health care intelligence

Sg2 SERVICE KIT

Reducing 30-Day Emergency Readmissions

June 2011

Welcome to the Sg2 Service Kit

Reducing 30-Day Emergency Readmissions

In April 2011, the Department of Health introduced a policy of non payment for emergency readmissions to English hospitals within 30 days of discharge. According to the 2011/2012 Payment by Results (PbR) guidance, commissioners will no longer pay for any eligible emergency readmissions to a hospital within 30 days of discharge following a planned hospital stay. This approach is being extended locally to include some readmissions occurring after a previous emergency hospital stay.

The Sg2 Service Kit contains an analysis of the scale of readmission penalties at the national and acute trust level. Sg2 estimates that total penalties associated with 30-day emergency readmissions would potentially cost NHS trusts £584 million in lost income (an average of £4 million per trust and 3% of the total PbR tariff). The prospect of significant income loss for trusts that are already operating in a cost-constrained environment creates real impetus to reduce readmissions.

This service kit is designed to help you:

Understand the financial impact of the non payment policy for 30-day emergency readmissions

Identify clinical areas of opportunity to reduce readmissions

Reduce readmissions by implementing customised improvement initiatives and learning from international best practice

In this kit you'll find:	Use this resource to:
Data	▪ Understand the scale of the financial impact of the PbR guidance on emergency readmissions for your organisation
Global Improvement Guide	▪ Identify and prioritise improvement options to reduce readmissions
Global Practice Summary	▪ Learn from international best practice

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Introduction

The 50% increase in emergency readmissions observed in the NHS in England between 1998/1999 and 2007/2008* is a cause of concern and the Department of Health hopes that financial penalties will incentivise efforts to curb this trend. Readmissions are generally indicative of ineffective patient management and call the quality of care provided across the continuum into question. However, while many readmissions are preventable, some are clinically necessary or unavoidable.

Multiple factors usually contribute to readmissions, rather than a single, discrete cause. Frequent drivers include the quality of inpatient care, the transitions to community and primary care, the availability of community resources for follow-up care, the patient's characteristics and the home environment. Addressing readmissions requires complex, clinically focused, system-wide solutions based on communication and collaboration between commissioners, acute, primary care and community providers, and social services. However, acute trusts faced with the prospect of financial penalties can identify groups of readmissions that they can impact directly in a rapid time frame.

The analysis presented in this Service Kit identifies the potential income loss that acute trusts may experience based on the application of the 2011/2012 PbR guidance rules to 2009/2010 emergency readmissions†. It is not intended to highlight appropriate rates of readmissions, define clinically related readmissions or benchmark trust-specific risk-adjusted readmission rates, but rather to analyse income loss based on actual readmission volumes if no action is taken. The kit also helps trusts to prioritise intervention areas and identify effective improvement opportunities.

*Department of Health. *Payment by Results Guidance for 2011-12.* Feb 2011: Gateway Reference 15618.
†All data in this service kit are based on Sg2 analysis of the 2009/2010 Hospital Episode Statistics inpatient data set unless explicitly stated otherwise.

National Table

Impact of 2011/2012 PbR Penalty on 30-Day Emergency Readmissions

	England	Acute Trust	
		Minimum	Maximum
Number of PbR-eligible 30-day emergency readmissions	661,893	1,056	13,374
30-day emergency readmission rate*	5.6%	2.9%	9.1%
Proportion of PbR-eligible 30-day readmissions that follow an elective admission	23%	11%	42%
Financial penalty relating to emergency readmissions†	£583.7M	£0.9M	£10.1M
Financial penalty for readmissions following an elective admission	£302.9M	£0.3M	£5.5M
Financial penalty as a % of total tariff	3.0%	2.0%	4.6%

Most Common Clinical Causes of Readmission (As a Percent of All Readmissions)

Infections (primarily: pneumonia, bronchitis, urinary tract infection, skin infections)	15%
Long-term conditions (COPD, asthma, diabetes, dementia, epilepsy, CHF)	11%
Complications of medical care, surgery or medical devices	7%
Noncardiac chest pain	4%
Abdominal pain	4%

*Total number of 30-day emergency readmissions (with PbR eligibility exclusions applied)/total number of admissions (with PbR eligibility exclusions applied)
†Assumes that the penalty for 30-day emergency readmissions following a nonelective admission is applicable to 25% of eligible readmissions.
Note: This analysis uses 2009/2010 Hospital Episode Statistics (HES) data for acute and foundation trusts in the NHS in England and applies 2011/2012 PbR tariff and rules on emergency readmissions. Specialist trusts are excluded from this analysis.
COPD = chronic obstructive pulmonary disease; CHF = chronic heart failure.

Improvement Options

Engage in Short- and Long-Term Solutions

Faced with immediate pressure to reduce readmissions, NHS trusts need to act on 2 fronts:

1. Take focused action now to negotiate with commissioners, reduce readmissions and avoid being subject to hefty penalties in the 2011/2012 financial year.
2. Implement sustainable initiatives that will prevent readmissions, improve patient outcomes and increase care quality in the long-term.

Monitor Readmissions

Trusts must immediately begin collecting and analysing detailed readmission data to understand the diseases, clinical practices, patient characteristics and factors driving readmission trends. This will help to identify appropriate improvement options.

Prioritise Improvement Strategies

Trusts must achieve a rapid reduction in readmissions to reduce financial penalties. This requires identifying groups of readmissions that represent substantial volumes and that can be improved with blanket approaches implemented by the acute trust directly.

Within the context of the PbR penalty, a useful starting point for such an immediate readmission reduction strategy is to focus on 7-day emergency readmissions:

- Seven-day readmissions relate to a large extent to traditional patient-hospital interactions, which are directly influenceable by acute trusts.
- Reducing readmissions that extend beyond 7 days requires greater communication and integration with clinical care occurring outside the hospital.
- Other readmissions will benefit more extensively from disease-specific interventions. Use tracked readmission data to identify particular “problem” diseases.

