

Evaluate Discharge to Assess Pathways

METRIC
DEVELOPMENT
REPORT
(FEBRUARY 2023)

Contents

Acknowledgements	2
Executive summary	3
Key findings	4
1.0 Policy context	4
2.0 Methods	7
2.1 Logic Model	9
3.0 Patients and carers' perspective - summary of findings	10
4.0 Place-based reports	10
5.0 Findings	11
5.1 Logic model	11
5.2 Data collection	13
5.3 Measures	14
Inputs	14
Activities	15
Outputs	15
Outcomes	16
Impacts	17
Context measures	17
Key National performance indicators	17
5.4 Measurement approaches	18
Measurement for improvement	18
Evaluation	20
6.0 Recommendations	21
7.0 Additional considerations	22
Capacity in the system to collect additional data	22
Integrated data	22
Impact of Primary care	23
Refinement of metrics	23
Population demographics	23
8.0 References	24
Appendix A	0

ACKNOWLEDGEMENTS

We would like to express our sincere thanks to the people in community, social and health care who took the time to take part.

This evaluation was funded by NHS England as part of the National Insights Priority Programme. It was conducted by the Kent, Surrey, Sussex Academic Health Science Network, Unity Insights and the Applied Research Collaboration Kent, Surrey, Sussex.

EXECUTIVE SUMMARY

Kent, Surrey and Sussex ICSs identified Discharge to Assess (D2A) as a key service change and priority which can contribute to system sustainability, improve flow and access, improve processes and outcomes, and support post-pandemic (and intra-pandemic) working. D2A was funded by the government during wave 1 of COVID-19 as a mechanism to reducing hospital stays and improving patients' assessment.

Across Kent, Surrey and Sussex (KSS), three Health and Care Partnerships (HCPs) were identified to act as case studies for evaluation in order to meet the aims of the overall project. East Sussex was chosen as one of those three and this report provides detail on the findings relating to this HCP only. This project had three aims:

- a) Evaluate the impacts, capacity, processes and barriers across primary, community, Voluntary, Community & Social Enterprise (VCSE) sector, and social care and other stakeholders
- b) Evaluate the experiences and outcomes of service users and informal carers
- c) Develop outcome and process measures as part of the evaluation for use in ongoing monitoring and management of the pathway

D2A uses discharge pathways 1 and 2 only, therefore service users discharged under pathway 0 and 3 were excluded.

This report presents a framework for the measurement of the D2A model, including analysis and recommendations on topics including data collection, theory of change (logic model), metrics, and measurement approaches.

As stated in the main KSS report, it is recommended that HCPs adopt the metrics for measurement of the outcomes from D2A. This is important as it will enable increased oversight of the D2A pathways and an improved understanding of the outcomes for services, service users, and carers, which is enhanced by appropriate comparison of services against historical data or with other HCPs.

The first step of the methodology for metric development involves setting the evidence base for the measurement framework. A review of the literature and datasets relating to the D2A programme is conducted, which is then combined with the evaluation of patient, carer, and staff feedback undertaken by the University of Kent D2A team and stakeholder engagement.

The second step is to provide a summary of the evaluation metrics for the implementation of a D2A model that could be used to evaluate the implementation of a D2A model, guidance for data collection, and recommended measurement approaches.

KEY FINDINGS

A measurement framework was developed for the D2A pathway based on information from the place-based and patient voice reports, existing health and social care datasets, a literature review, and stakeholder engagement. A logic model was created and corresponding measures which capture implementation and outcomes from the D2A pathway were identified.

The key findings of this report are as follows:

- There is currently no national standardised survey to understand patient and carer experiences after discharge. This is detrimental as improving the experience and outcomes for these individuals is a key aim of the D2A pathway. Currently, any patient and carer experience or outcome data is often not measured in relation to acute hospital discharge, or where it is measured it is inconsistent, which renders quality improvement and comparisons across patient groups and HCPs challenging to conduct.
- There is currently no centralised patient database for D2A patients, which inhibits the tracking of patients on the pathway and can harm efficient information sharing between organisations and stakeholders along the pathway. This prevents programme managers and multidisciplinary teams from engaging in effective quality improvement activity.
- Currently, there is no information source at a national scale that can be used to assess how D2A has been implemented in different regions for quality improvement purposes.

1.0 POLICY CONTEXT

Delayed hospital discharges are an increasing trend in the NHS. Longer stays in hospital can lead to worse health outcomes and heightened care needs, especially for older people. During a major incident, keeping acute beds free is essential and to assist with this in March 2020, during wave 1 of COVID-19, the government issued emergency funding up to August 2020 from NHS England for a new D2A programme. The funding covered the costs of post-discharge care for up to six weeks. While aspects of D2A had been in use in some areas prior to the COVID-19 pandemic, the policy issued in March 2020 put D2A at the centre of discharge processes for patients who required support to leave hospital for the first time. National guidance was revised in August 2020, and extra

funding was made available. While current policy remains the same D2A model ringfenced NHS funding for D2A was withdrawn in April 2022.

Two core assumptions stand at the heart of D2A:

1. reducing the time people spend in hospital is best for patients and for the NHS, as it increases the availability of beds in hospitals while improving people's health outcomes;
2. assessing patients in a suitable environment (e.g., people's home) is preferable to assessing them in hospital.

D2A is described as a flexible, complex and adaptive model that can and must be adapted to local needs and resources (i.e., NHS and local authorities' budget). It is underpinned by the following principles:

- **Home first** – supporting people to go back home (or previous place of residency) should be the default. Post-discharge care packages should also aim to aid people to be able to go back home where possible.
- **Person-centred care** – patients' needs should drive the process. People should be given options and support to be discharged to the right place and in a timely manner. Family and informal carers should also be involved in the process.
- **Effective assessment** – a 'light' assessment in hospital followed by a short period of rehabilitation and recuperation before a long-term care needs are assessed in the community (e.g., home or home care) when the actual level of care required can be more accurately assessed.
- **Information flow** – information should follow the person across services and should be easy to access, both from patients/family and health and care professionals.
- **Multi/cross disciplinary work** – build networks of services that focus on the person's needs instead of disciplinary boundaries. This encompasses planning, budgeting, delivering, monitoring and accountability.

To summarise, D2A aims to reduce the length of stay in hospital for patients medically fit for discharge and improve patient's assessment by moving the point of detailed assessment for ongoing care from the acute hospital into the community, with the funding allowing for a full assessment 4-6 weeks post discharge. It is based on the idea that discharge is a process and not a single event, and hence it requires co-ordination and co-operation across health and social care services and staff at a local level.

The D2A model is based on the following four pathways model, as depicted in Figure 1, for discharging people (HM Government, 2020):

- **Pathway 0:** Simple discharge – no additional support needed The patient is able to return to their normal life with no need for additional health and social care.
- **Pathway 1:** Home with additional support. The patient is able to return home but will require support. This could be either or both of: a. Community based rehabilitation via an Intermediate Care Service, rapid community response services or other community agencies. b. A short or long term package of care. If this is under D2A, the patient will receive a single trusted assessment in hospital followed by a period of support / rehab at home and then a full assessment after 4/6 weeks to establish long term needs.
- **Pathway 2:** Community rehabilitation in a non-acute inpatient bed. The patient is unable to return home in the short term and requires support in a non-acute bed, either a community hospital or a care home. The patient will receive rehabilitation with the aim of returning home in 4/6 weeks. Under D2A, the patient will receive a single trusted assessment in hospital followed by transfer to the non-acute bed. A full assessment is completed at the end of the period to establish ongoing needs.

- **Pathway 3:** Complex patients and End of Life Care Patients.

