatrist (2)	Microalbuminuria available (1)
Diabetes register (2)	Specific service for erectile dysfunction (1)
Joint antenatal diabetes service (1)	Joint paediatric clinic (1)
Joint ophthalmology diabetes service (1)	Clinic guidelines (1)
Separate clinics for the elderly (1)	Education (1)
	Access to psychologist (1)

**Table 2** Whole-time equivalent (WTE) consultant numbers in 2000 and 2006

WTE of Consultants per 100 000	2000	2006
> 1.5	6.2%	8.8%
1.26–1.50	3.4%	5.5%
1.1–1.25	2.8%	21.0%
0.76–1.0	26.4%	32.4%
0.51–0.75	28.7%	16.5%
0.26–0.50	31.5%	14.0%
0.1–0.25	1.1%	1.8%

Trusts in the UK. The Trust responses by nation were England 51%, Northern Ireland 50%, Scotland 44% and Wales 33%. As reported elsewhere [21], the age and gender breakdown of the responding consultants were closely comparable to those in the RCP Census of Consultant Physicians in the UK with respect to Diabetes and Endocrinology [22,23], and matched the demographic characteristics of consultants interviewed in the earlier survey in England [17]. Data for 123 localities were obtained in both the 2000 and 2006/2007 surveys. Overall responders were comparable to non-responders in respect of region/country of response, age, gender, or time of response.

### Key personnel

The number of consultant physicians providing specialist diabetes services had increased from 2000 from 456 to 592. Services were still provided by single-handed consultants in 10% of responses, but median whole time equivalent (WTE) consultant activity had risen from 0.67 per 100 000 population in 2000 to a range of 0.76–1.0 in the current survey (Table 2). Single-handed consultants were more frequently reported in Northern Ireland (50% of responses) than in the other nations (England 7.7%, Wales 14.3%, and Scotland 4.2%,  $P < 0.001$ ).

The estimated provision of diabetes specialist nurses (DSNs) was  $\geq 1$  per 100 000 population in 60% of responses. This did not vary significantly by nation. Although the unit of measurement differed from the estimation of DSNs in the earlier 2000 survey, the median provision had increased from 1.0 to 1.1–1.25 per 100 000. The mode of enquiry regarding podiatric and dietetic staff also differed between the 2000 and the current survey, where median WTE dietician availability was 1 per 100 000 population without any variation by nation. There was fewer than one WTE dietician for the specialist diabetes service in > 72% of responses in the 2000 survey, suggesting increased dietetic service provision over the 6 years. The median WTE podiatrist availability was also one, and did not vary significantly by nation, whereas in the 2000 survey almost 97% of responses stated that WTE podiatric availability was < 1 WTE, again indicating an improvement in podiatric sessional input.

**Table 3** Specialist diabetes services in 2006 compared with 2000

Specialist service	Status in 2000	Status in 2006
Diabetes register	73%	66%
Guidelines to ensure comprehensive care in all settings	85%	82%
Structured education for patients	77%	87%
Access to a psychologist*	45%	41%
Local vascular surgeon in the hospital	88%	86%
Joint antenatal*	85%	93%
Joint diabetes ophthalmology	15%	21%
Joint paediatric-adolescent*	60%	75%
Separate diabetes clinics for the elderly	13%	9%
Specific service for erectile dysfunction	60%	61%
Microalbuminuria*	93%	99%
High-density lipoprotein-cholesterol measured*	85%	96%
Lipids measured	99%	100%

\*Difference is significantly different from 2000.