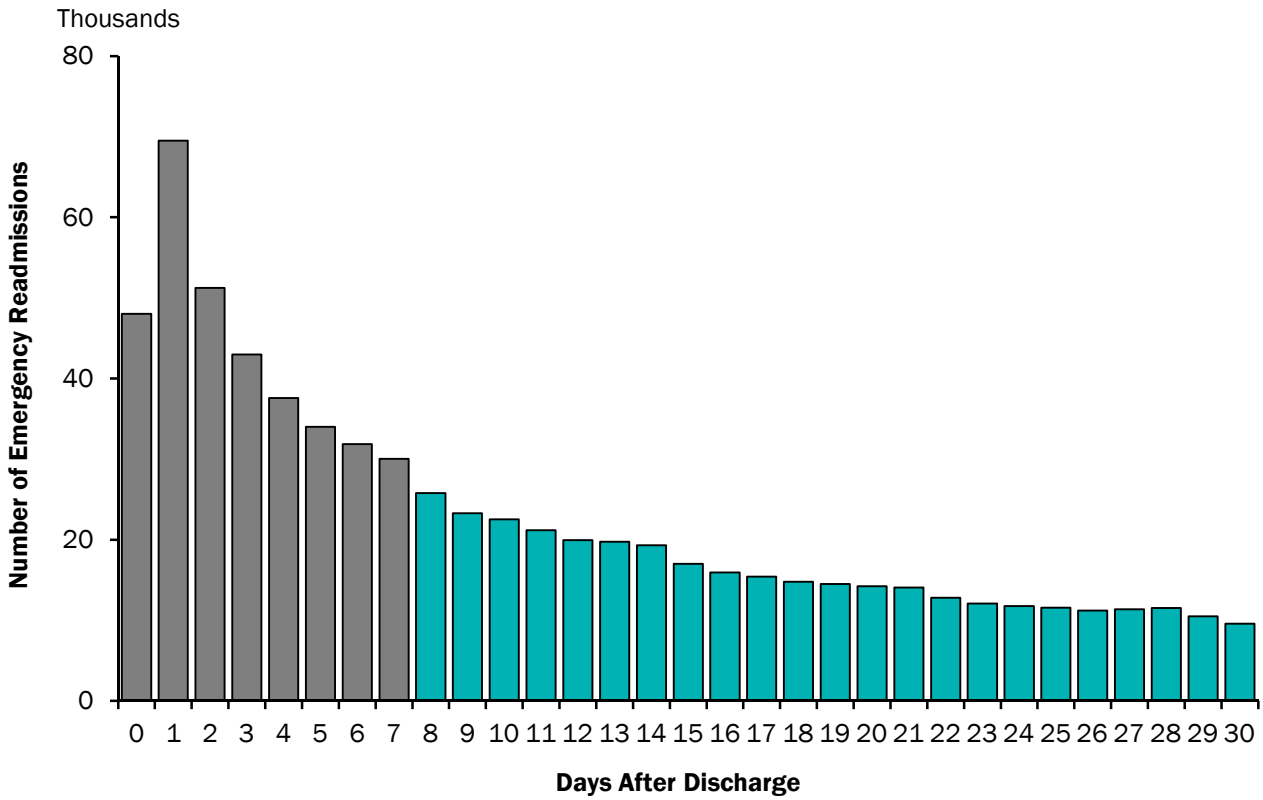
Further information on available strategies, their clinical relevance and prioritisation options can be found in the Global Improvement Guide and Global Practice Summary.

Improvement Options

Start by Reducing 7-Day Readmissions

- Nearly 50% of readmitted patients return to hospital within 7 days of their initial discharge (including 15% of readmissions within 1 day of discharge), potentially costing acute trusts £300 million in lost annual income or 1.5% of PbR tariff. This substantial volume highlights a significant potential for improvement.
- Readmissions within a rapid time frame can reveal issues related to hospital care or shortcomings in the process of discharging patients to the community. Readmissions within a longer time frame may be related to issues with follow-up care, patient education and compliance, and community-based readmission prevention strategies.
- Seven-day readmissions should be a focus of acute trusts' immediate improvement initiatives, since corrective interventions tend to be more within the remit of the acute trust than those required to reduce readmissions occurring over a longer time frame.
- Trust-driven interventions that are effective at reducing 7-day readmissions focus on addressing gaps in initial medical management and discharging patients to the appropriate level of care.

Number of 30-Day Emergency Readmissions by Days After Discharge
England, 2009/2010 HES Data*



*PbR penalty-eligible spells according to 2011/2012 PbR guidance.

Global Improvement Guide

Reducing Emergency Readmissions

Improvement Imperative

Emergency readmissions within 30 days of an inpatient stay generate significant costs for the National Health Service (NHS) and could suggest ineffective care management. Readmissions have also become a financial priority since the 2011/2012 Payment by Results (PbR) guidance has introduced non payment for eligible emergency readmissions to a hospital within 30 days of discharge from a previous planned hospital stay. This approach is being extended locally to include some readmissions occurring after a previous emergency hospital stay. Applying the PbR rules to inpatient data, the financial case for reducing admissions (quite apart from the clinical case) is very clear:

- Nearly 5% of all admitted patients in England are readmitted as emergency cases within 30 days.
- Nearly 80% of all 30-day emergency readmissions follow a previous unplanned stay in a hospital.
- Nearly half of readmitted patients return to a hospital within 7 days of their initial discharge.
- Total penalties associated with readmissions could cost NHS trusts nearly £600 million in lost income. This represents 3% of the PbR tariff and an average of £4 million per acute trust.

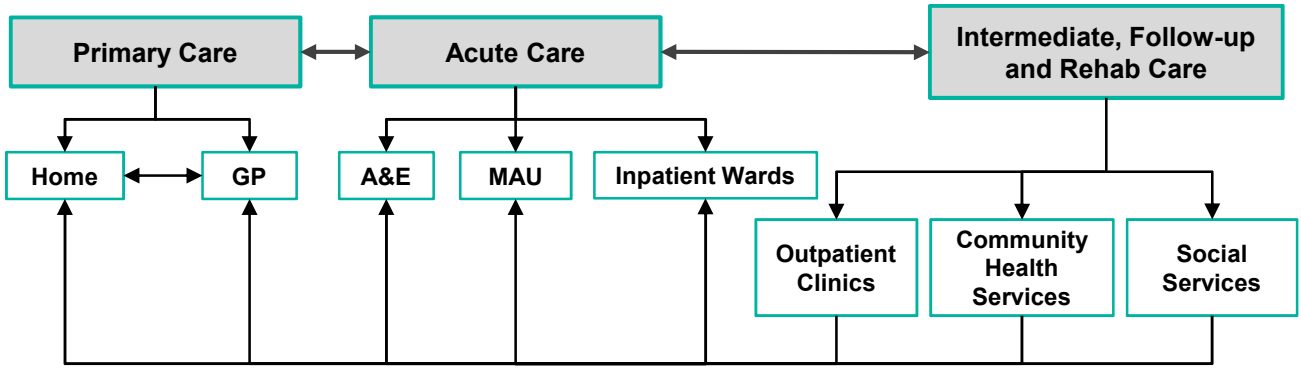
Acute trusts must take action now to prevent unnecessary readmissions and thereby avoid hefty financial penalties. However, while there are areas acute trusts can control, a sustainable reduction in readmissions requires complex system-wide solutions, involving all providers across the care continuum, commissioners, patients, their families and caregivers.

