Abstract

Aims: As one of the biggest organisations in the world, the NHS in England can contribute considerably to the United Nations' Global Sustainable Development Goals (SDGs). In order to optimise this, this study evaluated and reconceptualised a sustainable development assessment tool for health and care settings in England.

Methods: A quantitative survey and user/expert discussion panels were conducted to evaluate and reconceptualise the existing sustainable development assessment tool used by the NHS in England, the so-called 'Good Corporate Citizenship Assessment Tool', between 2007 and 2016 including potential improvements such as the integration of the UN SDGs.

Results: A reconceptualised self-assessment tool integrating the UN's SDGs was developed and implemented online as the 'Sustainable Development Assessment Tool (SDAT)'. Further improvements included a process orientated redesign and the creation of new modules and cross-sections aligning them with the leads responsible for the implementation of key initiatives in NHS organisations, which would contribute to achieving the targets of the SDGs.

Conclusions: User/expert involvement has enabled an informed approach to a reconceptualisation of a sustainable assessment tool for health and care settings. The tool will support organisations to build their mandatory Sustainable Development Management Plans, as part of the national Public Health Outcomes Framework. Alignment of the tool to the UN Sustainable Development Goals provides an opportunity for health and care organisations to demonstrate accountability and progress against the UN's set of transformational goals. Furthermore, the tool could be adapted to other public service providers.

Keywords: sustainable development, tool, self-assessment, health and care, UN Sustainable Development Goals, SDGs, NHS

Introduction

The NHS in England is one of the biggest organisations in the world. For instance, it spent £120.5 billion in 2016/17. With over 1.3 million staff it attends to the health and care needs of, on average, over 1 million patients every 36 hours, from over 7,000 premises.[1] It is faced with a huge range of challenges and opportunities if it is to deliver this activity in a progressively sustainable manner, and achieve a wide range of health, social, economic and environmental benefits.[2] This situation is made ever more challenging by the need to meet the rising demands on its services due to increases in population and life expectancy, and the financial challenges that the service faces.[3]

Successive UK governments have implemented a number of statutory, policy and strategy initiatives[4,5] that require the NHS, and public sector organisations in general, to build on the sustainable development opportunity. Publically available data shows why there is an urgent need for action. Energy spend is approximately £570m per annum.[6] The volume of water used by NHS

provider organisations increased by 1.8% between 2013/14 and 2016/17.[7] It is estimated that NHS waste and water costs account for £110m and £83m, respectively, per year.

The Sustainable Development Unit (SDU) is jointly funded by Public Health England and NHS England and hosted within NHS England, to lead on addressing these challenges for the health and care system. The SDU is responsible for developing and ensuring delivery against the adopted national 2014-2020 Sustainable Development Strategy for the Health and care system.

Over the last 10 years, with the support of the SDU there has been some progress, for example direct emissions from building energy use has reduced by 9.4% between 2013/14 and 2016/17.[7] These savings have been achieved against a backdrop of significantly increasing demand for health and care services. What is apparent from these and a plethora of other initiatives and data is that a holistic, systems approach to sustainable development is required. As Pencheon[2] notes:

> "*Emerging approaches to health, care and wellbeing need to be increasingly environmentally sustainable, financially sustainable, and also make far smarter use of our virtually unlimited social and human capital. Most health is won or lost outside formal health and social care settings. How we eat better, how we move our own bodies more, how we develop new ways of protecting and improving health, and how we build more resilient communities can all provide significant short-term and priceless long-term benefits for our health and communities*."

Given the breadth of the sustainable development agenda and recognising the range and value of the potential gains that sustainable development can yield, the SDU identified several years ago that relevant management tools to help drive improvements could be very useful. Well-designed self-assessment tools for example should provide implicit guidance on the key areas of focus and can also provide an explicit structure to help organisations plan, implement processes to improve, and monitor progress. Additionally they provide opportunities to highlight the 'softer' value of sustainable development in an area typically dominated by quantitative outcome measures. For these reasons, self-assessment tools have been developed for use in many areas of practice from assessing neighbourhood sustainability[8], to sustainable development in higher education institutions.[9] In the last year the SDU has been working to ensure that its management tools are fully integrated to be mutually supporting, linked to policy, and embedding the capture and celebration of good practice. In addition, these tools facilitate the transformation of data into information to aid decision making, inform future policy, offer reporting facilities, and promote transparency of decision making and communication with stakeholders.