**Table 4** Frequency of individual consultant involvement in subspecialist diabetes services

Type of service	% of respondents
General diabetes	99%
Antenatal	48%
Transitional adolescent-adult clinics	42%
Joint adolescent	21%
Joint paediatric	9%
Joint foot	38%
Diabetes renal	22%
Joint ophthalmology	5%
Pump-intensive management	26%
Liaison psychiatry diabetes	2%
Joint men's health	1%
Community diabetes clinics	13%
HIV-diabetes	1%
Sports and diabetes	1%
Other specialist clinics	16%

### Specialist services and resources

The characteristics of specialist services in the current and 2000 surveys are presented in Table 3. Hospital diabetes registers, psychology access, and separate diabetes services for the elderly were less common than in 2000. Provision of joint antenatal, paediatric/adult and ophthalmology diabetes services had improved, as had laboratory access to high-density lipoprotein-cholesterol and microalbuminuria measurements, and training and resources for patient education. Other service provision had not changed appreciably. Changes in staffing levels and specialist services amongst the 123 acute trusts represented both in 2000 and 2006 were comparable to the complete samples (data not shown).

**Table 5** Well-resourced service scores by nation and regions of England

Nations	Good	Average	Poor
England	23%	58%	20%
Wales	7%	73%	20%
Scotland	21%	75%	4%
Northern Ireland	8%	33%	58%

  

Regions	Good	Average	Poor
North	32%	52%	16%
Midlands and South	18%	61%	21%

Good (A\*/A well-resourced score).

Average (B/C well-resourced score).

Poor (D/E well-resourced score).

Individuals were asked about the nature of services in which they were personally involved, reflecting sub-specialist interests amongst consultant diabetologists (Table 4). Whereas around 40% participated in clinic services with other disciplines such as obstetrics, paediatrics and podiatrists, only 13% were involved in community diabetes clinics.

### 'Well-resourced service score' and perceptions of service

There was considerable variation in the 'well-resourced service score'. The maximum score (A\*) was recorded in only one response, with just over 25% of responses demonstrating a high score (A\* or A). The mean score was 17.3 (graded C), with 15.7% of responses scoring D or E, reflecting considerable deficiencies in service provision (Table 5). There was significant variation in the score with geographical heterogeneity across England (by Strategic Health Authority,  $P = 0.029$ ), with the highest scores in the North of England and the lowest in the East Midlands and the Eastern regions. There was also a difference between the nations, with the highest scores observed in England and Scotland, in comparison with Wales and Northern Ireland ( $P = 0.007$ ). Services graded D/E were found in 4.2% of responses from Scotland, compared with 58.3% in Northern Ireland. Varying the weighting of the components of the scores did not appreciably alter these findings.

After adjusting for the number of consultants in each service, as was found in the 2000 survey, those services with fewer consultants had a lower score ( $P = 0.0001$ ). Designated teaching hospitals tended to have better scores, but this was not significant ( $P = 0.098$ ).

There was no significant interaction between the score and the age of respondents, or whether or not consultant colleagues had opted out of acute-general internal medicine. After removal of the component for a retinal screening programme, the mean well-resourced score (17.3) was comparable to 2000 (18.1). There was a significant relationship ( $P = 0.001$ ) between the perception of those consultants that their service was well

**Table 6** Strengths of specialist diabetes services—main themes

	Main themes	Frequency of reporting
1	Expert, committed and motivated specialist staff	166
2	Excellent multidisciplinary team working	118
3	Good links with primary care, effective networks and integrated community focused services	88
4	Comprehensive, well-organized service with a good range of speciality and sub-specialist clinics	154
5	Patient focused, innovative and high-quality service	78
6	Excellent education for patients and healthcare professionals	28
7	Good facilities and IT systems in place	37

**Table 7** Weaknesses of specialist services—main themes

	Themes	Frequency of reporting
1	Under-resourced specialist services, in particular psychology (33), dietetics (35), education (23), podiatry (22), paediatric and adolescent clinics (13)	169
2	Lack of staff	99
3	Organization of service	73
4	Poor facilities, also includes split site working	42
5	Funding and finance cuts and higher prevalence	41
6	Lack of strategy and leadership	32
7	Poor links with community and/or primary care	32
8	Poor IT	29

**Table 8** Threats to specialist services—major themes

	Themes	Frequency of reporting
1	Commissioning and negative impact of central government policy on diabetes care	176
2	Lack of understanding of complexity of diabetes and shift to primary care	106
3	Staffing and training cuts	93
4	NHS funding/finances/deficits	88
5	Service reconfiguration and fragmentation of care provision	51
6	Diabetes not prioritized, poorly valued and reduced investment to specific services	46
7	Pressures from acute medicine or general medicine	19
8	Poor communication and collaboration primary care, Primary Care Trusts and specialist services	16

resourced and the calculated score. The service was not regarded as well resourced in 36% of responses, and overall 20% of scores were D–E. Fifty-two percent of consultants reported their job satisfaction to be moderate or poor. Job satisfaction was strongly correlated with individual service scores ( $P = 0.001$ ).