Auditing and analysing readmission trends from multiple perspectives is an essential starting point for commissioners and providers in understanding the causes of readmissions in the local economy and identifying the greatest improvement opportunities. This allows acute providers to identify areas that they can impact directly or quickly versus those that may require extensive collaboration with other providers. It is particularly relevant for this analysis to take into account:

- Time frame of readmissions, such as readmissions within 7 and 30 days of discharge. Quick rebounds, particularly within 7 days, often indicate suboptimal medical management during the initial stay or postdischarge placement to an insufficient level of care. In contrast, socio-economic factors, limited post-acute care follow-up and inadequate patient education are common causes of readmissions that occur between 8 and 30 days postdischarge.
- The patient's clinical condition (by diagnosis), linking to the patient's characteristics, such as comorbidities and demographics. This also should include a clinician-level analysis (to identify whether readmission patterns make sense clinically) and a source-of-readmission analysis (eg, home, nursing home) to determine the most common origin of readmitted patients.

Care Connections

Reducing readmissions requires effective connections across the care system. Improved risk assessment at admission, tailored care and standardised discharge processes within the acute care setting reduce readmission risk. Good communication with general practitioners (GPs) and post-acute care providers is also critical.



A&E = accident and emergency; MAU = medical admissions unit.

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Prioritise Interventions

Tailor Improvement Strategies to Time Frame

Readmission Time Frame	Possible Causes of Readmissions	Ownership of Improvement Strategies
Within 7 Days	▪ Incomplete medical management ▪ Medication reconciliation ▪ Wrong site of post-acute care ▪ Insufficient discharge support	▪ Acute trust ▪ Community and primary care providers
Within 8–30 Days	▪ Socioeconomic factors ▪ GP follow-up ▪ Rehab support and home health nursing ▪ Patient noncompliance ▪ Disease trajectory	▪ Acute trust ▪ Community and primary care providers ▪ Social services

Tailor Improvement Strategies to Clinical Condition

Clinical Condition of Initial Admission	Readmission Reduction Rationale	Improvement Focus
Occasional ▪ Initial admission with a condition that can be resolved in a short period of time and does not require substantial ongoing medical therapy ▪ Examples: Abdominal pain, noncardiac chest pain, pneumonia	▪ Readmissions from occasional conditions represent nearly 60% of emergency readmissions. ▪ 76% of these patients do not present with major complexities or comorbidities. ▪ Readmissions, particularly at 7 days, should be largely preventable.	▪ Optimise medical management in hospital. ▪ Identify chronic patients. ▪ Organise prompt post-acute care.
Elective ▪ Initial admission with a diagnosis that does not pose significant risk of loss of life/substantial reduction in functional ability if treatment is delayed ▪ Examples: Cataract, hip or knee replacement for osteoarthritis	▪ A readmission following a hospital stay for an elective condition should be preventable and therefore will be scrutinised closely.	▪ Encourage collaboration between clinicians, operating staff, relevant clinical units, rehab facilities and social care. ▪ Educate patients to enable effective postdischarge care.
Complex Critical ▪ Initial admission for a condition that requires immediate hospitalisation and is life threatening (usually involves an intensive care stay) ▪ Examples: Myocardial infarction, hip fracture, stroke	▪ Patients admitted for a complex critical condition have unique needs and require individualised and coordinated post-acute care in order to prevent readmissions.	▪ Align discharge destination with patient's unique clinical needs. ▪ Improve communication between care sites to ensure effective handoffs.
Chronic ▪ Initial admission for 1 or more chronic conditions that have extended over a multiyear period and require ongoing medical therapy ▪ Examples: Chronic obstructive pulmonary disease (COPD), chronic heart failure (CHF)	▪ 25% of readmissions are for patients with chronic conditions. ▪ Complex, comorbid patients generate 30% of all chronic patient readmissions and are 3 times more likely to be readmitted than simple cases with no comorbidities. ▪ Community and primary care must be collaborative and proactive.	▪ Conduct inpatient risk screening. ▪ Improve early support of discharge and outpatient management. ▪ Focus on relationship with community services and GPs to offer alternatives to A&E.

Implement Improvement Options

Component	Overview	Indicators

Monitor Readmission Rates
Owner: Hospital and Community
	Rationale: Few hospitals now document the origin of readmitted patients or track reasons, missing opportunities to improve overall care.
	Actions:
	▪ Track the diagnoses and admission sources of readmissions.
	  ▪ Adapt care plans and discharge processes based on trends identified in the data.
	  ▪ Regularly share data with medical directors of post-acute care sites and collaborate on ways to improve rates.
	▪ Use statistical process control charts to benchmark and provide alerts for unexpected patterns or rates.
	▪ Consider preferred status for postdischarge referrals based on data.
		Cost: ■
		Time: ■■
		Culture: ■■
		Impact: ■■
		(7- day & 30-day)

Address Gaps in Initial Medical Management
Owner: Hospital
	Rationale: Incomplete medical management during initial admission compromises patient outcomes.
	Actions:
	▪ Identify potential causes of readmissions through clinician peer review.
	▪ Fully assess and review comorbidities that influence primary diagnosis.
	  ▪ Ensure all test results come back prior to discharge or are adequately reviewed in a timely manner postdischarge.
	  ▪ Communicate results to all post-acute care providers.
	▪ Evaluate patients' palliative care and/or hospice needs on admission.
		Cost: ■
		Time: ■
		Culture: ■■■
		Impact :
		■■■ (7-day)
		■■ (30-day)