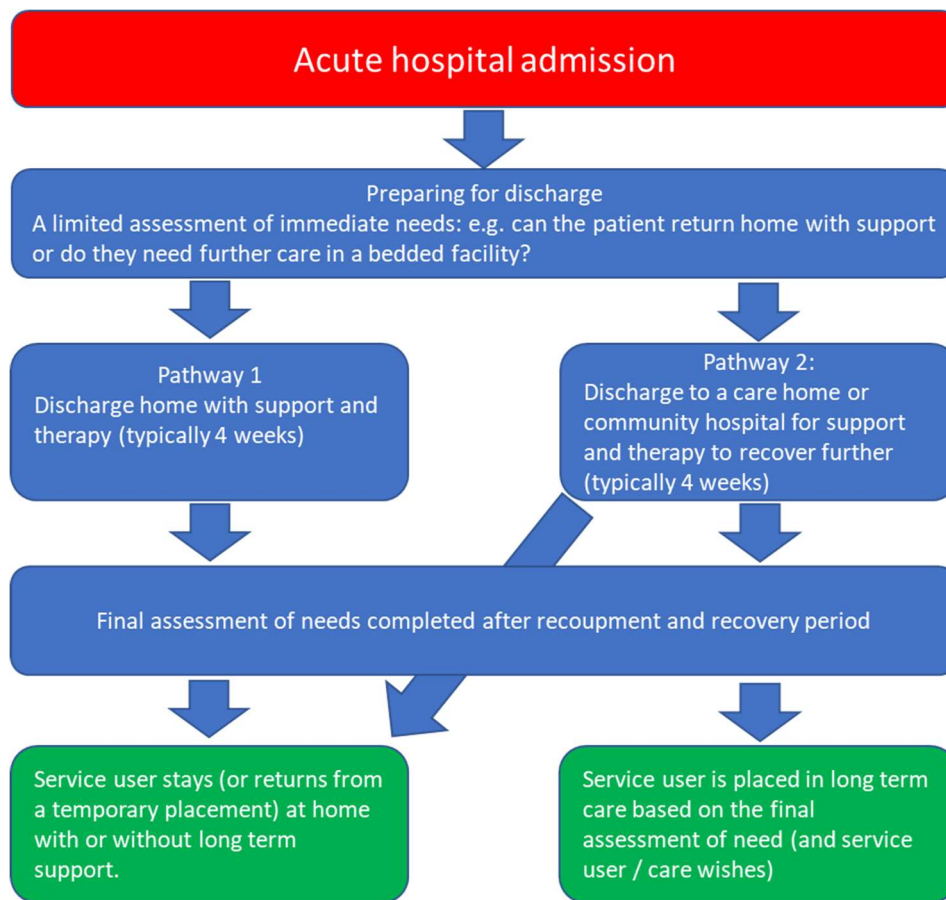


Figure 1: The D2A pathways for complex discharges along pathway 1 and 2.

2.0 METHODS

Approach

The developed measurement framework follows the realist evaluation tradition, building upon a range of initial information resources available to develop a theory of change, where outcomes and impacts are understood to be driven by mechanisms of cause and effect. The theory of change maps the resources required to implement the change, the activities required to enact the change, and the resulting outputs, outcomes, and impact expected to be realised by the resources and activities.

Developing the theoretical framework provides the basis for measurement. This helps evaluators to understand both the results of a change or process and the main drivers of such results. This approach is well-suited to complex public policy interventions or NHS pathway re-designs, such as the implementation of the D2A pathway, where there will be a range of possible causes for an observed outcome.

The process to develop the theoretical framework is outlined in Figure 2, demonstrating how different information sources were drawn upon to develop the theory of change, the metrics, and then the overall framework. The following sub-sections provide further details on each information source.

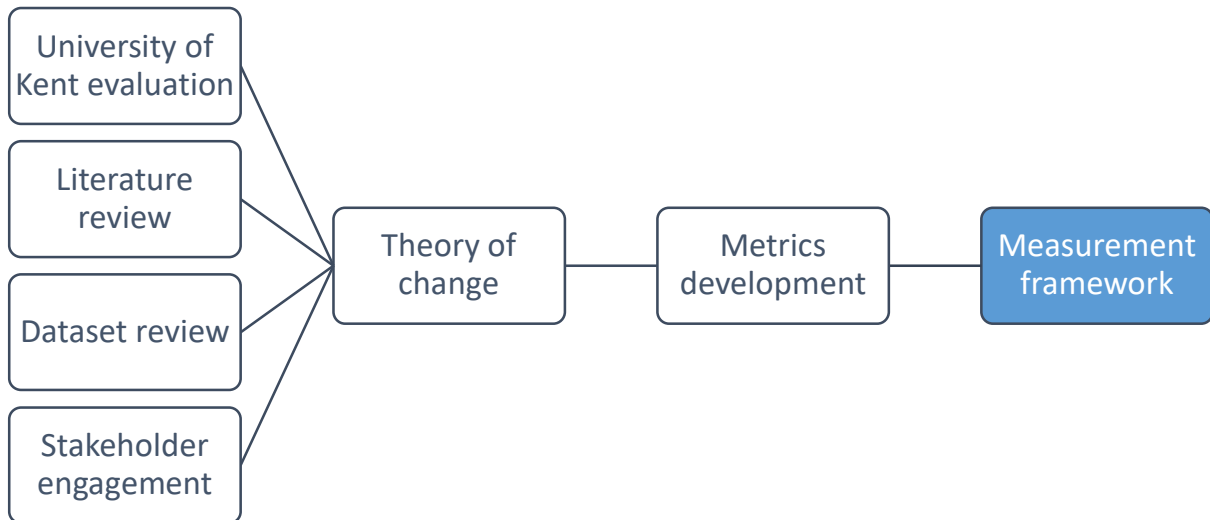


Figure 2: The different sources that inform the theoretical basis for a measurement framework.

Findings from the pilot evaluations and research conducted by the University of Kent team

The University of Kent team conducting the evaluation of the pilot D2A implementation in Kent, Surrey, and Sussex were able to identify and classify several impacts of the pathway onto a range of stakeholder groups, such as patients, carers, and healthcare staff. This information was analysed by Unity Insights to understand the theory of change and the expected outcomes from implementing D2A, which provided the initial basis for the logic model (Section 2.1). These two elements enabled the research and development of metrics and the measurement approach.

Literature review

A literature review was undertaken for the purpose of understanding potential measurement approaches, impacts, and metrics used in relation to D2A or similar pathway redesigns. The review was designed to focus solely on measurement to supplement, rather than duplicate, the research undertaken by the University of Kent D2A team. A range of papers, published documents, websites, and case studies were read and reviewed to build an understanding of what the D2A pathway is, guidance on implementation, and what the key impacts on the healthcare system should look like. The NHSE D2A Quick Guide was a key information source for summarising the goals, principles, and

working methods of the D2A model, and is referenced multiple times throughout the current report (NHS England, n.d.) .

Dataset review

A review of existing data collections and available datasets across health and social care from a range of data providers was conducted. This review will ensure that the measurement approach and metrics proposed within this framework minimise the data collection burden placed upon systems and providers by utilising existing mechanisms where possible. The review considered features of each dataset such as relevance to the D2A pathway or to the elements of the D2A change theory developed in the current report.

Stakeholder engagement

Regular engagement with the University of Kent research team and the D2A implementation team were supplemented by discussions with the business information team at NHS Sussex ICB to support with the following purposes:

- Ensuring that the metrics are feasible and can be collected at scale
- To ensure the metrics are clearly defined and understandable
- Enhancing recommendations around data collection through additional insights

2.1 LOGIC MODEL

The outcomes from the D2A pathway contain many interdependencies, with different activities affecting each other and feeding into the same outputs and outcomes. Since these interdependencies are challenging to identify by analysing each activity separately, a valuable way to visualise the 'cause and effect' nature of the factors associated with the pathway is through a logic model. This approach was taken to help structure the measurement framework and support quality improvement and evaluation approaches (Section 5.4).

