Benefits of Digital Social Care Records

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Introduction

In July 2021, NHSX appointed Ipsos, together with the Institute of Public Care, and the Strategy Unit, to develop a benefits register for the Digitising Care Records Programme, who are overseeing the expansion of digital social care records (DSCR) in adult social care. It is intended that this benefits register will inform the process of capturing the benefits generated by the programme, helping to understand, measure and demonstrate the value of DSCR in the future.

To support this work, the Strategy Unit completed a document analysis and focused literature review of the existing evidence base relating to the potential benefits from replacing paper records with digital records in the delivery of social care. This built on recent work conducted by NHSX, and was designed to answer the following research questions:

1. What does the evidence tell us about what benefits of DSCR might occur?
    a. What is the nature of these benefits?

2. What does the evidence tell us about where the benefits of DSCR might occur?
    a. Which part(s) of the health and social care system are most likely to benefit? What is the size of this benefit?
    b. Which [other] stakeholders are most likely to benefit? What is the size of this benefit?

3. What does the evidence tell us about when the benefits of digital records in social care might occur?

4. What does the evidence tell us about how the benefits of digital social care records might occur?

    a. What are the barriers to achieving the stated benefits?

    b. What are the enablers to achieving these benefits?

5. What does the evidence tell us about how the benefits of DSCR should be measured and monitored?
    a. How have the benefits of digital records in health and social care settings been measured previously?
    b. What approaches to measurement have worked previously?
    c. What approaches have not worked previously?

Methodology

NHSX provided the team with relevant academic and grey literature documents for review. This included a literature review in two documents on the expected benefits of digitisation in social care conducted by NHSX in 2021 (NHSX unpublished, 2021a/2021b) as well as 45 other potentially

relevant documents. Searches were conducted to identify further relevant evidence, defined by an agreed research protocol, responding to the research questions.

Six electronic databases were searched using combinations of search terms: Medline, HMIC, Cochrane Library, NIHR Journals Library, Social Care Online, and ASSIA. Search terms included combinations of "digital social care record*", "digital care management[1]"; or "electronic record* (or database key word equivalents[2]) and "social care OR home care OR domiciliary care OR care home* OR nursing home*" and "benefit" to search each database through titles, abstracts, and keywords. In addition, Google and Google Scholar were searched using the same terms.

Grey literature searches were conducted across search aggregators and search engines which included NICE Evidence and TRIP. Additional searches were conducted on specific web sites including DHSC, NHS England and NHS Improvement, Social Care Institute for Excellence (SCIE), Skills for Care, Digital Social Care, LGA, ADASS, Iriss, Nuffield Trust, Kings Fund, and Health Foundation.

Both the supplied documents and search results were screened for inclusion against the same criteria. Resources were included if they were published in the English language; and published since 2012. Initial screening was limited to 2017 to keep literature contemporary however this yielded too few results so was expanded to 2012. Given the paucity of information identified about DSCR specifically in the UK (as previously identified by NHSX), any results relating to wider discussions of the benefits of digital technology or digital skills in adult social care were included, but only where digital care records or digital care management programmes were referenced in the document. The quality of evidence was not appraised, but sources were excluded where the methodology was unclear, or the subject matter was not related to DSCR or technology in adult social care. Supplementary search results which were duplicates of documents identified and provided by NHSX were excluded. Duplicates within the search results were also excluded.

A total of 284 documents were screened. This included 47 documents provided by NHSX and a further 237 documents identified through database and grey literature searching. Of these, 24 papers were included in the review. An additional five papers included in the NHSX literature review are cited after they were reviewed for specific detail.

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[1] Alternative terminology used to describe software which enables care providers to maintain records about individuals in their care.
[2] For example -HMIC uses the key term "electronic patient record" to categorise articles but does not use the term "digital care record".

Findings

What are the (potential) benefits of DSCR?