Tailor Care Plans Based on Readmission Risk
Owner: Hospital
	Rationale: Failure to recognise patients at high risk of readmission during their initial stay limits the ability to provide optimal care.
	Actions:
	▪ Use predictive modelling to identify high-risk patients.
	▪ Conduct admission evaluations with an eye toward risk and discharge needs.
	  ▪ Assess need for immediate case management.
	  ▪ Include structured process for medication reconciliation.
	▪ Adjust inpatient care plans during stay to address patient's discharge needs.
	▪ Automate referrals for postdischarge rehabilitation for high-risk patients as appropriate (eg, occupational therapy, cardiac or pulmonary rehab).
	▪ Provide high-risk patients with a nurse hotline number and online support for immediate assistance.
		Cost: ■
		Time: ■
		Culture: ■■
		Impact:
		■■ (7-day)
		■■ ■ (30-day)

Indicators Key

Cost (facility, technology, staff): ■ = ≤£100K; ■■ = £100K–£500K; ■■■ = £500K+
Time: ■ = 0–6 months; ■■ = 6–18 months; ■■■ = 18+ months
Culture (organisation-wide change management): ■ = limited; ■■ = moderate; ■■■ = significant
Impact: ■ = limited; ■■ = moderate; ■■■ = significant
7-day = 7-day emergency readmissions; 30-day = 30-day emergency readmissions

Implement Improvement Options (Continued)

Component	Overview	Indicators
Improve the Discharge Process Owner: Hospital	**Rationale:** Inadequate discharge planning can leave patients and families ill-equipped to manage care after a hospital stay. **Actions:** ▪ Create standardised, diagnosis-specific discharge summary templates. ▪ Facilitate clinician use of discharge templates. ▪ Take steps early to educate patients and families about care plan.	**Cost:** ■ **Time:** ■ **Culture:** ■■ **Impact:** ■■ (7-day) ■■ ■ (30-day)
Discharge to Appropriate Level of Care Owner: Hospital and Community	**Rationale:** The proportion of patients discharged home with support from social services or to a nursing home increases after a readmission, possibly indicating suboptimal postdischarge placement of the original admission. **Actions:** ▪ Establish admission criteria for each level of post-acute care. ▪ Provide home health assessments.	**Cost:** ■■ **Time:** ■ **Culture:** ■■ **Impact:** ■■■ (7-day) ■■ (30-day)
Redesign Transitions to Post-Acute Settings Owner: Hospital and Community	**Rationale:** Pertinent patient information is often lost during transition between care settings. **Actions:** ▪ Schedule timely specialty and GP follow-up appointments for all patients within 3 to 5 days of discharge. Managing the patient's main condition and comorbidities after hospitalisation requires both generalist and specialist care. ▪ Notify GP within 24 hours of a patient's discharge. ▪ Encourage completion and communication of discharge summaries to GP in less than 7 days. ▪ Consider a cross-continuum care team. ▪ Include individuals from the acute hospital, community hospital and post-acute care settings to identify and address breakdowns that can result in readmissions. ▪ Front-load home visits to activate family support and improve patient and caregiver education.	**Cost:** ■■ **Time:** ■■ **Culture:** ■■■ **Impact:** ■■ (7-day & 30-day)
Organise Post-Acute Care Owner: Community	**Rationale:** Patients' health status can quickly deteriorate due to gaps in communication or lack of follow-up across care settings. **Actions:** ▪ Place follow-up calls to high-risk patients at predetermined intervals. ▪ Explore remote monitoring options for highest-risk patients. ▪ Develop condition-specific patient support networks.	**Cost:** ■ ■ **Time:** ■■ **Culture:** ■■ **Impact:** ■ (7-day) ■■ (30-day)

Indicators Key

Cost (facility, technology, staff): ■ = ≤£100K; ■■ = £100K–£500K; ■■■ = £500K+
Time: ■ = 0–6 months; ■■ = 6–18 months; ■■■ = 18+ months
Culture (organisation-wide change management): ■ = limited; ■■ = moderate; ■■■ = significant
Impact: ■ = limited; ■■ = moderate; ■■■ = significant
7-day = 7-day emergency readmissions; 30-day = 30-day emergency readmissions

Define In-depth Strategies for Representative Clinical Conditions

Admission for an Occasional Condition: Pneumonia

- Eleven percent of pneumonia patients are readmitted as an emergency within 30 days of discharge (45% within 7 days).
- Readmitted patients tend to be older (average age of 72 years) than those who are not readmitted (average age of 64 years) and are more likely to present with complexities or comorbidities.
- More than 50% are readmitted for a respiratory-related condition, 60% of whom are readmitted due to pneumonia.

Example Solution	Implementation Steps
Address Gaps in Initial Medical Management	▪ Initiate antibiotics quickly upon presentation/diagnosis. Use an antibiotic "ladder" to choose the appropriate initial antibiotic. ▪ Ensure collection of blood samples is timely and suitable. ▪ Measure blood oxygen saturation levels. ▪ Vaccinate for influenza and pneumonia. ▪ Assess and review comorbidities. ▪ Treat COPD aggressively in appropriate patients.
Tailor Care Plans Based on Readmission Risk	▪ Use a risk stratification tool to identify opportunities based on patient demographics and readmissions history. ▪ Refer at-risk patients for smoking cessation/counselling and postdischarge rehabilitation as appropriate (eg, pulmonary rehabilitation). ▪ Schedule timely GP follow-up before discharge.

Admission for an Elective Condition: Hip or Knee Replacement for Osteoarthritis

- After a joint replacement for osteoarthritis, 6% of patients are readmitted within 30 days of discharge (47% within 7 days).
- Readmitted patients tend to be slightly older and are more likely to exhibit complexities and comorbidities.
- A third of patients are readmitted due to an infection or a complication relating to the original surgery or the implant.

Example Solution	Implementation Steps
Monitor Readmission Rates	▪ Analyse all-cause, orthopaedic-specific readmission rates at 1, 7 and 30 days, monthly or quarterly. Segment by planned and emergency cases. ▪ Track readmission rates by procedure, surgeon, discharge disposition and destination. ▪ Review all readmission cases to identify reasons for readmission. ▪ Segment reasons directly related to surgery (infection, haematoma, wounds, medication, prosthesis, pneumonia, cardiac) from those unrelated to surgery (gastrointestinal).
Tailor Care Plans Based on Readmission Risk	▪ Screen for conditions that increase readmission risk: diabetes, sleep apnoea, alcoholism, tobacco abuse, extreme obesity, chronic use of anticoagulants, preexisting symptoms of angina pectoris, CHF, COPD, prior VTE, use of psychiatric medications and MRSA. ▪ Delay surgeries for patients with abnormal lab results and/or indications of illness. ▪ Refer patients with high-risk conditions (eg, cardiac, renal, alcohol issues). Some patients may require preoperative alcohol detox.