#### Strengths, weaknesses and threats to the specialist service

In the qualitative analysis of strengths, weaknesses and threats to the specialist service, more negative comments (232) were reported than positive comments [23]. These are recorded in Tables 6–8. The dominant themes that emerged as major threats to the specialist service were ineffective commissioning and the negative impact of central policy on specialist diabetes

care, a belief that commissioners lacked understanding of the complexity of diabetes leading to a precipitate shift to primary care, staffing and training cuts, related financial deficits/funding issues, service reconfiguration and service fragmentation, and a perception that commissioners and acute trusts undervalued diabetes and saw it as a low priority.

#### Understanding of and engagement in commissioning diabetes services

In England, virtually all respondents were aware of ‘payment by results’ (99%) and ‘practice-based commissioning’ (100%), but there was misunderstanding about the exact tariff for new and follow-up diabetes specialist out-patient consultations. Only 50–65% estimated these correctly or to within 10% of

these costs (tariff for new patient £247, estimated cost range £80–388; follow-up tariff £90, estimated cost range £30–180). It is notable that only 16% had been involved in discussions regarding these, particularly as lack of engagement of specialists in commissioning diabetes services was a recurrent negative theme in the qualitative analyses.

## Discussion

This Internet-based survey attracted a response from approximately 50% of consultant physicians with a diabetes interest working in the UK. This response is less than the 77% achieved in the ABCD survey in 2000 [12]. Although the representativeness of the survey could be called into question, a lack of significant non-response bias is suggested by three features of the results. The respondents to this survey were broadly comparable to the general body of consultants identified in the RCP manpower survey [22,23] and the National Diabetes Support Team interviews of consultants in England [17]. The changes in service provision between 2000 and 2006/2007 in the analyses of the complete sample were mirrored in the comparison of the 123 localities that featured in both surveys, and there was no discernable trend in the responses to questions in relation to the time of receipt of response (data not shown). The latter index was used in the 2000 survey as an indicator of the possible extent of non-response bias [12]. The regional differences in the current survey are also unlikely to have been due to any important geographical non-response bias.

One important observation has been the demonstration of improvements in medical, nursing, dietetic and podiatric staffing levels since the ABCD survey in 2000. This would have been expected as a consequence of the Diabetes NSF and a national commitment to enhancing specialist diabetes services. It is important, however, to put these improvements in context of the more recent reductions in specialist staffing, which coincided with the latter stages of this current survey [24]. Although the number of consultants has increased, there are still 10% of services run single-handedly, and the number of consultant physicians providing diabetes services remains considerably lower than recommended by the RCP and specialist organizations [22,23], and almost 300 fewer than suggested by the Department of Health in the Delivery Strategy document of the NSF [2]. The number of posts must also take account of an increase in consultants working part time (13% overall in the most recent RCP manpower survey) [23] and the impact of acute-general internal medicine. The ABCD-Diabetes UK survey has reported elsewhere the increasing commitment of specialist diabetologists to acute-general internal medicine as other core medical specialities have opted out, which in turn is impeding the contribution of the increased consultant numbers to diabetes service development [21].

The increased number of DSNs since 2000 is reassuring, but is still below that recommended at the time of the initial ABCD survey in 2000 [13]. Furthermore, the increase since 2000 has

been superseded by more recent reports of cuts in specialist nurse posts in the wake of acute trusts financial deficits [24]. The increasing incidence of diabetes and staffing requirements for in-patient diabetes care will place further demands on the hospital-based DSNs. The relocation of some DSN services from acute trusts to the community makes this situation difficult to appraise. A detailed survey of DSNs in different health sectors will be the subject of a separate report. Similarly, although dietetic and podiatric support had also improved, numbers remain below recommendations made over 6 years ago [14–16].