It is well established that social care providers have been slower to adopt digital methods to record observations about individuals in their care than other health and care professionals working in health care or social work settings (NHSX unpublished, 2021a). While recent evidence suggests that the proportion of English social care providers using digital care planning software may have increased since the COVID-19 pandemic, it is still not widespread. 53% of 418 organisations reported that they now use it compared with 47% prior to COVID (Skills for Care, 2021a). It is therefore perhaps not surprising that this review did not identify a large, high-quality evidence base about the benefits of DSCR in UK settings.

The scope of the rapid review of the benefits of digitisation of social care records since 2010 conducted by NHSX (unpublished, 2021a/2021b[3]) included a variety of digital/electronic record types used in international care settings. These included those described as electronic health, medical or patient records; health information exchange systems; health information technology; and both integrated and shared care records (the latter two to be used by health and care professionals in different settings). From the academic literature the authors identified a variety of benefits which are associated with these types of paperless records used in nursing, residential, long-term care or home settings. These benefits were mirrored in the additional secondary and primary evidence (largely UK-focused) identified in the supplementary searches. Following the NHSX review's classification scheme, these can be grouped into different domains below.

Efficiency and productivity

- Rapid reviews of evidence reached mixed conclusions on efficiency benefits. Skills for Care's rapid review of technology adoption in social care (2021b) found that digital systems are more time efficient. Primary observational or implementation analysis studies reviewed by NHSX (unpublished, 2021a/2021b) identified that fewer steps and less time is needed to complete care tasks when using electronic records. However, systematic and literature reviews identified by NHSX had conflicting findings: either there was a reduction in time needed to spend on documentation, no change, or increased time after introduction of digital care records in different international settings. They also identified studies showing time inefficiencies from technical issues and therefore reached no firm conclusion on benefits realised.

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[3] Draft provided in two documents, methodology and summary in one (2021a), more detailed findings in another (2021b)

- Surveys and interviews with UK care provider staff (senior and frontline) found staff perceive there to be time saving benefits (Birdie, 2021; Brittain, 2020; Curtis and Brooks, 2020; SCIE 2019; eHealth Cluster, 2018).

- For home care staff, there can be reduction in time needed for travelling back to office to update paper records or take paper records back to office for bulk record update (Skills for Care, 2021b; Birdie, 2021; eHealth Cluster, 2018).

- Care workers participating in an evaluation of PASSsystem[4] felt it enabled them to better prepare for care visits and plan and organise their day (SCIE, 2019).

- Duplicate processes (paper records maintained in parallel) are however highlighted in UK interview and survey projects about digital care planning (SCIE, 2019; eHealth Cluster, 2018).

Quality of documentation

- There was almost universal consensus across the literature, including rapid reviews of peer reviewed studies, that DSCR are more consistent in their accuracy and legibility than paper records; they are more complete and contain more detail than previous records (NHSX unpublished, 2021a/2021b; Digital Social Care, 2020; SCIE, 2019; eHealth Cluster, 2018).

- Multiple case studies of different digital care management systems implemented by care home, home care, and residential care providers (e.g. Handsale Homes, Jewish Care, Respect Care Services and Liam House) that are included in Digital Social Care's Success Stories (accessible online only) highlight that they have seen improved accuracy and more detailed record keeping (Digital Social Care, n.d. a-d).

- A minority of reports indicated some caution against assuming that improved accuracy, consistency and detail are guaranteed – human error is still possible (and occurring) – and are reliant on care workers completing recording in real-time (NHSX unpublished, 2021a/ 2021b; SCIE 2019; eHealth Cluster, 2018).

Quality of care

- There is widespread agreement or perception among staff (managers and frontline) that DSCR or digital care planning programmes improve, or have the potential to improve, the quality of care delivered by staff and received by service users (NHSX unpublished, 2021a/2021b; Digital Social Care, 2020; Brittain, 2020; Curtis and Brooks, 2020; SCIE, 2019; eHealth Cluster, 2018).