Improve the Discharge Process	▪ Better prepare patients for discharge to home:
	  ▪ Educate patients on wound care, nutrition/hydration, fall prevention and the importance of staying mobile.
	  ▪ Provide a clear point of contact for patients' questions postdischarge.
	  ▪ Have a nurse call the patient 1 or 2 days postdischarge to review medication regimen and discharge instructions.

Define In-depth Strategies for Representative Clinical Conditions (Cont'd)

Admission for a Complex Critical Condition: Stroke

- Nine percent of stroke patients are readmitted as an emergency within 30 days of discharge (52% within 7 days).
- Complications and chronic diseases that are risk factors for stroke are major drivers of readmissions. The most common reasons for readmission are neurological conditions (40% of readmissions) including stroke (25%), followed by infections (12%) and long-term conditions (10%).

Example Solution	Implementation Steps

Address Gaps in Initial Medical Management/ Redesign Transitions to Post-Acute Settings	▪ Assess appropriateness of care setting (eg, hyperacute stroke unit vs general ward).
	▪ Utilise a ward-based case manager to review patient-level data daily for procedure compliance and medication accuracy.
	▪ Authorise inpatient case managers to contact the patient's GP or stroke consultant to address care gaps identified through the data.
	▪ Ensure heightened medication compliance by having nurse stroke experts provide customised patient education.
	▪ Establish a hospital-based stroke case management programme to:
	  ▪ Align patients' discharge destinations with their post-acute care and daily needs
	  ▪ Arrange follow-up patient care with other rehab and primary care providers
	  ▪ Offer a postdischarge stroke clinic for patients and families

Discharge to Appropriate Level of Care	▪ In cases where a delayed discharge is anticipated, assign a hospital-based nurse consultant to serve as a care integrator for patients identified as high readmission risk. ▪ Consider offering patients a home visit within 48 hours that covers medication reconciliation, dietary education, a home safety check and a physical assessment.

Admission for a Chronic Condition: Chronic Heart Failure (CHF)

- Sixteen percent of CHF patients are readmitted as an emergency within 30 days of discharge (40% within 7 days).
- About 40% of all CHF patients (admitted and readmitted) are complex or present comorbidities.
- More than 1 in 3 readmissions are due to the original CHF diagnosis. Other common causes of readmission are pneumonia and other respiratory disease (10% of readmissions) and other cardiac conditions (15%).

Example Solution	Implementation Steps
Address Gaps in Initial Medical Management	▪ Prescribe ACE inhibitor, angiotensin-receptor blockers, beta blockers and aldosterone antagonists as standard care for most patients with CHF. ▪ Evaluate cardiac function during admission. ▪ Screen patients for CHF readmission risk.
Improve the Discharge Process	▪ Organise follow-up appointment with GP/cardiologist within 3 days of discharge. ▪ Develop thorough discharge instructions; use teach-back method to ensure patients understand discharge plans. ▪ Use a standardised checklist of transitional care requirements. Include activity level requirements, diet, medications, follow-up appointments, telehealth arrangements and whom to contact if symptoms worsen.

Organise Post-Acute Care	▪ Consider telemonitoring options for patients for whom geography presents a barrier.
	  ▪ Assess range of technical options.
	  ▪ Explore feasibility of electronic remote cardiac monitoring.
	▪ Establish community networks and support programmes.
	  ▪ Partner with GPs and post-acute care providers to share data and brainstorm on ways to improve care coordination. Hold regular meetings to discuss data.
	  ▪ Develop support groups for patients to share their concerns and successes.

Management Considerations

- Initiatives to reduce readmissions prove most effective when they involve all stakeholders: patients, clinicians pharmacists, social workers, therapists, nurses and general practitioners.
- Management must ensure a nonpunitive approach to efforts to identify individual clinician's readmission trends. They should enlist clinicians' help in discovering care gaps rather than assigning blame.
- Readmission rates tracked by an individual acute trust may not reflect the extent of the problem, since patients in some cases return to a different acute facility. For a more comprehensive view, trusts should encourage and participate in data-sharing initiatives with other acute providers in the catchment area.
- Commissioners are to use the savings generated by the new PbR policy on non payment for emergency readmission to increase postdischarge support. Acute trust management should be proactive in negotiating with commissioners to develop effective postdischarge support that will not only prevent readmissions, but, ultimately, improve patient care.
- Managers should expect that rolling out initiatives to tackle readmissions will take at least 1 year.

Operational Considerations

- Not all acute trusts have readmission trends that warrant intervention. Initiatives should be tailored to the individual organisation's trends and available resources.
- Some readmissions are unavoidable, owing to patient frailty or disease trajectory.
- How well community hospitals, social services and other post-acute care providers are coordinated with the acute trust will affect clinician referral patterns and patients' discharge processes. Readmissions, as well as hospital length of stay, typically rise when clinicians do not trust the quality of services provided by post-acute care providers.
- Trusts with well-established information technology will be best positioned to track readmissions and to integrate predictive models.

Resources

External Resources

- NHS Institute for Innovation and Improvement. www.institute.nhs.uk
- Payment By Results Guidance 2011/12 www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_124356
- Emergency Readmission Rates: Further Analysis, Department of Health 2008 www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_090053

Related Sg2 Resources

- Sg2 Global Practice Summary: Physician Peer Review Reduces Readmission Rates, June 2011
- Sg2 Improvement Guide: Reducing 30-day Readmissions for Elective Orthopaedic Patients, September 2010
- Sg2 Improvement Guide: Reducing 30-day Readmissions for Congestive Heart Failure, April 2010
- Sg2 Improvement Guide: Reducing 30-day Readmissions for Stroke Patients, December 2010
- Sg2 Improvement Guide: Reducing 30-day Readmission Rates, April 2010
- Sg2 Improvement Guide: Reducing 7-day Readmission Rates, March 2011

Data Details

Analyses in this report used Hospital Episode Statistics (HES) data from April 2009 to March 2010. 30-day readmissions and tariff penalties were calculated according to PbR guidance 2011/2012. See the 30-day Readmissions Service Kit methodology document for further details. Data were split into 4 readmission condition types denominated by Sg2 CARE Families, Sg2's clinical grouping by ICD-10 primary diagnosis codes. The 177 Sg2 CARE Families were assigned a condition type according to the clinical features outlined on page 2. Patients who had complexities or comorbidities were identified via their assignment to an HRG with complications or major complications.