A logic model provides a high-level overview of a process, which is required for a realistic evaluation approach, using basic 'if... then' logic as its underlying principle. A summary of the function of a logic model is shown in **Error! Reference source not found.** below.

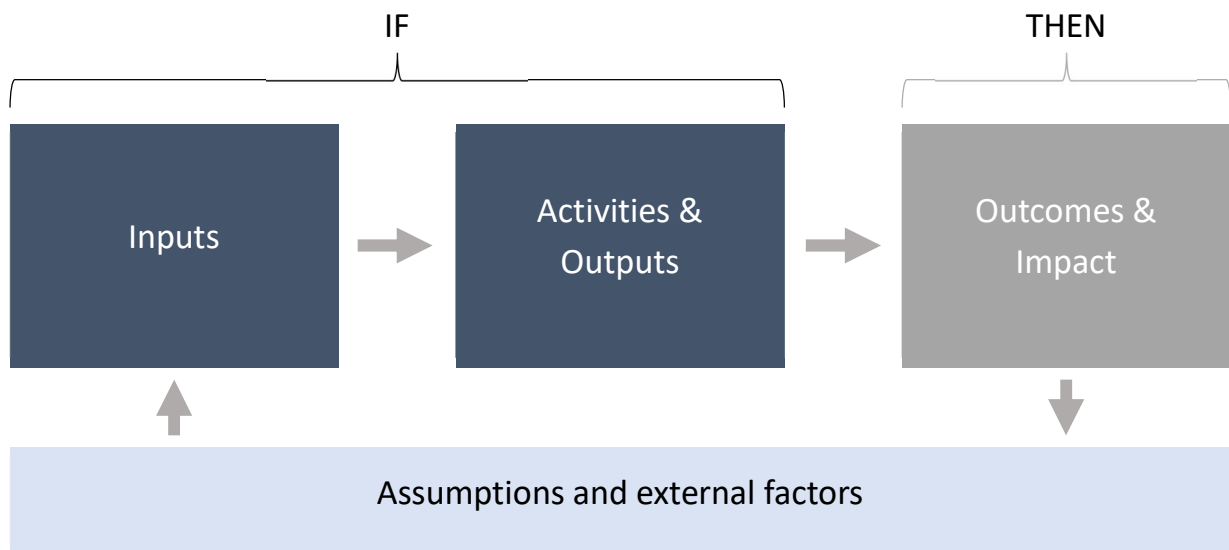


Figure 3: The underlying logic and process on which a logic model is based.

The ‘if’ part of the model relates to the inputs into a process, for example in the case of D2A, the patient voice is an input which is fed into the pathway. These inputs undertake various activities which in turn produce outputs, the results of these activities. This completes the ‘if’ section of a logic model. If those input, activities, and outputs all occur, some resulting change is expected due to the process, which is summarised in the ‘then’ part of the model. These changes can be summarised as outcomes, which are the direct result of the ‘if’ section’s outputs, and finally impacts, which are the wider, more generalised result of the outcomes.

3.0 PATIENTS AND CARERS’ PERSPECTIVE - SUMMARY OF FINDINGS

A grey-literature evidence synthesis conducted to gauge the perspectives of patients, informal carers and advocates on their experience of 'Discharge to Assess' identified key areas for improvement:

Communication, including the use of clear verbal and written information (particularly when describing what to expect of D2A, and discharge summaries), establishing points of contact, maintaining interdisciplinary dialogue, and ensuring patient/carer involvement in decisions;

Carer Involvement, including early recognition of those in carer roles for assessment and ongoing communication, consideration of those individuals as partners in care, respecting carer knowledge of a patient and their medical history and providing adequate information for safe care;

Unmet Needs, caused by issues such as insufficient home support at the point of discharge onwards, a lack of equipment, medication and transport, and often complicated in patients with multiple, sometimes competing, requirements. Perceived shortfalls in the D2A process commonly led to feelings of **distress**.

4.0 PLACE-BASED REPORTS

Based on the place-based reports, it was determined that the themes of the D2A project could be broken into three principal themes. In each of these categories, there are category-specific activities

which are required for D2A to run efficiently, as well as category-specific benefits and impacts which could be measured.

The three core themes and subthemes are presented in Table 1:

Table 1: Summary of themes and subthemes.

Theme	Sub-theme
<p>Commissioning. <i>How the pathway is funded, its structure and culture and the outcomes that are expected.</i></p>	<ol style="list-style-type: none"> 1. Finance 2. Capacity to Deliver D2A 3. Outcomes
<p>Multidisciplinary working. <i>The skills, knowledge and understanding of the staff, the connections between the teams, and how the pathway and teams are coordinated</i></p>	<ol style="list-style-type: none"> 1. Connections 2. Co-ordination 3. Culture and Skills
<p>Information and knowledge exchange. <i>The way assessments are made, the management of the records and the availability of information to provide an operational oversight of the pathway.</i></p>	<ol style="list-style-type: none"> 1. Assessment 2. Management 3. Oversight

5.0 FINDINGS

The findings of this report consist of a logic model framework which links the different components of the D2A programme to understand which inputs and activities determine the outcomes and impacts. The data collection subsection describes which data sources which can be used to measure the relevant outcomes for the D2A programme. The measures subsection presents the key metrics and supporting metrics that can be used to determine how effective the implementation of the D2A programme in the KSS HCPs has been, which are presented in more detail in the Appendix. Lastly, the measurement approaches subsection shows the value of the measurement framework by detailing the evaluation and measurement for improvement approaches recommended to evaluate D2A.

The pathway that is put in place through the implementation of the D2A programme requires cooperation from various care settings to ensure a smooth transition for the patient between various stages of the pathway. To evaluate the effectiveness of the D2A pathway, it is important to consider both the requirements and benefits that result from its implementation at each of these stages.