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[4] Care management platform being implemented in the UK, information available at:
https://www.everylifetechnologies.com/pass/

- Identified mechanisms for improving quality of care include ease of access and ability to update records; real time monitoring (leading to more responsive, quicker care decisions); greater/more detailed visibility of service user needs and outcome trends (references as above).

- Systems which are not solely digital recordkeeping programmes, but which also provide alerts to changes in behaviour or outcomes, work in conjunction with medication monitoring systems (e.g. eMAR) or provide reminders about tasks were considered particularly valuable by staff interviewed or surveyed (Digital Social Care, 2020; eHealth Cluster, 2018).

- Some care providers perceive that DSCR or digital care management systems can support them to either improve their Care Quality Commission (CQC) rating (e.g. 34% of 106 care providers surveyed by Birdie technology company in 2020) or meet, and show they deliver care at, the regulatory standard (79% care managers implementing PASS) (SCIE, 2019; Digital Social Care, 2020).

Quality of care and quality of life for service users and families

- Access to records, if enabled via electronic devices or apps, facilitates the involvement of service users and families in care, with oversight of daily activities and care provided and improved communication between relatives and care providers (Skills for Care, 2021; Digital Social Care, 2020; SCIE, 2019).

- If home care workers have the same access to data and records as care workers based in residential or nursing care facilities, this can make support at home more feasible for some people (Skills for Care, 2021).

- NHSX (unpublished, 2021a/2021b) identified a systematic review of electronic health record usage in long-term care showing improvement in health outcomes for residents (e.g. numbers of infections, pain levels, ability to carry out activities of daily living (ADL); urinary tract infections (UTI) and catheter related incidents); but these benefits are dependent on the functionality of digital social care record systems as not all enable health to be monitored.

Risk management and safeguarding

- Rapid reviews agree that including health monitoring in electronic or digital record systems in different social care settings can reduce the risks to people receiving care and support the provision of safer care (Skills for Care, 2021; NHSX unpublished, 2021a/2021b).

- The real-time (or near real-time) access highlighted as a benefit above and the quicker access to information this gives staff was highlighted as particularly important for risk management. Staff and/or management can more easily and more quickly see whether records indicate issues of concern (including trends in health or wellbeing symptoms); errors in care provided

(including medication errors) or identify if information is missing (Curtis and Brooks, 2020; CQC, 2020; SCIE, 2019).

- Some of the other ways reports and studies indicated digital care records or care planning programmes can improve safety are records are less likely to go missing; functionality for more detailed notes, which provide better insights; the inclusion of templates that guide staff through required observations; and easier auditing processes (Birdie, 2021; Digital Social Care, 2020; SCIE, 2019; eHealth Cluster, 2018).

- Senior decision makers described that digital care records have either led to fewer complaints or highlighted how digital records make the investigation of complaints easier (Digital Social Care, 2020).

Collaboration and communication with others

- By enabling real-time and more detailed recordkeeping, DSCR are seen as essential for improving communication in multiple directions. This includes communication between staff and colleagues (e.g. different shifts in care homes); staff and managers; staff and service users and/or relatives; care staff and those working in other health and care settings (though this requires interoperability with other systems, e.g. shared or summary care records) (Skills for Care, 2021; NHSX unpublished, 2021a/ 2021b; Brittain, 2020; Digital Social Care, 2020; SCIE, 2019; eHealth Cluster, 2018).

Workforce outcomes

There were mixed findings on the impact of digital care records on workforce outcomes:

- A UK study of care workers' levels of engagement, among those who have adopted digital care planning processes, found that there was improved staff morale across the 121 care workers interviewed. Staff felt more able to come forward with concerns or issues and workers described feeling more motivated or enthusiastic (Brittain, 2020).

- There is evidence that working for a digital-focused organisation increased staff sense of engagement alongside an increased sense of job importance due to new skills – and that this can help with nurse recruitment and retention. However, it is likely to depend on levels of job satisfaction prior to implementation – a UK case study of joint working between primary (nursing) care and adult social care observed that job satisfaction was high before and after implementation of a shared electronic record (Chester et al., 2021 cited in NHSX unpublished, 2021a/2021b).