Global Practice Summaries
Bringing You Good Ideas From Around the World

Evergreen Hospital Medical Center, Kirkland, WA, US June 2011

Physician Peer Review Reduces Readmission Rate

Readmissions within 30 days of an inpatient stay are costly and call the quality of care across the continuum into question. Readmissions have recently come under the scrutiny of health systems and governments, as reflected in recent policies by the NHS in England and Medicare in the US to introduce curtailed payments or penalties for 30-day emergency readmissions.

Eager to improve patient outcomes and care quality, pioneering organisations have long implemented initiatives to tackle readmission rates. These provide tested examples to those organisations that are today faced with the prospect of financial penalties.

Since 2005, Evergreen Hospital Medical Center, a general acute medical centre located near Seattle in Washington state, has set up a regular physician peer review of readmissions, which has driven a reduction in readmissions and encouraged physician accountability. Since then, Evergreen's all-cause 30-day readmission rate has fallen to 5.3% compared with a risk-adjusted rate of 11.9% for a standard performer in the US[1].

Improvement Initiative

The hospitalist team (ie, general medical team) at Evergreen Hospital Medical Center recognised they could improve their 30-day readmission rate. The team's objectives were to improve patient outcomes and demonstrate superior clinical performance to internal and external stakeholders, including primary care physicians.

The team launched an independent review of readmissions, conducting case note peer reviews of all patients readmitted within 7 days to Evergreen Hospital in 2004 (120 sets of notes). This review had 2 valuable outcomes:

1. The results provided insights into the hospital's readmission rates and trends.
2. The process of peer review increased the sensitivity of the hospitalist team to the issue of readmissions and created a culture of collaboration and improvement.

[1] Data from Sg2's proprietary hospital database and INSIGHT analysis.

Evergreen Hospital Medical Center Snapshot

- 275-bed short-term acute hospital located in the suburbs of Seattle
- Catchment area of 2 million people
- Adult, paediatric and intensive care (20 beds) services as well as an accident and emergency (A&E) department
- 110,000 inpatient stays and outpatient appointments and 55,000 A&E attendances per year

This initial analysis identified a number of issues including:

- Patients commonly lacked a clearly documented follow-up appointment in discharge notes.
- Discharge notes were completed at inconsistent times and their level of detail varied widely, leading to confusion amongst primary care physicians and patients.
- Handoffs between medical teams were not standardised at admission or postdischarge, leading to medication mismanagement.

Following the success of this initial review, the lead hospitalist convened a team to share the findings and generate support for an ongoing improvement initiative.

Programme Components

From 2005 onwards a cycle of improvement has been established to reduce readmission rates:

- Semi-annual case reviews are conducted for patients who are readmitted within 30 days after an inpatient discharge.
- Ongoing reviews of readmissions are conducted and their scope has been expanded to include 4 specialties (hospital medicine, oncology, cardiology and nonhospitalist internal medicine). A data support and quality team gathers data from the

selected case notes (more than 300 per annum). Reviews are undertaken by a dedicated case reviewer for each of the 4 specialties of the medical team and for individual physicians. A physician champion reviews trends and presents the data to fellow physicians.

- Since 2009, 30-day readmission rates have been incorporated into the annual consultant physician performance evaluations.
- Physicians responsible for readmitting patients have been tasked with notifying original discharging physicians of readmission causes. Analysis has found that 44% of patients are readmitted for infections, with pneumonia accounting for 46% of those readmissions, followed by urinary tract infections (26%).
- Each subspecialty is encouraged to use the data to develop an explicit action plan with financial and management support from the medical director. For example, the hospitalist team now consults with the hospital's heart failure team on any patient with a secondary diagnosis of chronic heart failure. Data are used to link high readmission rates for these patients to variations in discharge instructions regarding when to restart diuretics.

Implementation Considerations

Over the past 5 years, Evergreen's hospitalist team has gained valuable insights into what has caused their readmission rate to drop and what has helped them maintain their commitment to progress.

- It is critical to get the buy-in of physicians who have the most influence over their colleagues.
- It must be recognised that a portion of 30-day readmissions are attributable to patient frailty and inevitable disease trajectory, on which interventions are unlikely to have an impact.
- The dedicated case reviewer must have credibility with his or her fellow physicians.
- It is important to keep the programme visible through regularly scheduled reviews and to demonstrate outcomes to management stakeholders so that financial support is maintained as the project expands.
- A nonpunitive culture is essential. Simply showing the data often inspires improvement, even without a detailed action plan. Physicians take personal pride in the care that they deliver, and letting them know that they could perform at a higher level is the best way to consistently improve outcomes.

Transferable Learnings

Physicians and hospital staff planning to tackle readmissions should expect to take at least 1 year to fully implement any reduced readmission initiative. Vital components for success include:

- A dedicated clinician responsible for conducting case reviews and uncovering trends
- A physician champion to present data to fellow physicians and review trends
- A data support team responsible for gathering information on readmitted patients
- A medical director to advocate financial and management support
- A quality department to assist with utilisation review
- An electronic medical record with transcribed admission and discharge notes

Sources: Sg2 Analysis, 2011; US Census Bureau. State and county quick facts: King County, Washington. http://quickfacts.census.gov/qfd/states/53/53033.html. Accessed 28 April 2011; Evergreen Hospital Medical Center. www.evergreenhospital.org/body.cfm?id=78. Accessed 28 April 2011; HealthGrades.com. Evergreen Hospital Medical Center. www.healthgrades.com/hospital-directory/washington-wa-seattle/evergreen-hospital-medical-center-hgstfcea6bc6500124. Accessed 04 May 2011.