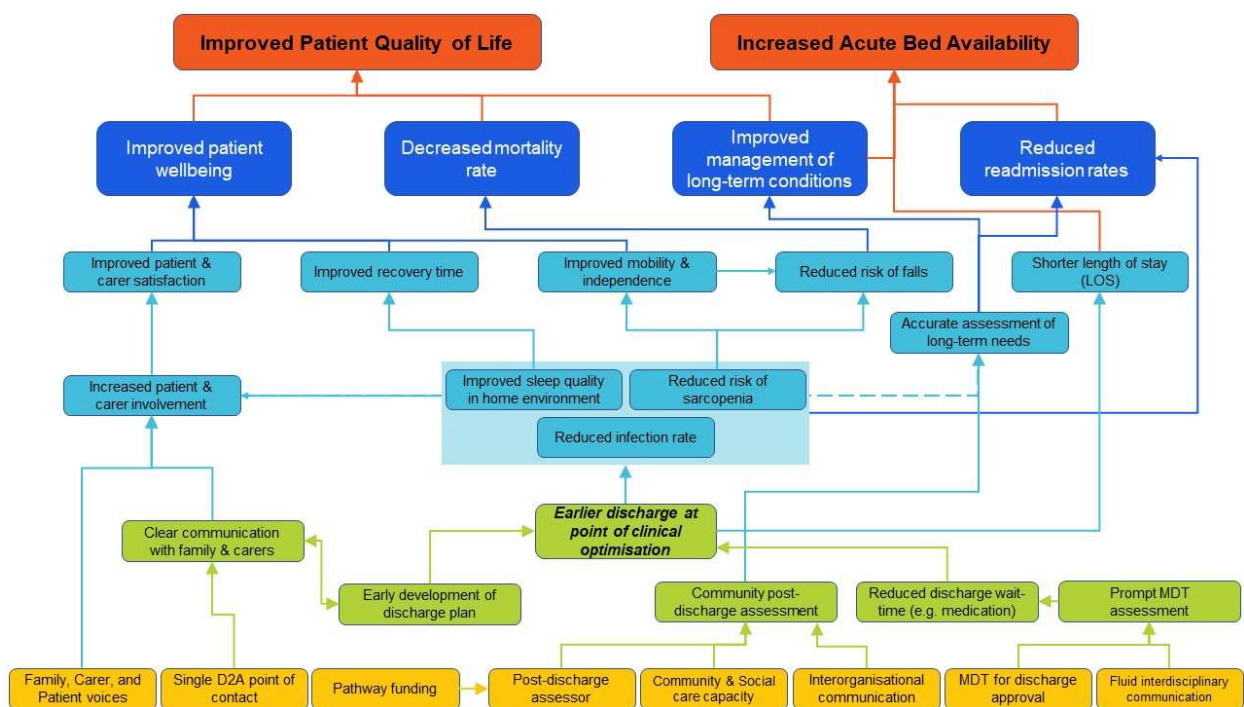
5.1 LOGIC MODEL

For the D2A pathway, the logic model shown in Figure 3 summarises the previously discussed themes to give a clearer overview of the process by which D2A effectuates change in the wider healthcare

system. This provides an oversight of the logic behind the model and how it would function if implemented according to plan.

The overarching goals of the D2A pathway are, as previously discussed, the improvement of patient quality of life through improving health outcomes and satisfaction, and the increased availability of acute beds in hospitals. With these two factors being the overall goals of D2A, they form the impacts for the logic model.

By moving through the diagram level by level, the ways in which D2A aims to bring about these goals can be traced all the way from the inputs that make up the model, up to the outcomes resulting from all the activities and outputs. The centre of the diagram is held by what were the core elements of the pathway, with the main activity revolving around the earlier discharge, which is brought about by multiple 'sub-activities'. The main benefits identified in the outputs stem from the key health improvements associated with a shorter length of stay, so these are grouped in the middle of output level of the diagram. Another key output highlighted by bold text is the shorter length of stay, which is a direct result of the early discharge, and a key output stemming directly from this activity, and feeding directly into the wider impact of the project.



This logic model, or a similar diagram showing the causal links between different parts of the pathway, can also be used in a practical manner when implementing the D2A model. This is because it allows those responsible for the pathway to evaluate and troubleshoot problems within implementation. For example, if a hospital is failing to see an increase in acute bed availability once the model has been implemented, they can use the logic model to evaluate why that might be the case within the context of D2A, and trace back down the model to identify potential causes, whether that be at the input, activities, or output level. As a result, the logic model should not necessarily always be viewed in its

Figure 4: A logic model showing the structure of the D2A model, and how it brings about its goals.

entirety. It can be segmented according to particular aspects of the pathway that a system, place or provider may wish to focus upon for sub-projects or quality improvement initiatives.

5.2 DATA COLLECTION

The recommended data collection strategy leverages existing datasets wherever possible and recommends further collection only where necessary to minimise the burden placed upon providers and frontline staff.

The full proposed list of metrics, alongside relevant data sources, is presented in Appendix A: Table 3.

Available national datasets

The dataset review conducted as part of the development of this measurement framework has included a review of the metrics already available and being captured by health and social care providers. The main consideration for these datasets is access to the appropriate level of detail required to support national and local measurement approaches. For most NHS datasets, organisations collect the data locally and then submit centrally – so access to the central dataset is not required. Information governance and access considerations become more important when NHS organisations wish to review data sourced from outside of the NHS (data collected by social care providers, for example) or for other NHS organisations.

Amendments to existing datasets

Due to the impact that hospital inpatient care and transfers of care can have on patients and carers, it is recommended that the ASCS and SACE surveys are amended to include additional questions relating to patient and carer experiences with social care after a patient has been discharged from hospital. This could ensure a robust, national view of patient and carer experience related to the D2A pathway once per year while leveraging upon an existing data collection mechanism.

Local datasets

The purpose of this framework was to identify a consistent measurement approach that can be applied across England. As such, local datasets created by regions or local networks have not been considered within the scope of this report. Regions and systems with local data assets that cover a portion of the proposed metrics from this document may wish to consider leveraging these rather than national datasets.

Bespoke surveys

Patient and carer experience relating to the D2A pathway is challenging to capture. Existing surveys (ASCS and SACE) can cover these topics if amended, but these collections only occur on an annual basis. This prevents rapid insight and quality improvement methodologies where granular, high frequency data (usually weekly or more frequently) is often required. A bespoke post-discharge survey is recommended, targeted towards the patient and carers' experience of the patient's hospital discharge, transfer of care, and follow-up support.

The survey could cover two core elements:

- Patient and carer experience relating to the patient's hospital discharge
- Patient reported outcome metrics (PROMs) relating to their care

The survey would need to occur once the patient has been discharged, after short-term support has started, and a long-term assessment of their needs has been conducted. This survey would most likely fall under the responsibility of social or community care teams. The feasibility of conducting such a survey nationally is a key limitation, discussed further in Section 7.0, but it is one of the only methods available to monitor the experiences of patients and carers at a frequency that supports patient and carer-centred quality improvement.

5.3 MEASURES

Using both the elements from the logic model and the aforementioned themes, metrics are developed to address both. This allows for the implementation of a D2A model to be assessed and monitored, with a clear tie between what is being measured and its impact on the patient and system. Some of the metrics listed below are available in the existing datasets evaluated in the previous sub-section, and some require bespoke collection specifically for D2A.

A full list of metrics, the relevant elements of the logic model to which they relate, the themes and sub-themes they relate to, and the relevant data sources can be found in Appendix A. These are broken down in the figures below into the logic model sections they sit within. The metrics highlighted in bold are recommended key metrics, which provide essential information about the functioning of the D2A pathway, both in its operation and its effects.

INPUTS

The inputs represent the resources required to be in-place to support the implementation of the pathway. As such, these do not necessarily represent key metrics for assessing pathway outcomes and implementation, but they are key enablers and are valuable to assess as potential areas for improvement.

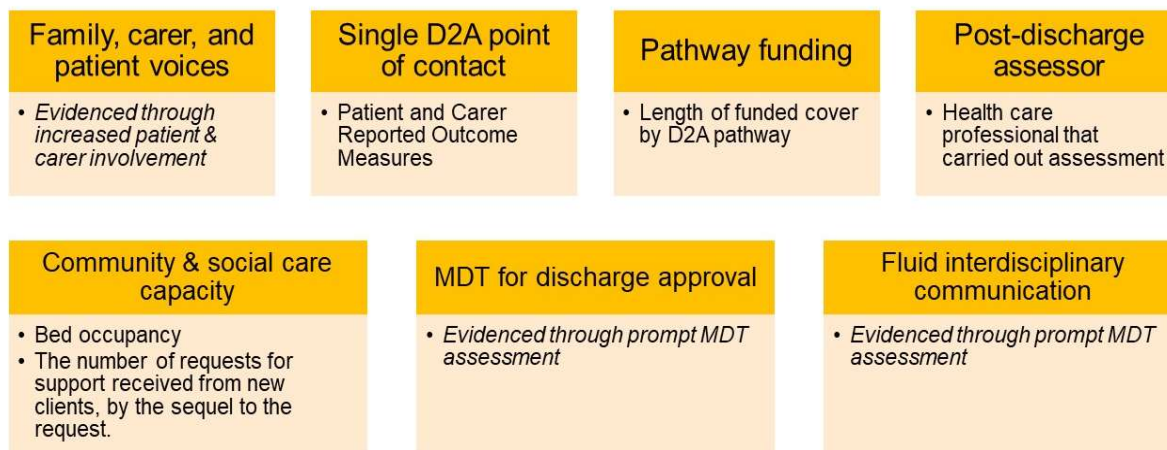


Figure 5: A summary of the metrics associated with the input level of the logic model.