Financial outcomes

- NHSX (unpublished, 2021a/ 2021b) found that even in the peer-reviewed literature there was largely interviewee perception rather than objective measurement of cost benefits. They did

identify some UK projects that defined variables contributing to quantifiable benefits (e.g. cost savings) but were not necessarily transparent on the methodology (Birdie, 2021; Bristol, North Somerset and South Gloucestershire CCG, 2019; SCIE, 2019), meaning firm conclusions cannot be reached. Cost savings are perceived to be related to several benefits already identified above; many related to health resource use (e.g. better monitoring and information sharing leading to reduced need for admissions to acute care or contact primary care), or from reductions in the time required to complete documentation.

Which part(s) of the health and social care system (and other stakeholders) are most likely to benefit? What is the size of this benefit for those beneficiaries?

As indicated by the descriptions of the types of benefits, the evidence predominantly points to the benefits of implementation of DSCR for: care provider organisations and their staff; individuals in receipt of care and their relatives or friends; other health and care professionals supporting those individuals or working with the care provider.

Figure 1.1 below describes the different groups that the evidence indicates can benefit from the implementation of DSCR and examples of the benefits they have been found to experience. The evidence scan did not identify research which provided robust evidence of the size of the benefit in terms of quantifiable measures for each group.

Figure 1.1 Potential beneficiary groups from DSCR

Care provider organisations
- Supports meeting of CQC objectives (Birdie, 2021; Digital Social Care, 2020; SCIE, 2019)
- Efficiences in time and resource available for caring duties (Birdie, 2021; Skills for Care, 2021b; NHSX unpublished, 2021a/2021b; Brittain, 2020; Curtis and Brooks, 2020; SCIE, 2019; eHealth Cluster, 2018)
- Better risk management - reduced errors and risks to service users (Birdie, 2021; Skills for Care, 2021b; NHSX unpublished, 2021a/2021b; Brittain, 2020; Curtis and Brooks, 2020; SCIE, 2019; eHealth Cluster, 2018)
- Improved quality (if still subject to human error and duplication) in documentation (NHSX unpublished, 2021a/2021b; Brittain, 2020; Digital Social Care, 2020; Digital Social Care, n.d. a-d; SCIE, 2019; eHealth Cluster, 2018).

Care provider workforce
- Better able to prepare for and organise care visits (SCIE, 2019)
- (Mixed evidence of) more time available for providing care (NHS unpublished, 2021a/2021b; Brittain, 2020; Digital Social Care, 2020)
- (Ongoing) development of digital skills (NHSX unpublished, 2021a/2021b; Digital Social Care, 2020)
- Can provide better quality care through real-time understanding of needs of service users (NHSX unpublished, 2021a/2021b; Digital Social Care, 2020; Brittain, 2020; Curtis and Brooks, 2020; SCIE, 2019; eHealth Cluster, 2018)
- Improved morale among staff (Brittain, 2020; Digital Social Care, 2020).

Service users and their friends and family
- Efficiency benefits can mean more time available for care activities from staff (NHSX unpublished, 2021a/2021b; Birdie, 2021)
- Family can be more involved in care (if given easy access to record) (Skills for Care, 2021; Digital Social Care, 2020; SCIE, 2019)
- Potentially supports home care as an option as opposed to residential care, increasing options available to match service user preferences (Skills for Care, 2021b)
- Potential improvement in health outcomes (if linked to system modules enabling monitoring of symptoms) (NHSX unpublished, 2021a/2021b).

Other health and care professionals
- Improved communication between shifts and with professionals in other organisations (Skills for Care, 2021; NHSX unpublished 2021a/2021b; Brittain, 2020; Digital Social Care, 2020; SCIE, 2019; eHealth Cluster, 2018)
- Reduction in calls to GP or pharmacist about medication (NHSX unpublished, 2021a/2021b; BNSSG, 2019)
- Potential efficiencies in acute care during discharge if granted access to existing care plan-reliant on integration with shared care records (BNSSG, 2019).