Appropriate management tools need to address the complexities of the sustainable development agenda but also need to be tailored to the requirements of the system in which they will be used, and adaptable to local conditions within the system.[8] An increasingly common feature of many publically-funded health and care systems is the split between providers of services and commissioners of services. These different sectors face the same 'named' challenges such as waste minimisation, however, implementation of plans to tackle these challenges will vary across

sectors e.g. waste minimisation in a provider hospital organisation versus that in a commissioning body. The size of the organisations meeting these challenges also varies and this is also a factor in the design of any assessment tool. For instance, some larger organisations have specialist resources available to help address their sustainable development efforts e.g. in facilities management; some smaller organisations have to rely on more generic inputs across a range of areas or receive input from shared or 3rd party resources such as human resources management.

Considering all of the above factors led us to the notion that there is potential value in producing an appropriately designed sustainable development self-assessment tool for publically-funded health and care organisations. From 2007, NHS England has been promoting the use of a bespoke tool known as the Good Corporate Citizenship (GCC) self-assessment tool.

The GCC was a 441 item, online tool that organisations used to self-assess sustainable development performance. Its 9 modules included corporate approach, travel, procurement, facilities management, workforce, community engagement, buildings, adaptation and models of care. Within each module there were subsections. These enabled key aspects of the module to be assessed and rated e.g. within the Workforce module there were subsections covering policies, learning and development, etc. In total there were 6 subsections in all of the modules except in the corporate approach module that comprised 9 top-level items for self-assessment e.g. Responsibility and accountability for sustainable development is clear in our organisation.

Each subsection had 3 qualitatively progressive levels of performance referred to as 'Getting started', 'Getting there' and 'Excellent'. Within each level of performance there were 3 statements for assessment. The statements in the GCC were generally classified as belonging to one of three categories, i.e., 1. Statements assessing whether some *structural element* was in place e.g. a policy; 2. Statements assessing whether a *process* was in place e.g. 'We actively benchmark our progress on carbon reduction with similar organisations'; or 3. Statements assessing whether an *outcome* had been achieved e.g. 'We can demonstrate how our action plan has led to social economic and environmental benefits, including carbon reduction.' A large majority of the statements (about 70%) related to *process*. An overview of the GCC structure is shown in Table 1.

Module	Subsections	Statements per subsection	Number of statements
1. Corporate approach	1	9	9
2. Travel	6	9	54
3. Procurement	6	9	54
4. Facilities management	6	9	54
5. Workforce	6	9	54
6. Community engagement	6	9	54
7. Buildings	6	9	54
8. Adaptation	6	9	54
9. Models of care	6	9	54
		Total	**441**

Table 1. Overview of the GCC structure

In practice, the GCC tool has had significant use although, in general, limited regular use across the health system. Around 50% of health sector organisations have used the tool in the last 4 years, however only about 13% of providers and commissioners do so annually.[7] There are many potential reasons for such a low uptake. These include the voluntary status of the tool, that is, organisations are not mandated by NHS England to use the GCC assessment tool. However, from a first round of stakeholder meetings it appeared that this was not the main factor for its low uptake. Rather, the GCC was deemed too long, too complicated and too onerous to complete and derive value from, certainly on an annual basis.

This evidence supported the SDU's view that there was a need for a complete refresh of the tool, including updating policy references. Furthermore, the SDU was keen to align the tool with: the other sector management and reporting tools for sustainability; the emerging approach to segmenting the sustainability challenge around core, supply chain and community influence, and a desire to embed the self-assessment tool into a mechanism to celebrate and recognise good practice.

The SDU therefore commissioned this formal and more in-depth evaluation of the GCC tool. In addition, the SDU also sought guidance on how the health sector could support alignment of organisational plans to the United Nations' Global Sustainable Development Goals (SDGs), which were adopted by the United Nations with its 193 Member States in September 2015.[10] The UN agreed on 17 goals, asking everyone - states, private and public sector, individuals - to contribute to the SDGs. They include targets for eradicating poverty, basic health standards worldwide, and climate change mitigation and adaptation. All 17 SDGs and the specific targets agreed for each of them can be found at the Sustainable Development Knowledge Platform [Accessed 9 May 2018].