ACTIVITIES

The **‘time between discharge and assessment’** key metric is important as this not only ensures that post-discharge assessments are being carried out by placing a data collection requirement against them, but also helps to ensure that patients are being discharged safely (Figure 5). This is emphasised as important by the NHSE D2A guidance, which states that the post-discharge assessment should be done promptly to ensure patient safety (NHS England, n.d.). It is worth noting, however, that there is currently not a consensus on a target or appropriate time between discharge and assessment. As such, it will depend on local context to understand whether the time increasing or decreasing is desirable.

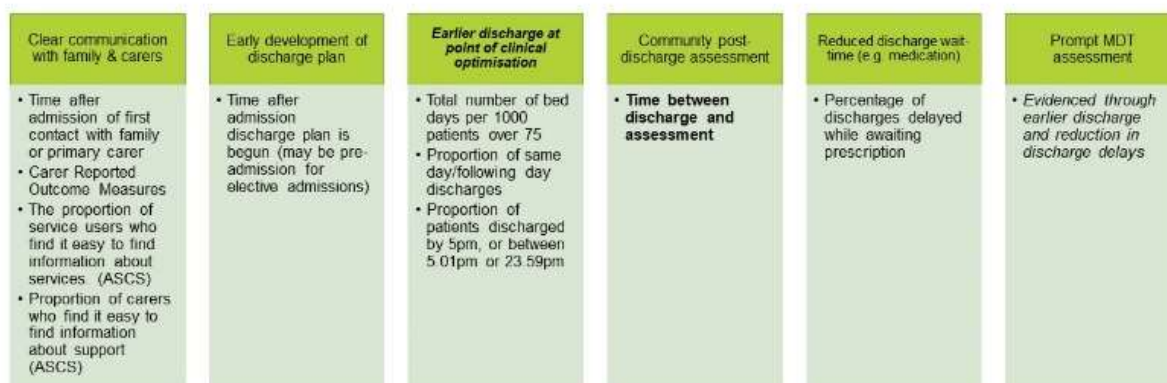


Figure 6: A summary of the metrics associated with the activity level of the logic model.

OUTPUTS

Another key metric of the D2A model is the **‘reduction in average length of stay’** as this measures the central goal of the D2A programme; to discharge clinically optimised patients earlier (Figure 6). This metric is calculated with comparison to historic non-D2A length of stay metrics. By measuring this output level metric, the functioning of the D2A programme can be evaluated. Moreover, the average length of stay is a more reliable metric by virtue of its direct relationship with earlier

discharge, whereas many other output metrics are more complex and thus may be affected by various confounding factors.

There are two further key metrics which pertain to the accurate assessment of long-term needs which are obtained from the SALT database (Figure 6). The first metric, which measures **how many people access long-term support**, can be used to help identify whether D2A may improve health outcomes associated with its implementation. If there is an improvement in health outcomes, and people are provided with the short-term care that they require through an accurate assessment successfully, this could lead to a decrease in patients requiring long-term support. The second metric obtained from the SALT database relates to **how many discharged patients remain in their home environment 91 days after discharge**. This metric can be used for an evaluation of the health outcomes of D2A, and whether a patient’s needs have been assessed accurately due to the home-based assessment. This should lead to an increase in the number of patients who remain at home after 91 days, as preventable health conditions should be identified, and the necessary support provided, through the post-discharge assessment.

<p>Increased patient & carer involvement</p> <ul style="list-style-type: none"> • Carer Reported Outcome Measures • Proportion of carers who report that they have been included or consulted in discussion about the person they care for (SACE) • Patient Reported Outcome Measures (PROMs) 	<p>Improved patient & carer satisfaction</p> <ul style="list-style-type: none"> • Carer Reported Outcome Measures • Overall satisfaction of people who use service with their care and support. (ASCS) • Patient Reported Outcome Measures (PROMs) 	<p>Improved recovery time</p> <ul style="list-style-type: none"> • Patient Reported Outcome Measures (PROMs) 	<p>Improved sleep quality in home environment</p> <ul style="list-style-type: none"> • Patient Reported Outcome Measures (PROMs) 	<p>Reduced risk of sarcopenia</p> <ul style="list-style-type: none"> • <i>Evidenced through mobility & falls</i>
<p>Reduced infection rate</p> <ul style="list-style-type: none"> • Acute care infection rate 	<p>Improved mobility & independence</p> <ul style="list-style-type: none"> • Patient Reported Outcome Measures (PROMs) • Rate of fall occurrences among D2A patients (vs non-D2A patients) 	<p>Reduced risk of falls</p> <ul style="list-style-type: none"> • Rate of fall-related admissions among D2A patients (vs non-D2A patients) 	<p>Accurate assessment of long-term needs</p> <ul style="list-style-type: none"> • The number of people accessing long term support during the year to 31st March by Primary Support Reason, Age Band, Support Setting and Mechanism of Service Delivery (SALT) • The number of discharges from hospital into reablement / rehabilitation services of people aged 65 and over, by age, gender and whether they were still at home 91 days after discharge (SALT) 	<p>Shorter LOS / Reduced DTOC</p> <ul style="list-style-type: none"> • Reduction in average length of stay • Reduction in total additional days patients have remained in hospital since the decision was made that they no longer meet the criteria to reside

Figure 7: A summary of the metrics associated with the output level of the logic model.

OUTCOMES

Another key metric which can measure whether D2A is effective and safe for patients who are discharged earlier is the measurement of **re-admission rates** (Figure 7). Specifically, this metric can be compared with the rates of re-admission associated with the standard hospital discharge practice to see whether there is an improvement from the current baseline pathway. If these rates increase post-implementation of the D2A programme, it could indicate that the earlier discharge is not being carried out safely. For example, it could indicate that either patients are being discharged before they are ready, or the post-discharge assessment is not capturing and handling the needs of patients. Conversely, if these re-admission rates decrease, this could indicate that the

implementation has been effective and is leading to improved short-term health and recovery outcomes.



Figure 8: A summary of the metrics associated with the outcome level of the logic model.

IMPACTS

Finally, there are key metrics associated with the impact level of the logic model. These are harder to capture, as items at the impact level of the logic model has many factors associated with them, some of which are not included in the logic model. For example, despite the D2A pathway performing effectively, other factors such as unavoidable health deterioration could lead to a worsening of patient and carer quality of life post-discharge. While the impact of D2A on a case-by-case basis may be challenging to evaluate, on average it should help to improve patient and carer quality of life, **Error! Reference source not found.** as shown in the logic model. This data can be captured through **patient and carer reported outcomes**, which may be measured through a post-discharge survey. Although harder to capture, this was identified as a key metric as it allows patients and carers to provide feedback on the model, which is vitally important in making the model patient and carer-centred, as is suggested by the guidance.

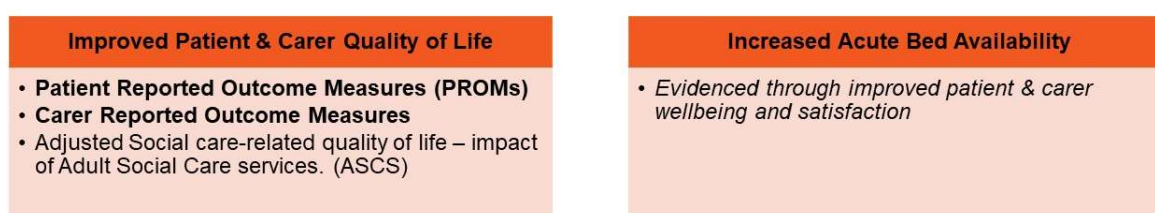


Figure 9: A summary of the metrics associated with the impact level of the logic model.