Wider society
- Aligns with Long Term Plan ambitions (BNSSG, 2019)
- Supporting research on care recipients in care homes (dependent on data sharing agreements) (Digital Social Care, 2020).

When might the benefits occur?

There was very limited evidence identified relating to the time period in which benefits of using DSCR might emerge. NHSX, in the longitudinal work by Munyisia et al (2012, 2013, 2014; cited in NHSX, unpublished 2021b) found that in Australian nursing homes, staff efficiencies (e.g. reductions in time spent on documentation) increased in the initial period following adoption (after three months), but then returned to pre-implementation levels between 12 and 24 months afterwards. Outside of these studies, the time period in which benefits are realised was rarely mentioned beyond general observations in an evaluation of the PASSsystem in Liverpool (eHealth Cluster, 2018) which found that it may take time for benefits to be fully experienced, linked to the time providers need to embed changes in wider processes and working practices.

What enables or is a barrier to achieving benefits from DSCR?

Factors which enable or are barriers to the use of DSCR or digital care management systems were frequently discussed in reports from UK-based digital care planning projects and reports about the adoption of technology in social care in the UK (which mention digital care planning technology but do not restrict their view to this type of technology only). Studies about digital/electronic care planning specifically identified enablers and barriers which echo those identified relating to technology in general (Institute for Public Care, 2021; NHSX, 2020b). As enabling factors and barriers were often discussed in conjunction (although barriers more commonly identified) and in some instances mirror each other (e.g. leadership v lack of leadership) a summary of the factors identified is presented in Table 1.1 below. Where the factors identified mirrored each other, this has been reflected in the layout of the table, but not all factors listed are linked.

Table 1.1   Factors enabling or preventing realisation of benefits of DSCR

Enabling factors	Barriers
Strategic drive	
Leadership at senior or other levels (digital champions) building buy-in and enthusiasm from other staff (Institute for Public Care, 2021; Skills for Care, 2021a/b; NHSX, 2020)	**Lack of leadership** at organisational level securing buy-in from staff (Institute for Public Care, 2021; Skills for Care, 2021b)
The pandemic has demonstrated importance of connectivity, which has acted as an **impetus** for change (Institute for Public Care, 2021)	
Resources	
Organisational knowledge or individual staff with understanding, interest or enthusiasm for technological change (also digital champions) (Skills for Care, 2021a/b)	**Insufficient management/staff with the skills, knowledge** and/or **capacity** to identify appropriate solution for their organisation (Institute for Public Care, 2021; NHS Digital, 2021; Skills for Care, 2021b)
Multiple staff or managers with **right knowledge and skillset** to oversee implementation (not always reliant on individuals) (Institute for Public Care, 2021; Skills for Care, 2021a; CQC, 2020; Digital Social Care, 2020)	**Lack of (knowledge about) sources of impartial advice** on benefits of particular solutions (NHS Digital, 2021; Skills for Care, 2021a; Digital Social Care, 2020; Norfolk County Council, 2020)
Resource availability to support implementation and maintenance (including costs at outset and ongoing) – sometimes linked in literature to organisational size but link isn't strong (Skills for Care, 2021b)	**Costs at outset (significant) and ongoing** (e.g. training, worsened by staff churn) – issues with licence fees and lengths of contract versus budgets. (Birdie, 2021; NHS Digital, 2021; Institute for Public Care, 2021; NHSX, 2020; Norfolk County Council, 2020; eHealth Cluster, 2018)
Sufficient time given/available to **staff to train** at outset and ongoing, combined with some level of monitoring to ensure training completed (Institute for Public Care, 2021; Skills for Care,	**Time and effort** required to research options and transfer records to digital system (Skills for Care, 2021a)