Unsurprisingly, much has been written on the UN's Sustainable Development Goals and a full review is beyond the scope of this article. However, it is recognised that they act as a driver for action at global, national, local and individual levels with the aim of achieving a more equitable and lasting prosperity by ending poverty, fighting inequality and injustice, and tackling climate change by 2030.[11,12] A recent report from the Environmental Audit Committee of the UKs House of Commons[13] noted that there was a general lack of awareness of the goals. Moreover, as they are not legally binding, progress "*will rely on the goodwill of Governments to facilitate its delivery, utilising the power of public sector institutions (e.g. NHS and local government) to deliver the Goals on the ground*". Hence, it is clear that large public sector organisations such as the NHS are encouraged to show leadership in this area of policy.

The rest of the paper is structured as follows. The methods for data collection and analysis are presented followed by the main results from the user survey. The discussion then provides an account of the development of the reconceptualised assessment tool in light of the results, before some final conclusions are made.

Methods

On the basis of initial user feedback on the existing GCC tool, a bespoke questionnaire was devised to obtain a larger sample of views. The questions focussed on the reasons for using the GCC assessment tool, the collection of evidence associated with the self-assessment, the organisation's use of the results both internally and externally, problems with the tool, and suggested improvements such as including the SDGs. Most of the questions had lists of potential responses for participants to select and users were also prompted to enter free-text comments to supplement their responses. The questionnaire was formatted and made available online to potential participants using the Bristol Online Survey tool [Accessed 9 May 2018].

A list of potential participants (n= 68) was drawn up by the Sustainable Development Unit. This was a purposive sample based on the Unit's network of contacts. This was based on a regional network of sustainability leads and an open call across sustainable development leads in England. Some of the contacts were active users of the GCC and some were not. Each potential participant was sent an email inviting them to participate in the survey and a link to the online questionnaire. The online questionnaire included an information sheet on the project, and a consent form for completion. Nottingham Trent University were the custodians of the data and only anonymised and summarised data have been made available to the Sustainable Development Unit.

The survey was conducted during March 2017. Thirty-six responses were received giving a response rate of 52.9%. The survey data was analysed using descriptive statistical methods including the use of frequency tables and bar charts using SPSS (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY). The free text responses provided a rich source of data (222 comments) and were analysed using NVivo11 Pro (QSR International Pty Ltd. Released 2011, Version 11, Victoria, Australia). Commonly occurring patterns or themes were identified in the data using thematic analysis.[14] In the results section we have presented anonymised quotes to illustrate the identified themes.

Following the survey period, 10 user/expert groups were convened to discuss the results of the survey and help develop a reconceptualised assessment tool. Each user group comprised invited members from the original survey pool and invitations to Clinical Commissioning Groups to ensure a balanced representation of input. One focus group was convened comprising Public Health and clinical experts to develop the new Sustainable Models of Care module. Finally, we engaged with industry/topic experts to review and support the development of certain statement sets e.g. Public Health England's Extreme Events and Health Protection Team for the new Adaptation module, and NHS England's Wellbeing and Corporate Social Responsibility team for the new 'Our People' module.

Results

Table 2 presents the frequency of respondents within broad categories of health care organisation types showing representation from the main provider and commissioning bodies within the NHS. The 'Other' category includes representation from the Ambulance Services, Community Services,

and Public Health functions within Local Authorities. Based on the nationally reported number of organisation types[1], the survey data from our sample underrepresents Commissioning organisations. This is evident from Table 2 as the 95% confidence interval for Commissioning organisations (6.4, 32.8%) does not contain the actual population percentage (45.2%).

Type	Frequency	Sample (%)	95% confidence interval	Actual (%)
Acute hospital services	18	50.0	(32.9, 67.1)	33.2
Commissioning	6	16.7	(6.4, 32.8)	45.2
Mental health / Learning disabilities	5	13.9	(4.7, 29.5)	11.8
Other	7	19.4	(8.2, 36.0)	9.8
Total	36	100.0		100.0

Table 2. Frequency of respondents by organisation type.