Basic core components for a specialist diabetes service are, therefore, still not in place in many areas. Whereas educational input and joint antenatal specialist diabetes services have improved in the last 6 years, there remain a significant number of areas of concern identified in 2000 that have not been rectified. Adequate integrated information systems, collaborative working with ophthalmology and paediatrics, and services for the elderly and those with erectile dysfunction need further development. The lack of access to psychology support has been repeatedly highlighted in a succession of reports from different bodies and appears worse than in 2000 [12,19,20], despite explicit recognition as a core standard service in the Diabetes NSF [1]. Clinical psychology services are recognized to be generally under-resourced, and the contribution to diabetes services may be further impeded by the competing demands of Mental Health Trust provider units. The lack of ring-fenced funding for the Diabetes NSF has meant that, with the exception of retinal screening and GP-based registers, many specialist services that were in need of additional resources in 2000 did not develop before yet another major change in health service provision intervened and left them under-resourced. Consequently, the 'well-resourced service score' had not improved, despite improvements in some staffing levels.

Consultants were concerned that where progress had been made, this was under threat and might not be maintained due to loss of staff through lack of funding and fragmentation of the multidisciplinary specialist team. It was also felt that the unplanned shift of complex cases into the community without specialist involvement in service reconfiguration would jeopardize patient care. Despite aspirations to bring specialist care closer to patients' homes, very few consultants were engaged in providing community diabetes sessions.

We are unaware of comparable international research where such major reconfiguration of public healthcare systems may have impacted on diabetes services, although some moves toward greater partnership between primary and specialist diabetes services has been developed in parts of Canada [25], where the emphasis was on education of patients and non-expert healthcare professionals, and better utilization of community-based services with multidisciplinary teams, with a particular focus on more remote Aboriginal communities. Our current study highlights many issues that need consideration if other nations are planning to change diabetes service models and shift specialist care out of secondary care settings.

The drive and enthusiasm of consultants in diabetes in the UK exemplified in the earlier survey of English consultants [17] is still apparent. However, the intervening 12–18 months between the two surveys may have impacted on the broad perceptions of consultants. The level of job satisfaction appears to have fallen, as 34% expressed moderate or poor job satisfaction in the earlier survey [17], in comparison with > 50% who held such views in the current study. This may reflect the frustration in being unable to play a more active role in service reconfiguration and commissioning that was evident in the qualitative analyses.

The ABCD survey in 2000 revealed national and regional variation in services. Established services that were well resourced had received enhanced regional funding, leading to the perception that ‘success bred success’ [12]. The current survey has confirmed that regional disparities in service persist. Suboptimal service provision again appeared more likely in the Eastern region of England that had scored poorly in 2000, and in single-handed consultant-led services. Diabetes services and consultant staffing levels in Northern Ireland were notably under-resourced. The differences between the nations may in part reflect different stages of health service reform. ‘Practice-based commissioning’ is unique to England, whereas devolution had not taken place in Northern Ireland at the time of the survey. A more detailed analysis of this variation is in preparation.

The prevalence of diabetes is increasing, and to ensure the standards for care set out in the NSF are met, specialists have a vital role to play working in collaboration with primary care colleagues in the design and commissioning of diabetes services. Without the engagement of specialist staff, services will lack the leadership and expertise required to provide care for people with complex healthcare needs, and specialist training may be compromised. The Diabetes Commissioning Toolkit [6] in England has provided a blueprint to enable purchasers to commission an integrated diabetes service. Collaboration between all healthcare professionals involved in diabetes care in effective networks is essential to establish current service provision, enable workforce planning and thereafter commission a high-quality integrated diabetes service that is ready to meet the challenges of the diabetes epidemic [26].

## Competing interests

None to declare.

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