Enabling factors	Barriers
2021b; Brittain, 2020; Digital Social Care, 2020; NHSX, 2020)	
Infrastructure – appropriate internet connection, network speed and right equipment purchased; staff able to use work mobiles as hotspots in service user homes if required (ADASS, 2021; Skills for Care, 2021b)	**Infrastructure** - poor Wi-Fi/broadband/mobile phone signal (in care home or homes of service users) (ADASS, 2021; Institute for Public Care, 2021; NHS Digital, 2021; Digital Social Care, 2020; Norfolk County Council, 2020)
Recruitment pool with sufficient technological skills or attitude towards technology (not uniform across UK) (Skills for Care, 2021a/b; Brittain, 2020; Digital Social Care, 2020)	**Variable staff technological skill levels** – also among potential recruits (Institute for Public Care, 2021; Skills for Care, 2021b; NHS Digital, 2021; Norfolk County Council, 2020; Brittain, 2020)
Stakeholder support	
Involving residents or service users with selection of solution (helps with staff buy-in) (CQC, 2020; NHSX, 2020)	**Care recipients and/or unpaid carers may not like DSCR**– don't like staff being on devices, don't like using devices themselves. (Curtis and Brooks, 2020)
(National and local) governmental support for procurement and/or implementation – funding, advice, guidance (not wanted by all providers) (NHS Digital, 2021; Institute for Public Care, 2021; Skills for Care, 2021a/b; NHSX, 2020)	**Staff concerns** about dehumanisation of care or decreased human interaction (attention required to complete documentation) (Skills for Care, 2021b; Curtis and Brooks, 2020; Digital Social Care, 2020; Norfolk County Council, 2020)
Interpreter/translation stage – **getting developers and providers to understand each other's language** (Institute for Public Care, 2021; NHSX, 2020; eHealth Cluster,2018)	**Management and/or staff do not prioritise** or accept need for change to paperless record or care management system (Birdie, 2021; Institute for Public Care, 2021; Norfolk County Council, 2020)
Regulator support e.g. CQC interim guidance on digital records (Digital Social Care, 2020; NHSX, 2020)	**Demand, or providers' perception of demand, for paper records from inspectors** or other health and care professionals (Institute for Public Care, 2021; Digital Social Care, 2020; SCIE, 2019; eHealth Cluster, 2018)
Functionality	
Holistic procurement for organisation or at system level – solutions chosen based on **interoperability** with other current and future systems (combined with provider vision for the future) (ADASS, 2021; Skills for Care, 2021b; Digital Social Care, 2020; eHealth Cluster, 2018)	**Lack of interoperability** of system with other internal or local health and care systems – market full of competitors not integrating or open to integrating solutions (ADASS, 2021; NHS Digital, 2021; Institute for Public Care, 2021; Digital Social Care, 2020; NHSX, 2020)
Simple and graphic functionality with visual clues that make sense (NHS Digital, 2021; Skills for Care, 2021a; SCIE, 2019)	Perception that 'quicker' system for recording will **increase the amount of detail required** (Norfolk County Council, 2020; Baines et al., 2014)
Accessibility of technology (and training) via multiple types of devices e.g. desktop and mobile supports usage by different types of care workers in different types of setting (Skills for Care, 2021b)	Issues with functionality and incompatibility with **existing workflow processes** – harder for home care staff in service user homes (Skills for Care, 2021b; NHS Digital, 2021; Digital Social Care, 2020)
Evidence of benefits after implementation (Skills for Care, 2021b; NHSX, 2020)	

Enabling factors	Barriers
Information governance	
Careful management of access to data (e.g. individualised logins) and **appointing data security champions** within care providers who can oversee any data security issues relating to all digital technologies being implemented by the organisation (Curtis & Brooks, 2020)	**Data protection concerns** of management, staff, service users and relatives – relating to information transfer or bureaucracy (ADASS, 2021; Institute for Public Care, 2021; Skills for Care, 2021a/b)

How have benefits of DSCR been measured? What works or doesn't work in measurement?