The main results from the survey are presented below in four commonly occurring themes identified from the analysis. To provide context and aid interpretation of the findings some specific analyses of the previously used GCC tool (mainly relating to its structural features rather than content) are also presented.

Theme 1 - Assessment needs to be tailored to organisation or sector

The most common issue in completing the GCC tool was identified as lack of relevance to organisation type (n=25, 69.4% of respondents). Although this was expressed to some degree by all organisation types it was most strongly expressed in the free text comments by the respondents representing commissioning bodies (the Clinical Commissioning Groups, CCGs):

> "*Lots of sections may not be relevant to certain organisations, such as CCGs, and we should be able to mark them as such."* (ID16).

> "*Many of the questions are not relevant to a commissioning organization. However, the questionnaire will not permit me to mark more than a few as 'Not applicable.*" (ID9).

> "*You should be able to answer more than 10% of questions as N/A - as more than 10% of the questions are N/A to our organisation as a CCG who does not own any estate*." (ID21).

This provided the first requirement for a future assessment tool i.e., to make the tool more relevant to organisations by providing options to tailor or adapt the assessment to different organisation types.

Theme 2 - Reduce complexity (fewer questions and a clearer scoring system)

The second most common issue in completing the GCC tool was identified as the length and complexity of the tool itself (n=24, 66.7% of respondents) with many similarly themed free-text comments, for example:

"*Any update of the GCC tool should be significantly shorter and less onerous than the existing tool."* (ID3).

"*There seemed to be a lot of duplication or similar questions in different sections*." (ID29).

The GCC comprised 441 statements against which organisations rated their compliance to each one by submitting a response from the following set: 'Yes', 'No' or 'Not applicable'. The 441 statements were grouped into modules such as 'Travel' and 'Procurement'. Within the modules the statements were organised into 6 sub-topics e.g. within the 'Procurement' module the sub-topics included 'Procurement skills', 'Procurement Process' etc. Within the sub-topics the statements were organised into 3 levels of achievement, 'Getting Started', 'Getting There' and 'Excellent'. The research team's analysis of the design of the GCC assessment tool concluded that the structure was too rigid and too complex. In some sub-topic areas there seemed to be no consistent link or obvious step-wise progression through the achievement levels. The three-tiered structure also created some repetition, and some of the 'Excellent' statements were deemed difficult to evidence.

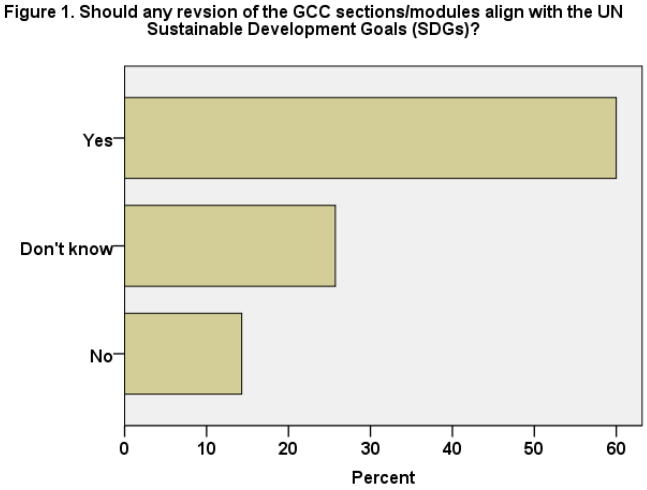
A related issue is the scoring system used in the GCC:

"*I find of the scoring that I have seen to be fairly subjective e.g. I have seen a score and then a plan for the following year that would seem to imply their initial scoring had been generous - if it is going to have some accreditation then there needs to be less of an opportunity for subjectivity and more guidance as to what is expected - also, please remove questions such as 'we are considered a leader in XXX' - as this is difficult to prove."* (ID31).