CONTEXT MEASURES

Additional measures are included in Appendix A. These broadly relate to capturing key process information or demographic considerations.

KEY NATIONAL PERFORMANCE INDICATORS

The above framework identifies a number of key indicators to focus on, although some require careful local interpretation to understand ‘what good looks like’.

As such, three overarching key performance indicators have been proposed to help understand the successful implementation of the D2A model:

1. The number of patients on D2A pathways 1 and 2

This will capture the implementation of the pathway over time within an organisation, but also can serve as a useful comparison between regions. It is, however, influenced by both implementation and demand. Some additional context may be required to fully understand any trends observed.

2. How many discharged patients remain in their home environment 91 days after discharge

This metric is described under the “Outcomes” sub-section above. It is a useful metric to understand the effectiveness of post-discharge support for patients discharged to their own home.

3. Patient and carer reported outcomes

This information is understood to relate to a key aim of the D2A pathway. Data collection may be challenging, but can also be obtained with adaptations to existing national datasets. A successful D2A implementation should be reflected in the self-reported outcomes provided by patients and carers.

5.4 MEASUREMENT APPROACHES

This section demonstrates how measurement approaches, namely measurement for improvement and evaluation, highlight the value of the measurement framework. Measurement is a key part of quality improvement activity, supporting care teams to engage in evidence-based testing cycles. Evaluation is generally conducted retrospectively to assess a programme like D2A once this has become established.

MEASUREMENT FOR IMPROVEMENT

The NHS measurement for improvement model (NHS Institute for Innovation and Improvement, 2017) sets out the best practice principles for data-driven approaches to improvement projects. Measurements for improvement metrics are usually split into three categories, which are outlined in Table 2.

Table 2: Quality improvement measures.

Type of measures	Description
Process measures	Represent process steps and change activities that lead to the desired results

Outcome measures	The desired results of the change activities, usually an impact to the patient, workforce, health and social care system or families and carers
Balancing measures	Capture other results that occur within the wider system as a result of the change activities, which may be positive or negative

Plan Do Study Act (PDSA) cycles and the model for improvement (Langley, et al., 1996) are often used widely across the NHS. The model for improvement is a data-supported approach that encourages teams to set measurable objectives for improvement work, to utilise quantitative evidence in the Study phase to monitor the results of improvement activities and use data to understand when a change is an improvement.

Measurement for improvement aligns well with the realist evaluation approach used for the logic model and metric development. Quality improvement also utilises theoretical chains of cause and effect to understand how changes can influence outcomes, usually mapped in the NHS using driver diagrams. As a result, the metrics used within the logic model can be distinctly mapped to the quality improvement definitions (Figure 10).

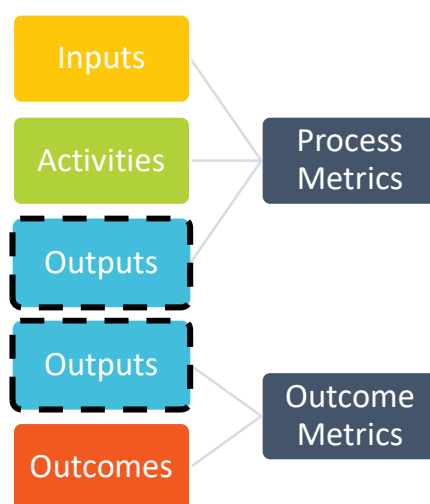


Figure 10: A mapping of the logic model components to the types of metrics.

Outputs are tentatively mapped to both process and outcome metrics because they may sit under either type of measure depending on the perspective of the specific quality improvement project. For the purposes of implementing D2A as a quality improvement project itself, the outputs may be better to be considered as outcome metrics initially.

System-level versus frontline improvement metrics

Different levels of the hierarchy within the NHS structure require different levels of improvement-related information. System leaders will generally wish to monitor higher-level outcome metrics whereas frontline staff will generally require short-term process metrics (NHS Institute for Innovation and Improvement, 2017). As frontline staff generally undertake the required activities to enact a change, they will need to review the process metrics in detail to monitor the immediate results and see the effect that they are having. This will enable rapid PDSA cycles.

EVALUATION

Evaluation is best utilised as a retrospective analysis of the programme once implementation has been completed in several sites and the pathway has matured. Both qualitative and quantitative methods of evaluation could be beneficial to the D2A pathway, but this report will focus solely on outlining potential quantitative methods that follow from the metrics that have been developed.

Quantitative outcomes analysis

A standard outcomes analysis will seek to understand to what degree a change in the inputs, activities and outputs led to a change in the outcomes of interest. Such an analysis is often bespoke to the programme, local implementation and can be driven by locally derived evaluation questions. Correlations between outcomes and activities should be drawn, accounting for factors such as time dynamics (e.g., time lags), confounding effects and any additional context.

Health economic analysis

A health economic analysis, such as a cost-benefit analysis (CBA), can be used to estimate the return on investment (ROI) of the programme by utilising monetisable benefit and cost streams. Such an analysis would require the development of the proposed metrics from this document into benefit and cost streams.

Benefits in the NHS may be classified as social, cash releasing or non-cash releasing. Social benefits include impacts to wider society, including the patient themselves. Greater patient and carer quality of life is one such theorised social benefit of D2A. Cash releasing benefits are efficiency savings in the NHS that allow costs to be reduced, freeing up expenditure that can be used elsewhere. Non-cash releasing benefits are efficiency savings that may not actually reduce costs as key resources are, instead, utilised elsewhere. For example, occupied bed days may be reduced in relation to a particular pathway, but it is unlikely that the hospital would reduce their capacity and more likely that it would utilise that capacity for other pathways. This is, nonetheless, a measurable gain in efficiency.

A brief outline of some of the key considerations for a health economic analysis is presented in .

Analysis consideration	Description
Perspective	<p>The organisation(s) that the analysis applies to and the wider health and social care system.</p> <p>It is recommended that the perspective undertaken by a D2A outcomes analysis examines the costs and benefits to both health and social care, such that the NHS and social care system are both considered.</p>
Comparator	<p>An analysis may use the following comparators, subject to available data and further evaluation framework design:</p> <ul style="list-style-type: none"> • Organisational data from before the implementation of the D2A pathway (before-and-after analysis) • Target population not receiving the implementation (cross-sectional analysis) • A combination of cross-sectional and before-and-after analysis (difference-in-differences analysis)
Population	<p>The target population is all patients discharged from acute hospitals onto D2A pathways 1 and 2.</p>
Time horizon	<p>A standard cost-benefit analysis for a healthcare programme may examine the data over a time horizon of 3 years or more, subject to the scope of the programme, anticipated time lags for implementation and the expected lags for costs and benefits to become realised.</p>

6.0 RECOMMENDATIONS

In addition to the recommended metrics (Section 6.3; Appendix A), the findings of this report have also led to several additional recommendations to be made. The key recommendations are:

- 1. Develop a nationally standardised post-discharge outcome survey**

It was identified that there is not currently a standardised survey in place for patients and carers to complete after patients have been discharged. This is an important recommendation because patient and carer experience and outcomes relate to key aims and impact of the D2A pathway.

This recommendation addresses the sub-theme of outcomes (under the principal theme of commissioning) because it would improve the reporting of clearly defined patient outcomes as a result of D2A, thus also improving accountability.