There was limited evidence indicating how the benefits of DSCR have previously been measured or might be measured robustly in the future, particularly in the UK. The majority of identified evidence relied on staff perceptions and experiences to indicate benefits and outcomes. This was demonstrated in responses to survey questions or interview discussions. This also applied to financial benefits, with survey respondents describing cost savings rather than a demonstration of cost savings through quantitative analysis methods (Birdie, 2021). In the same survey (by a care management software company), an average estimate of time saved indicated by survey respondents (seven hours a week, 30 hours a month) was calculated by the report authors, based on a £21,000 FTE Care Coordinator salary. This was calculated to indicate savings of £300 to £400 a month. As an average, this does not provide or describe the cost savings experienced by individual care providers when using DSCR, which is valuable intelligence for others when deciding whether to implement DSCR (a facilitating factor for implementation reported in the stakeholder engagement work by NHSX in 2020). Although not a criticism described in the literature, based on the evidence base so far, it appears that this approach (describing perceived benefits) relies on the commissioning of surveys or interview projects by individual providers or ICS.

A report from a Social Care Digital Pathway project in Bristol and North Somerset involving the Connecting Care shared care record system described data indicators which might contribute to measuring the benefits forecast (e.g. time spent seeking information, number of admissions due to adverse drug reactions) but not specifically how they would be measured or by whom (Bristol, North Somerset and South Gloucestershire CCG, 2019).

An economic evaluation methodology adopted in the national evaluation of PASSsystem (SCIE, 2019) focuses on the use of health and care resources by service users, assigning a financial value to levels of usage (number of unplanned hospital admissions and number of days; number of ambulance call outs; number of GP visits; use of respite care; use of/transfer into residential care; avoidance of delayed discharge from hospital). A bespoke tool was created to calculate potential

savings based on national average unit costs[5] into which six care providers were asked to collect and input data. The six variables were chosen based on their quantifiable nature, ease of collection by care providers and because the national average unit cost for each is available in the public domain. The evaluation team highlight that a methodology which would require unit costs to be calculated specifically for the evaluation would have required a larger and more complex research study. However, at the time of this document review, their phase of the evaluation had not yet reported (due to the pandemic) so it is not clear whether these assumptions about ease of data collection were/are correct.

The NHSX rapid review included a cross-sectional study of the impact of electronic health records (EHR) in US nursing homes which, due to the existence of US minimum datasets (MDS) for care facilities was able to look at changes in health and wellbeing outcomes among residents of homes using the EHR and those that don't (Kruse et al. 2017, Bjarnadottir et al. 2017, cited in NHSX unpublished 2021a; 2021b). The Medicare/Medicaid and CASPER (Certification and Survey Provider Enhanced Reporting) MDS include indicators such as percentage of residents with increase of support needed with activities of daily living, percentage of residents with increased pain and percentage of residents with depressive symptoms, amongst others. There is currently an NIHR-funded project underway to develop the UK equivalent of this MDS (the Developing research resources And minimum data set for Care Homes' Adoption and use (the DACHA study)) (DHSC, 2021; NIHR, 2019) which began their work in 2019.

The Adult Social Care Outcomes Framework (ASCOF) is used by NHS Digital in England to compile data from multiple national datasets describing how care and support services are delivering outcomes for people using adult social care services. Although these datasets relate to outcomes described as potential benefits of implementation of DSCR (e.g. quality of life; delayed transfers of care; satisfaction with care and support) the unit of measurement is local authority rather than individual provider; this may make it challenging to identify and demonstrate benefits in the way that the evidence base has set out how different stakeholders experience them.

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[5] Sourced from New Economy Unit Cost database found at: https://golab.bsg.ox.ac.uk/knowledge-bank/resources/unit-cost-database/

Conclusions

Although the evidence base about DSCR specifically in the UK (as opposed to wider technology use in adult social care) is limited – there are some clear overlaps with findings about other digital solutions and similar types of records used internationally, or in more health-focused settings.