Whilst any scoring system is likely to be subjective (given that the majority of statements assess qualitative process measures rather than quantitative outcomes) the main feedback related to; the rigid format of the achievement levels, and the design of the GCC that assumed equal weighting of statement responses and sections in the scoring algorithm. This is connected to theme 1, that is the irrelevance of sections to some organisation types. To compound this issue, there was a system-wide rule to ensure that no more than 10% of responses could be marked as 'Not applicable'. In essence, the lack of adaptability of the tool to organisation type unreasonably limited total scores for some organisation types, or even dissuaded some from continuing to use the tool completely. In addition, given the binary 'Yes/No' scoring system employed, there was no option to record, or gain recognition for, work in progress. The reconceptualised tool would need to address these deficiencies.

Theme 3 – Support for aligning the assessment with the UN Sustainable Development Goals

Figure 1 shows that there was a clear majority support for a revised tool that aligned to the UN Sustainable Development Goals.



The following free text comment by one respondent illustrates a clear rationale for this development.

> "*There is a move within the private sector to publish their progress on the SDGs, the NHS should be doing the same and will possibly be mandated at some point in the future - it will also help reinforce that the SDGs apply to individual Trusts, not just governments*." (ID31).

Theme 4 – Finding the relevant information sources within organisations to complete the assessment is difficult

A large majority of respondents (n=23, 63.9% of respondents) noted that completion of the GCC was difficult as it covered a broad range of topics and it was not always clear within an organisation who held the relevant evidence or could give a particular assessment, e.g.

> *"Too many different members of staff involved in engagement, adaptation and models of care to get a comprehensive view of where the organisation is, and then how to develop plans to move forward."* (ID2).

> "*Finding the information and knowing which people in the organisation have responsibility for the area*." (ID3).

It is clear from these comments that the revised tool required more structure and guidance on how to complete the assessment. Additionally, it was noted that the Models of Care section was particularly difficult to complete.

Other survey findings

A number of other results from the survey are presented here. These acted to reaffirm our knowledge of the users and their main reasons for using the GCC assessment tool.

The main reasons reported by respondents for using the GCC tool was to assist with action planning and to identify ideas on how to improve sustainable development in their respective organisations. Many respondents saw the GCC as providing a planning framework with the emphasis on processes rather than needing a tool to collect outcome measures, e.g.

> "*Depending on where the organisation is in its SD journey there are several key ways it should be able to support; A) at the start of an organisations work in SD it should highlight to them the work already on going and highlight what is expected to develop an organisation that has truly embedded SD. B) provide an annual review of progress each year for organisations that have been working on SD over a series of years. C) highlight areas that require further improvement and require resource to improve the embedding of SD"*. (ID5).

In addition, it was deemed important that the tool should also generate summary reports for other stakeholders, e.g.

> [The information collected should] "*Be easily summarised for inclusion in quarterly Board level and Annual Trust Report"*. (ID14).

In the following section we discuss the main themes from the survey and focus on the ideas that have been implemented to address the issues identified by the survey respondents with the aim of producing a revised and improved assessment tool.

Discussion

Table 3 presents an overview of the four main themes identified from the survey and how these have been addressed in the revised tool. These are discussed in more detail below.

Theme identified with regards to the GCC assessment tool	**Solution implemented in the reconceptualised tool**
Assessment needs to be tailored to organisation or sector.	• Cross-cutting themes to aid assessment according to organisation type • Percentage of N/A responses permitted varies with organisation type and increased where appropriate.
Reduce complexity (fewer questions and a clearer scoring system).	Restructured tool with: • New modules • Cross-cutting themes • 'Process' orientated structure • Fewer assessment statements • Simplified scoring system.
Support for aligning the assessment with the UN Sustainable Development Goals.	• Mapping at the level of the UN SDGs.

Finding the relevant information sources within organisations to complete the assessment is difficult.	• Guidance provided on the relevant contacts for modules • Workshop to review the 'Models of Care' module and a new statement set generated.

Table 3. Summary of the main themes from the survey and solutions implemented in the reconceptualised assessment tool.