The Financial Case for Reducing 30-Day Emergency Readmissions

The impact of non payment for 30-day emergency readmissions eligible for the 2011/2012 PbR tariff penalty

Hospital Trust	PbR-Eligible 30-Day Emergency Readmissions[1]	% of Readmissions Returning Within:		Potential Loss in Income due to Readmissions Tariff Penalty Following:		Total Potential Lost Income[4]	Total Potential Lost Income as % of Total Tariff[5]
		7 Days	8–30 Days	Elective Admissions[2]	Nonelective Admissions[3]		
ROYAL FREE HAMPSTEAD NHS TRUST	4,670	59.29%	40.71%	£ 4,770,831	£ 1,845,443	£ 6,616,274	4.61%
AINTREE UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	5,667	46.13%	53.87%	£ 2,564,265	£ 2,370,837	£ 4,935,102	4.53%
ROYAL LIVERPOOL AND BROADGREEN UNIVERSITY HOSPITALS NHS TRUST	6,576	47.98%	52.02%	£ 3,122,212	£ 2,356,670	£ 5,478,883	4.27%
UNIVERSITY HOSPITAL BIRMINGHAM NHS FOUNDATION TRUST	5,963	50.58%	49.42%	£ 3,838,616	£ 2,492,315	£ 6,330,931	3.93%
SALFORD ROYAL NHS FOUNDATION TRUST	4,837	49.82%	50.18%	£ 2,974,737	£ 1,794,415	£ 4,769,152	3.79%
NORTHUMBRIA HEALTHCARE NHS FOUNDATION TRUST	8,396	49.89%	50.11%	£ 2,262,618	£ 3,620,229	£ 5,882,847	3.76%
TRAFFORD HEALTHCARE NHS TRUST	1,283	45.75%	54.25%	£ 763,588	£ 690,638	£ 1,454,226	3.75%
DORSET COUNTY HOSPITAL NHS FOUNDATION TRUST	2,497	49.58%	50.42%	£ 1,824,183	£ 998,636	£ 2,822,819	3.69%
HEART OF ENGLAND NHS FOUNDATION TRUST	13,358	55.13%	44.87%	£ 4,842,675	£ 5,212,146	£ 10,054,821	3.68%
BARKING, HAVERING AND REDBRIDGE UNIVERSITY HOSPITALS NHS TRUST	7,927	50.52%	49.48%	£ 3,261,767	£ 4,118,957	£ 7,380,724	3.63%
CITY HOSPITALS SUNDERLAND NHS FOUNDATION TRUST	5,615	42.90%	57.10%	£ 2,831,837	£ 1,966,341	£ 4,798,178	3.61%
THE ROYAL BOURNEMOUTH AND CHRISTCHURCH HOSPITALS NHS FOUNDATION TRUST	5,094	49.31%	50.69%	£ 3,256,432	£ 1,839,429	£ 5,095,861	3.61%
EALING HOSPITAL NHS TRUST	2,710	50.52%	49.48%	£ 924,737	£ 1,362,814	£ 2,287,551	3.60%
THE ROTHERHAM NHS FOUNDATION TRUST	3,693	46.22%	53.78%	£ 1,814,787	£ 1,493,352	£ 3,308,139	3.59%
UNIVERSITY HOSPITALS OF MORECAMBE BAY NHS TRUST	5,214	50.46%	49.54%	£ 2,243,971	£ 2,054,239	£ 4,298,210	3.55%
THE MID CHESHIRE HOSPITALS NHS FOUNDATION TRUST	4,186	48.02%	51.98%	£ 1,345,262	£ 1,599,289	£ 2,944,551	3.52%
WRIGHTINGTON, WIGAN AND LEIGH NHS FOUNDATION TRUST	4,822	48.67%	51.33%	£ 2,062,698	£ 2,153,571	£ 4,216,270	3.50%
ST HELENS AND KNOWSLEY TEACHING HOSPITALS NHS TRUST	6,106	48.98%	51.02%	£ 1,420,429	£ 2,176,649	£ 3,597,078	3.49%
NORTH WEST LONDON HOSPITALS NHS TRUST	5,556	50.22%	49.78%	£ 2,416,565	£ 2,851,273	£ 5,267,838	3.48%
WARRINGTON AND HALTON HOSPITALS NHS FOUNDATION TRUST	4,908	48.51%	51.49%	£ 1,671,674	£ 1,942,336	£ 3,614,010	3.40%
SOUTHEND UNIVERSITY HOSPITAL NHS FOUNDATION TRUST	4,485	46.71%	53.29%	£ 2,210,924	£ 2,131,387	£ 4,342,311	3.40%
PENNINE ACUTE HOSPITALS NHS TRUST	11,601	46.23%	53.77%	£ 4,651,087	£ 4,729,400	£ 9,380,487	3.40%
MAYDAY HEALTHCARE NHS TRUST	3,775	48.53%	51.47%	£ 1,415,400	£ 1,998,288	£ 3,413,688	3.40%
SOUTH TYNESIDE NHS FOUNDATION TRUST	1,993	40.74%	59.26%	£ 649,265	£ 1,019,473	£ 1,668,738	3.39%
WALSALL HOSPITALS NHS TRUST	3,139	45.81%	54.19%	£ 1,389,299	£ 1,441,182	£ 2,830,481	3.38%
THE HILLINGDON HOSPITAL NHS TRUST	3,560	52.28%	47.72%	£ 1,129,474	£ 1,667,752	£ 2,797,226	3.34%
ROYAL BERKSHIRE NHS FOUNDATION TRUST	3,597	48.82%	51.18%	£ 2,763,515	£ 1,501,580	£ 4,265,095	3.32%
ROYAL UNITED HOSPITAL BATH NHS TRUST	3,951	46.42%	53.58%	£ 1,779,484	£ 1,865,162	£ 3,644,646	3.31%
KETTERING GENERAL HOSPITAL NHS FOUNDATION TRUST	3,717	48.75%	51.25%	£ 1,448,048	£ 1,667,467	£ 3,115,515	3.29%