The number and type of ways different audiences have or will benefit from DSCR, ranging from the macro- to the micro-level, provides some key insights with which to engage the care provider sector. Benefits (which can all be understood to apply to organisations, workers, and service users) can be categorised into:

- **Efficiency and productivity:** strong perception and evidence that DSCR can reduce time needed for paperwork completion and support better planning for the delivery of care; particularly valuable for home care workers, potentially making more time available for care. Some systematic review evidence cautions that this is not a blanket benefit or may not happen for every worker.
- **Quality of documentation:** almost unanimous consensus across the literature that DSCR are more consistent in their accuracy and legibility, are more complete and include more detail than paper records (it is emphasised that some element of human error should still be expected though).
- **Quality of care:** through ease of access, ability to update records quickly and in (or near) real-time, and ability to monitor service users' needs and outcomes in more detail, there is widespread agreement and/or perception that DSCR (will) improve the quality of care. This may be particularly useful for supporting providers to meet their CQC requirements.
- **Quality of care and quality of life for service users and families:** DSCR systems which work with health outcome monitoring modules (including electronic medication reminder alerts) may support early intervention and improve overall health outcomes for service users, as well as supporting them and their informal carers to be more involved in their care and potentially increasing their options for place of care.
- **Risk management and safeguarding:** acknowledged as a significant benefit for all, the DSCR real time monitoring and other functionality (e.g. templates encouraging detailed and standardised recordkeeping) was considered particularly valuable for flagging issues of concern, errors or missing information, and therefore improving the safety of care.
- **Collaboration and communication:** By enabling real-time and more detailed recordkeeping, DSCR are seen as essential for improving communication in multiple directions: between staff and colleagues (e.g. different shifts in care homes); staff and managers; staff and service users and/or relatives; care staff and those working in other health and care settings. This benefits these other professionals in the same way that it benefits the social care provider organisations, staff and service users.

- **Workforce outcomes:** there is mixed evidence of improved morale, engagement, enthusiasm and job satisfaction among care workers working with DSCR – but in organisations with high existing workforce engagement this may be harder to demonstrate.
- **Financial outcomes:** quantifiable cost savings identified by robust economic evaluation methods are not widespread although the evaluation of the PASSsystem by SCIE may provide this when it reports. Perceptions of cost savings cited in the evidence included those related to health resource use (e.g. better monitoring and information sharing leading to reduced need for admissions to acute care or contact primary care), or from reductions in the time required to complete documentation.

However, it is important to understand the multiple barriers and concerns raised by the sector about their ability to implement DSCR (often focused on cost, but also wider resource, capacity and infrastructure issues). Particular barriers cited included: lack of leadership and knowledge (to champion, research supplier or implement DSCR switchover, including engaging staff) at different levels of seniority within organisations; variations in digital skills and views on prioritisation of digital change among staff; infrastructure issues (e.g. narrow broadband width; poor Wi-Fi capabilities and mobile signal); and lack of resources (money, time and staff) to move from paper to digital records. Concerns about costs and financial stability, interoperability (between competitor suppliers and systems for other organisations) and the dehumanisation of care among staff, service users and families (with too much attention given to technology rather than a person) should also be engaged with.

Leadership and attitudes to digital change at different levels within organisation, talent management and skills, enthusiasm and interest in managing digital change projects appear to be key in overcoming these barriers or encouraging adoption within organisations. Support from national and local government and other health and social care professionals (including CQC inspectors) were indicated as important facilitators, either through funding, advice or guidance or in the case of other parts of the care system, by avoiding requesting paper or duplicate systems be used.

The literature is not extensive on how the benefits of DSCR can or should be measured, but datasets and collection methods are available which may support evaluation and monitoring activities at a local or national level. With the ongoing DACHA study working towards producing a national minimum data set for adult social care, this may become significantly simpler in the future.

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