Assessment needs to be tailored to organisation or sector

Analysis of the statements in the GCC tool tend to support the argument that it has a bias in content towards organisations that deliver care on a large physical site e.g. an acute hospital provider. Over the past 10-15 years the prominence of the commissioner type organisation has grown with an increased recognition of how they can significantly contribute and progress sustainable development within health and care communities in England. Hence it was timely to review the GCC in this respect. To keep the assessment tool as generic and applicable to all as possible, the authors noted that many of the sections and statements could be interpreted in different ways according to organisation type. This approach was tested in workshops following the survey.

Prior to the work described here, the SDU had already developed a new proposition for segmenting the health sector footprint, an approach that had been presented to their Cross System Group and was subject to a separate user engagement approach. In line with this, we integrated these four cross-cutting themes into the reconceptualised assessment tool, namely 'Governance & Policy', 'Core responsibilities', 'Procurement and Supply Chain', and 'Working with Staff, Patients & Communities'. Two of these cross-cutting themes in particular 'Core responsibilities' and 'Procurement and Supply Chain' statements provide a framework of reference that can be easily understood from within both provider and commissioner type organisations. The assessment of statements can be made within the appropriate cross-cutting framework. This reduces the number of statements that organisations consider 'not applicable'. To augment the adaptability of the tool in this respect, the final version of the reconceptualised tool does permit a certain percentage of 'not applicable' responses but the percentage varies according to organisation type. By utilising these two methods the reconceptualised tool is more adaptable to different organisation types.

Reduce complexity (fewer questions and a clearer scoring system)

A number of different initiatives have been implemented with the aim of reducing the complexity of the GCC tool. First, the framework of modules was planned afresh to provide a more logical and contemporary structure. The new modules are shown in Table 4.

Module name	Number of statements to assess	Example statement

1. Corporate Approach	53	Responsibility and accountability for sustainable development is clear in our organisation (e.g. we have a named Board sustainability lead).
2. Asset Management & Utilities	23	We have ways of generating our own onsite renewable or ultra-low carbon energy (e.g. solar PV, solar heating, heat pumps or biomass/biogas/fuel cell CHP).
3. Travel and Logistics	32	We monitor the travel choices for our visitors, patients, users and clients and promote active travel and the use of public transport.
4. Adaptation	26	We carried out an assessment of flood risk of our estate, access routes and supporting infrastructure (e.g. utilities, IT and supplies) and workforce based on current and future projected climate conditions.
5. Capital Projects	21	Responsibility for sustainable capital and refurbishment projects is clear in our organisation. The individual(s) are supported and have access to training.
6. Green Space & Biodiversity	23	We promote the health benefits of green space to our staff, patients and the wider community.
7. Sustainable Care Models	26	We have one or more specific case studies of care models that are holistically sustainable (clinically, socially, environmentally as well as financially).
8. Our People	21	We offer opportunities to build skills and experience (e.g. work placements, volunteering and apprenticeships).
9. Sustainable Use of Resources	24	Our approach is leading to a continual reduction in our levels of waste, relative to the size of our organisation.
10. Carbon / Greenhouse gases.	37	We are on course to achieve our carbon reduction target as per the Climate Change Act 2008 or similarly aligned carbon target.

Table 4. List of modules within the reconceptualised assessment tool.

The statements in the modules were reviewed by subject experts and the final set agreed by the authors.

Secondly, the tiered structure of the 3 levels of achievement, 'Getting Started', 'Getting There' and 'Excellent' was removed as this was reported as a main source of complexity. In its place a 'process' orientated structure of progression is introduced within each module. The new statements were developed to give a consistent and structured approach with statements spread over the following categories; Measure/Assess, Plan/targets, Means to achieve the targets, Engagement/Cooperation with stakeholders, Communication internally and externally, and Outcome/Accreditation.

Thirdly, we reduced the number of statements from 441 to 274 (approximately a 37.9% reduction).

Finally, we simplified the scoring system. This was partly achieved by removing the 3 levels of achievement noted above. In addition, the new scoring system simply assigns a value of 3 for achievement of a statement, a value of 1 for 'In progress' and a zero for non-achievement.