- 2. Capture management information data**

There is currently no centralised patient database to record information regarding a patient along the D2A pathway. To track the implementation of the pathway and patient flow through each of the relevant services, there should be one single record

for a patient to enable seamless information sharing between staff and carers and to improve patient outcomes. By implementing this recommendation, multi-disciplinary teams can be better co-ordinated and connected. This addresses two sub-themes of connection and co-ordination (under the principal theme of multidisciplinary teams). Ultimately, better management of patient data will address the sub-theme of pathway management (under the principal theme of information) which will enable better monitoring of the D2A pathway, and thus help to improve its implementation.

3. **Produce a national quality improvement dashboard**

Due to a lack of national data that is easily compared across different regions, it is more difficult to determine which factors make D2A more successful in specific HCPs. This type of data is invaluable to understand and quantify improvement opportunities and can be used as a starting point for sharing learnings and developing best practice case studies from across the country. Such a dashboard should be presented at sub-ICB level, the closest current analogue to the 'Place' geographies sitting beneath the ICS 'System' level. In addition, a national dashboard will address the sub-theme of skills and knowledge (under the principal theme of multi-disciplinary teams) by enabling the sharing of learning to improve national best practice.

7.0 ADDITIONAL CONSIDERATIONS

CAPACITY IN THE SYSTEM TO COLLECT ADDITIONAL DATA

Some of the proposed metrics which are not currently captured by existing health and social care datasets can be feasibly obtained with minor amendments to collections. There still, however, remains a gap in the collection of qualitative feedback from patients, carers, and families. This feedback represents important outcome metrics and covers key drivers behind the *quality of life of patients and carers* impact.

There are two options to collect this feedback:

- (i) A single, nationally standardised survey to be provided to patients and carers post-discharge.
- (ii) A sampling approach, whereby a subset of services implementing D2A and have capacity utilise surveys to obtain the information.

The challenge with option 1 is the burden placed upon non-acute services in social and community care to administer, process and follow-up on surveys. This may be mitigated through digital survey tools, although paper-based or telephone surveys must also be offered to avoid digital exclusion. Option 2 does not present a complete picture of D2A implementation in England and would provide less of a benefit to sites that cannot collect the data.

INTEGRATED DATA

Primary care datasets provide substantial contextual and demographic information on a patient. Where feasible, integrated (linked) datasets bringing together data from all providers involved in the D2A pathway as well as primary care will enable a holistic patient-centred perspective to the measurement approach.

IMPACT OF PRIMARY CARE

Primary care does not hold a direct role in the D2A pathways and relevant primary care metrics were not identified within the available literature, the pilot site evaluation themes, or in stakeholder discussions. It is likely, however, that the population benefiting from the D2A pathway will engage with primary care services more than the general population and that primary care will have a substantial influence on their health state. The effects of primary care are likely to be longer-term than the expected outcomes from the D2A implementation, but there may still be confounding or contextual effects to consider that are yet to be identified.

REFINEMENT OF METRICS

The metrics presented within this document have been proposed based on all information available at the time of publication. They are not, however, intended to be static. As the model is implemented nationally, improvement activity as well as further guidance and research will develop the pathway and the understanding of its impact. This, in turn, will lead to metrics being created or refined to maintain relevancy. This is in line with NHS measurement for improvement guidance (NHS Institute for Innovation and Improvement, 2017).

POPULATION DEMOGRAPHICS

According to all three place-based reports, there are concerns for unequitable outcomes for those with complex needs. Specifically, those with mental health needs or cognitive impairment can find it difficult to be discharged and moved to a new place more quickly, and there are often insufficient care homes available where those with such needs could be discharged to. This should be accounted for in the measurement approach. For example, many measures included in this report could be split by sub-groups to evaluate the level of care that cognitively impaired individuals receive because of the D2A programme. The Kent place-based report recommends that there is a need to increase step down bed capacity within communities to overcome delays faced for those with mental health needs for quicker discharge processes.

8.0 REFERENCES

Langley, G. J., Moen, R. D., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (1996). *The Improvement Guide: A Practical Approach to Enhancing Organisational Performance*. San Francisco: Jossey-Bass.

NHS England. (n.d.). *Quick Guide Discharge to Assess*. Retrieved from NHS England:
<https://www.nhs.uk/nhsengland/keogh-review/documents/quick-guides/quick-guide-discharge-to-access.pdf>

NHS Institute for Innovation and Improvement. (2017). *The How-to guide for measurement for improvement*. London: NHS England.

APPENDIX A

Table 3: Detailed breakdown of D2A metrics, including how they tie into the logic model, and their importance in evaluating a D2A model.

Theme	Sub-theme	Level in logic model	Metric type	How to measure	Data source
Information and knowledge exchange	Assessment	Input – Post-discharge assessor	Health care professional that carried out assessment	Quality of assessment and future care linked to expertise of assessor	Bespoke data collection
Commissioning	Finance	Input – Pathway funding	Length of funded cover by D2A pathway	Affects cost effectiveness (most cost effective, approximately two weeks on average, max six weeks)	Bespoke data collection
Information and knowledge exchange	Management	Input – Single D2A point of contact	Patient and Carer Reported Outcome Metrics	Was the patient/carer provided with a single point of contact for D2A enquiries?	Bespoke patient/carer survey
Commissioning Error! Reference source not found.	Capacity to deliver D2A	Input – Community and social care capacity	Bed occupancy	‘Step-down’ bed capacity is required for patients discharged through intermediary care.	Capacity tracker
Commissioning Error! Reference source not found.	Capacity to deliver D2A	Input – Community and social care capacity	The number of requests for support received from new clients, by the sequel to the request	Indicator of demand on social care services and potential denominator for short- and long-term support requests	SALT
Information and knowledge exchange	Assessment	Activity – Community post-discharge assessment	Time between discharge and post-discharge assessment	Should be a prompt assessment post-discharge to ensure patient safety	Bespoke data collection

Commissioning Error! Reference source not found.	Outcomes	Activity – Earlier discharge at point of clinical optimisation Output – Shorter LOS / reduced DTOC	Total number of bed days per 1000 patients over 75	System-wide look at effectiveness of D2A implementation, with 75+ being target population. Should see a reduction in total bed days.	Hospital Episode Statistics (HES)
Commissioning Error! Reference source not found.	Outcomes	Activity – Earlier discharge at point of clinical optimisation	Proportion of patients discharged by 5pm, or between 5.01pm or 23.59pm	Proxy measure for the effective and timely planning of a discharge	Acute discharge delays
Commissioning Error! Reference source not found.	Outcomes	Activity – Earlier discharge at point of clinical optimisation	Proportion of same day/following day discharges	Pathway should increase same day/following day turnarounds	Hospital Episode Statistics (HES)
Commissioning Error! Reference source not found.	Outcomes	Activity – Early development of discharge plan	Time after admission discharge plan is begun (may be pre-admission for elective admissions)	D2A emphasises discharge plan should begin as soon as possible after admission	Bespoke data collection
Multidisciplinary working	Culture and skills	Context measure	Carer support provided during the year, broken down by the age of the carer, primary support reason of the client (cared-for) and the type of support provided	Key context information to understand the type and nature of the support received by discharged patients	SALT
Multidisciplinary working	Connections	Output – Increased patient and carer involvement	Carer Reported Outcome Metrics	Does the carer feel they were involved in the patient's care?	Bespoke carer survey
Multidisciplinary working	Co-ordination	Output – Improved patient and carer satisfaction	Carer Reported Outcome Metrics	Is the carer satisfied with the pathway and its outcome?	Bespoke carer survey