Support for aligning the assessment with the UN Sustainable Development Goals

There was clear support for this development. While there are very specific targets within each of the UN SDGs the authors dismissed the idea of a detailed mapping exercise between the assessment tool statements and individual quantitative targets as too onerous and complex. In addition, it would obstruct the focus on planning and processes that the tool is designed to facilitate. Instead, each statement was mapped to one or more of the 17 top-level UN sustainable development goals using the targets to define the best match. For example, the assessment tool statement 'We have set a local carbon reduction target for business mileage emissions, which is aligned to/or exceed the Climate Change Act 2020 target' was aligned as follows:

- Primary mapping to UN SDG 13 'Climate Change'
- Secondary mapping to SDG 12 'Responsible Consumption and Production'
- Tertiary mapping to SDG 11 'Sustainable Cities and Communities'.

To summarise an organisation's progress against the SDGs a high level, qualitative approach was implemented. Hence, organisations assessing compliance beyond a lower threshold percentage of statements (and therefore SDGs) would receive summary feedback: 'Your organisation is starting to contribute to these SDGs at a local level (list of SDGs)' and those assessing compliance beyond a higher threshold percentage of statements (and therefore SDGs) would receive feedback as 'Your organisation is clearly contributing to these SDGs at a local level (list of SDGs)'. This feedback operates at both individual module and overall assessment levels of the tool.

A future iteration of the assessment tool could revisit this re-alignment with SDGs following evaluation.

Finding the relevant information sources within organisations

A review of the modules and statements by subject experts and discussion within workshops aimed to make the assessment easier to achieve for organisations. One specific expert workshop produced the statements for the new Sustainable Care Models (formerly Models of Care) module as this had been identified as one of the most difficult sections to complete in the GCC tool. In addition, for the live online system the authors have suggested typical job roles that might take a lead on evidence collection and assessment for specific modules or for the cross-cutting themes within modules.

Other developments

The reconceptualised tool is known as the Sustainable Development Assessment Tool (SDAT) [Accessed 9 May 2018] and is openly available online to all organisations.

The new assessment tool has benefitted from an online refresh and improved reporting tools. As an example, if users choose to participate in benchmarking, the system produces a dashboard or scorecard style report.

Self-assessment tools are commonly designed to aid continuous/quality improvement in organisations. They have the potential to offer a number of functions, for example: the identification of organisational strengths, and areas for improvements; a basis for planning improvements; opportunities for benchmarking performance with others or class-leading standards; the integration of quality management principles into everyday practice; and to generate organisational learning.[15]

One of the most commonly used and studied quality management tools is the European Foundation For Quality Management (EFQM) Excellence model [accessed 9 May 2018). This is a general quality improvement model and one not exclusively designed for sustainable development improvements. However, it is worth exploring some of the key principles on which it is designed and utilised. This will provide some context to the self-assessment approach to sustainable development described here.

The EFQM is based on core concepts e.g. people, partnerships and resources, integrated into a single model. The generic nature of the core concepts means that it has been successfully applied across a wide variety of organisations regardless of size, sector (public/private) or maturity. In addition, there is reasonable evidence to show that employment of the EFQM leads to improved operational performance.[16] Based on the informed design process that we have employed in the development of SDAT, including generic core modules, we are confident that a wide range of health and care organisations will be able to complete self-assessments using the tool.

Some organisations have chosen to modify the EFQM, usually to make it simpler.[17] However, the main disadvantage of modification is that results can no longer be benchmarked with external organisations that continue to use the original, unmodified tool. This is possibly an oversight by organisations that do modify common self-assessment tools, as benchmarking has been shown to be an important driver in quality improvement initiatives.[18] An important component of SDAT is the facility for organisations to benchmark their scores.

Conclusions

User and expert involvement has facilitated an informed approach to a reconceptualisation and improved sustainable assessment tool for health and care settings. The tool has been renamed as 'Sustainable Development Assessment Tool (SDAT)' and is now more applicable to different organisation types, has a clearer structure and scoring system, and improved online functionality. The newly introduced 'process' oriented structure of progression, the cross-cutting themes and the suggested typical roles as leads for improvements offer more guidance and support to existing and new users of the SDAT. Alignment of the tool to the UN' Sustainable Development Goals gives it an

element of 'future proofing' and provides an opportunity for health and care organisations to demonstrate accountability and progress against the UN's set of transformational goals. Several modules within the SDAT could be easily adapted to other public services and could increase the contributions of the public sector as a whole.

Conflict of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Funding Acknowledgement

This work was support by the Sustainable Development Unit.

Ethical Approval

The research was approved by the School of Business, Law and Social Sciences' College Research Ethics Committee at XX.

Informed consent was obtained from all individual participants included in the study.

References

1. NHS Confederation. (2017). *Key statistics on the NHS* [online]. Available at: http://www.nhsconfed.org/resources/key-statistics-on-the-nhs [Accessed 9 May 2018].

2. Pencheon, D. (2014). *Sustainable healthcare: the NHS launches a new strategy* [online]. Available at https://www.theguardian.com/sustainable-business/blog/nhs-sustainable-healthcare-strategy [Accessed 9 May 2018].

3. National Audit Office (2016). *Financial Sustainability of the NHS* [online]. Available at https://www.nao.org.uk/report/financial-sustainability-of-the-nhs/ [Accessed 9 May 2018].

4. Sustainable Development Unit (2017). *Sustainable Development Strategy for the Health and Social Care System 2014 – 2020*. Cambridge: The Sustainable Development Unit. Available at: http://www.sduhealth.org.uk/policy-strategy/engagement-resources.aspx [Accessed 9 May 2018].

5. Sustainable Development Unit (2017). *Governance on sustainability: Statutory and Policy Drivers*. Cambridge: The Sustainable Development Unit. Available at: http://www.sduhealth.org.uk/policy-strategy/engagement-resources.aspx [Accessed 9 May 2018].

6. Sustainable Development Unit (2017). *Sustainable development in the health and care system:Health Check 2017*. Cambridge: The Sustainable Development Unit. Available at:

http://www.sduhealth.org.uk/policy-strategy/reporting/sustainable-development-in-health-and-care-report-2017.aspx [Accessed 9 May 2018].

7. Sustainable Development Unit (2018). *Sustainable development in the health and care system:Health Check 2018*. Cambridge: The Sustainable Development Unit. Available at: https://www.sduhealth.org.uk/policy-strategy/reporting/sustainable-development-in-health-and-care-report-2018.aspx [Accessed 9 May 2018].

8. Sharifi, A. and Murayama, A. (2013). A critical review of seven selected neighborhood sustainability assessment tools. *Environmental Impact Assessment Review,* 38, 73–87.

9. Lambrechts, W. (2015). The contribution of sustainability assessment to policy development in higher education. *Assessment & Evaluation in Higher Education*, 40:6, 801-816.

10. United Nations (2015). *Transforming our world: the 2030 Agenda for Sustainable Development* [online]. Available at: https://sustainabledevelopment.un.org/post2015/transformingourworld [Accessed 9 May 2018].

11. United Nations General Assembly (2014). *Open Working Group Proposal for Sustainable Development Goals (A/68/970)*; New York: United Nations.

12. Hajer, M., Nilsson, M. and Raworth, K. et al. (2015). Beyond Cockpit-ism: Four Insights to Enhance the Transformative Potential of the Sustainable Development Goals. *Sustainability*, 7:2, 1651-1660.

13. House of Commons Environmental Audit Committee (2017). *Sustainable Development Goals in the UK*. London: House of Commons.

14. Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage.

15. Balbaster Benavent, F., Cruz Ros, S. and Moreno-Luzon, M. (2005). A model of quality management self-assessment: an exploratory research, *International Journal of Quality & Reliability Management*, 22:5, 432-451.

16. Williams, R., Bertsch, B, Van Der Wiele, A., Van Iwaarden, J. & Dale, B. (2006). Self-Assessment Against Business Excellence Models: A Critique and Perspective, *Total Quality Management and Business Excellence*, 17:10, 1287-1300.

17. Samuelsson, P. and Lars-Erik Nilsson, L-E. (2002). Self-assessment practices in large organisations: Experiences from using the EFQM excellence model, *International Journal of Quality & Reliability Management*, 19:1, 10-23.

18. Cassell, C., Nadin, S. and Older Gray, M. (2001). The use and effectiveness of benchmarking in SMEs, *Benchmarking: An International Journal*, 8:3, 212-222.