Commissioning	Outcomes	Output – Improved patient and carer satisfaction	Overall satisfaction of people who use service with their care and support.	Direct measure, but frequency of data collection means a bespoke survey would be preferable	ASCS
Commissioning Error! Reference source not found.	Outcomes	Output – Improved patient and carer satisfaction	Carer-reported quality of life score	Direct measure, but frequency of data collection means a bespoke survey would be preferable	SACE
Multidisciplinary working	Connections	Output – Increased patient and carer involvement	Proportion of carers who report that they have been included or consulted in discussion about the person they care for	Direct measure, but frequency of data collection means a bespoke survey would be preferable	SACE
Commissioning Error! Reference source not found.	Outcomes	Output – Improved sleep quality in home environment	Patient Reported Outcome Metrics (PROMs)	Did the patient experience improved sleep quality post-discharge?	Bespoke patient survey
Commissioning Error! Reference source not found.	Outcomes	Output – Improved mobility and independence	Patient Reported Outcome Metrics (PROMs)	Did the patient feel their mobility was maintained through earlier discharge? (May require comparator group of non-D2A)	Bespoke patient survey
Commissioning Error! Reference source not found.	Outcomes	Output – Improved recovery time	Patient Reported Outcome Metrics (PROMs)	Did the patient feel their recovery time was better in the home environment? (May require comparator group of non-D2A)	Bespoke patient survey
Commissioning	User voice	Output – Increase patient and carer involvement	Patient Reported Outcome Metrics (PROMs)	Did the patient feel involved in the decisions made about their care?	Bespoke patient survey

Information and knowledge exchange Error! Reference source not found.	Management	Output – Improved patient and carer satisfaction	Patient Reported Outcome Metrics (PROMs)	Was the patient satisfied with their experience of the pathway?	Bespoke patient survey
Commissioning Error! Reference source not found.	Outcomes	Output – Improved mobility and independence Reduced risk of falls	Rate of fall-related re-admissions within 90 days	Poor mobility is a common cause of falls and should be reduced by shorter LOS.	Hospital Episode Statistics (HES)
Information and knowledge exchange Error! Reference source not found.	Pathway management	Output – Reduced infection rate	Acute care infection rate	Pathway should reduce acute care infections due to shorter LOS. Measurable through selected infection related ICD10s on the inpatient spell and on any readmission spells.	Hospital Episode Statistics (HES)
Commissioning Error! Reference source not found.	Outcomes	Output – Shorter LOS / reduced DTOC	Reduction in total additional days patients have remained in hospital since the decision was made that they no longer meet the criteria to reside	Pathway should reduce DTOC rates	Acute discharge delays
Commissioning Error! Reference source not found.	Outcomes	Output – Shorter LOS / reduced DTOC	Reduction in average length of stay	Pathway should reduce average length of stay	Hospital Episode Statistics (HES)
Commissioning Error! Reference source not found.	Outcomes	Output – Accurate assessment of long-term needs	The number of completed episodes of short-term support to maximise independence from new clients, by the sequel to the episode		SALT

CommissioningError! Reference source not found.	Outcomes	Output – Accurate assessment of long-term needs	The number of discharges from hospital into reablement / rehabilitation services of people aged 65 and over, by age, gender and whether they were still at home 91 days after discharge		SALT
CommissioningError! Reference source not found.	Outcomes	Output – Accurate assessment of long-term needs Outcome – Improved management of long-term conditions	The number of people accessing long term support during the year to 31st March by Primary Support Reason, Age Band, Support Setting and Mechanism of Service Delivery		SALT
CommissioningError! Reference source not found.	Outcomes	Output – Accurate assessment of long-term needs Outcome – Improved management of long-term conditions	Of the clients in LTS001b, the number of people who have been accessing long term support for more than 12 months at the year-end (31st March). Broken down by Primary Support Reason, Age Band, Support Setting and Mechanism of Service Delivery		SALT
CommissioningError! Reference source not found.	Outcomes	Output – Accurate assessment of long-term needs	Those clients receiving long term support recorded in LTS001a who received an unplanned review during the year PLUS planned reviews for those clients that led		SALT

			to a care home admission		
CommissioningError! Reference source not found.	Outcomes	Output – Accurate assessment of long-term needs	Those clients receiving long term support for more than 12 months at the year-end (LTS001c), for whom an unplanned or planned review of care needs took place during the year and the sequel to that review		SALT
CommissioningError! Reference source not found.	Outcomes	Outcome – Improved patient and carer wellbeing	Carer Reported Outcome Metrics	Has the pathway improved the carer’s all-round well-being?	Bespoke carer survey
CommissioningError! Reference source not found.	Outcomes	Outcome – Improved patient and carer wellbeing	The proportion of people who use services who have control over their daily life.	Direct measure, but frequency of data collection means a bespoke survey would be preferable	ASCS
CommissioningError! Reference source not found.	Outcomes	Outcome – Improved patient and carer wellbeing	The proportion of service users who report that they have as much social contact as they would like	Direct measure, but frequency of data collection means a bespoke survey would be preferable	ASCS
CommissioningError! Reference source not found.	Outcomes	Outcome – Improved patient and carer wellbeing	The proportion of people who use services who feel safe.	Direct measure, but frequency of data collection means a bespoke survey would be preferable	ASCS
CommissioningError! Reference source not found.	Outcomes	Outcome – Improved patient and carer wellbeing	The proportion of people who use services who say that those services have made them feel safe and secure.	Direct measure, but frequency of data collection means a bespoke survey would be preferable	ASCS

Commissioning Error! Reference source not found.	Outcomes	Outcome – Improved patient and carer wellbeing	Patient Reported Outcome Metrics (PROMs)	Has the pathway helped improve the patient's wellbeing?	Bespoke patient survey
Commissioning Error! Reference source not found.	Outcomes	Outcome – Decreased mortality rate	Mortality rate of D2A patients	Various health benefits of D2A should decrease mortality rates	Hospital Episode Statistics (HES) / SHMI
Commissioning Error! Reference source not found.	Outcomes	Outcome – Decreased mortality rate	In-hospital mortality on short term (90 days or less) re-admission	A successful discharge plan should lead to lower risk of mortality on re-admission	Hospital Episode Statistics (HES)
Commissioning Error! Reference source not found.	Outcomes	Outcome – Decreased mortality rate	Out-of-hospital mortality from recently discharged patients	A successful discharge plan should lead to lower risk of mortality out of hospital	SHMI
Commissioning Error! Reference source not found.	Outcomes	Outcome – Reduced readmission rates	Readmission rates of D2A patients vs non-D2A patients	Checks whether pathway is producing improved health outcomes	Hospital Episode Statistics & Management Information
Commissioning Error! Reference source not found.	Outcomes	<i>Population measure</i>	Percentage of patients discharged on D2A pathway	Indicates whether D2A is being used as default pathway	Bespoke data collection
Commissioning	Outcomes	<i>Population measure</i>	Total number of patients discharged	Indicator of improved patient flow through hospital system	Hospital Episode Statistics (HES)
Commissioning	Outcomes	Impact – Improved Patient and Carer Quality of Life	Carer Reported Outcome Metrics	Has the pathway increased the carer's quality of life?	Bespoke carer survey
Commissioning	Outcomes	Impact – Improved patient and carer quality of life	Adjusted social care-related quality of life – impact of adult social care services.	Collected annually through ASCS. Bespoke surveys preferable.	ASCS

Commissioning	Outcomes	Impact – Improved patient and carer quality of life	Patient Reported Outcome Metrics (PROMs)	Has the pathway helped improve the patient’s quality of life?	Bespoke patient survey
Commissioning	Outcomes	Impact – Increased acute bed availability	Measured through Outcome – Reduced length of stay		
Commissioning	Outcomes	Impact – Improved patient and carer quality of life	Social care related quality of life.	Direct measure, but frequency of data collection means a bespoke survey would be preferable	ASCS