Hospital Trust	PbR-Eligible 30-Day Emergency Readmissions[1]	% of Readmissions Returning Within:		Potential Loss in Income due to Readmissions Tariff Penalty Following:		Total Potential Lost Income[4]	Total Potential Lost Income as % of Total Tariff[5]
		7 Days	8–30 Days	Elective Admissions[2]	Nonelective Admissions[3]		
BEDFORD HOSPITAL NHS TRUST	1,997	47.72%	52.28%	£ 936,127	£ 988,675	£ 1,924,802	3.29%
EAST KENT HOSPITALS UNIVERSITY NHS FOUNDATION TRUST	9,098	49.49%	50.51%	£ 3,170,631	£ 3,624,386	£ 6,795,018	3.29%
BARNSLEY HOSPITAL NHS FOUNDATION TRUST	3,574	43.56%	56.44%	£ 1,138,423	£ 1,439,233	£ 2,577,656	3.29%
SANDWELL AND WEST BIRMINGHAM HOSPITALS NHS TRUST	7,526	50.86%	49.14%	£ 2,707,806	£ 2,935,586	£ 5,643,391	3.28%
IMPERIAL COLLEGE HEALTHCARE NHS TRUST	8,438	48.73%	51.27%	£ 5,516,559	£ 4,215,229	£ 9,731,788	3.28%
GEORGE ELIOT HOSPITAL NHS TRUST	2,165	50.39%	49.61%	£ 773,098	£ 1,047,884	£ 1,820,982	3.27%
BLACKPOOL, FYLDE AND WYRE HOSPITALS NHS FOUNDATION TRUST	5,497	49.17%	50.83%	£ 2,309,584	£ 2,213,881	£ 4,523,465	3.27%
ASHFORD AND ST PETER'S HOSPITALS NHS TRUST	3,937	50.39%	49.61%	£ 1,886,664	£ 1,964,057	£ 3,850,721	3.26%
WEST MIDDLESEX UNIVERSITY HOSPITAL NHS TRUST	2,903	52.60%	47.40%	£ 668,354	£ 1,625,882	£ 2,294,236	3.24%
GATESHEAD HEALTH NHS FOUNDATION TRUST	3,234	42.18%	57.82%	£ 783,415	£ 1,649,331	£ 2,432,746	3.22%
HOMERTON UNIVERSITY HOSPITAL NHS FOUNDATION TRUST	2,566	53.47%	46.53%	£ 1,005,916	£ 1,219,094	£ 2,225,009	3.19%
YORK HOSPITALS NHS FOUNDATION TRUST	3,510	46.67%	53.33%	£ 1,730,517	£ 1,578,536	£ 3,309,053	3.18%
MID YORKSHIRE HOSPITALS NHS TRUST	7,232	46.71%	53.29%	£ 2,732,984	£ 3,066,300	£ 5,799,284	3.17%
SOUTHPORT AND ORMSKIRK HOSPITAL NHS TRUST	2,926	48.12%	51.88%	£ 1,212,498	£ 1,188,476	£ 2,400,975	3.16%
THE LEWISHAM HOSPITAL NHS TRUST	3,029	48.99%	51.01%	£ 1,104,544	£ 1,537,303	£ 2,641,847	3.15%
BRIGHTON AND SUSSEX UNIVERSITY HOSPITALS NHS TRUST	6,350	48.17%	51.83%	£ 2,394,811	£ 2,673,461	£ 5,068,273	3.15%
TAMESIDE HOSPITAL NHS FOUNDATION TRUST	2,832	45.27%	54.73%	£ 951,349	£ 1,370,113	£ 2,321,462	3.15%
EAST LANCASHIRE HOSPITALS NHS TRUST	6,341	48.95%	51.05%	£ 2,602,993	£ 2,512,500	£ 5,115,493	3.15%
CHESTERFIELD ROYAL HOSPITAL NHS FOUNDATION TRUST	3,577	46.30%	53.70%	£ 1,419,423	£ 1,477,568	£ 2,896,991	3.14%
DARTFORD AND GRAVESHAM NHS TRUST	2,636	49.73%	50.27%	£ 1,028,322	£ 1,407,185	£ 2,435,506	3.14%
BARNET AND CHASE FARM HOSPITALS NHS TRUST	6,225	50.67%	49.33%	£ 2,148,572	£ 3,119,807	£ 5,268,380	3.13%
STOCKPORT NHS FOUNDATION TRUST	4,770	46.90%	53.10%	£ 1,641,874	£ 2,097,645	£ 3,739,519	3.12%
THE QUEEN ELIZABETH HOSPITAL KING'S LYNN NHS TRUST	3,096	46.71%	53.29%	£ 1,293,288	£ 1,246,128	£ 2,539,416	3.10%
WIRRAL UNIVERSITY TEACHING HOSPITAL NHS FOUNDATION TRUST	5,604	47.73%	52.27%	£ 1,857,814	£ 2,283,951	£ 4,141,765	3.09%
LANCASHIRE TEACHING HOSPITALS NHS FOUNDATION TRUST	5,608	48.07%	51.93%	£ 3,164,818	£ 2,191,896	£ 5,356,713	3.07%
NORTH TEES AND HARTLEPOOL NHS FOUNDATION TRUST	4,686	43.62%	56.38%	£ 1,490,103	£ 1,887,593	£ 3,377,695	3.05%
SCARBOROUGH AND NORTH EAST YORKSHIRE HEALTH CARE NHS TRUST	1,974	49.24%	50.76%	£ 838,846	£ 888,817	£ 1,727,663	3.04%
NORTH MIDDLESEX UNIVERSITY HOSPITAL NHS TRUST	2,250	47.07%	52.93%	£ 822,067	£ 1,237,065	£ 2,059,132	3.04%
UNIVERSITY HOSPITAL OF NORTH STAFFORDSHIRE NHS TRUST	8,080	52.03%	47.97%	£ 3,249,749	£ 2,483,922	£ 5,733,671	3.03%
CALDERDALE AND HUDDERSFIELD NHS FOUNDATION TRUST	5,478	46.60%	53.40%	£ 1,770,477	£ 2,417,506	£ 4,187,984	3.02%
EPSOM AND ST HELIER UNIVERSITY HOSPITALS NHS TRUST	5,034	49.30%	50.70%	£ 2,196,401	£ 2,438,992	£ 4,635,393	3.02%
UNIVERSITY HOSPITALS COVENTRY AND WARWICKSHIRE NHS TRUST	6,618	47.69%	52.31%	£ 3,359,624	£ 2,853,442	£ 6,213,066	3.02%
COUNTESS OF CHESTER HOSPITAL NHS FOUNDATION TRUST	3,711	48.77%	51.23%	£ 1,416,582	£ 1,319,708	£ 2,736,290	3.01%

Hospital Trust	PbR-Eligible 30-Day Emergency Readmissions[1]	% of Readmissions Returning Within:		Potential Loss in Income due to Readmissions Tariff Penalty Following:		Total Potential Lost Income[4]	Total Potential Lost Income as % of Total Tariff[5]
		7 Days	8–30 Days	Elective Admissions[2]	Nonelective Admissions[3]		
THE WHITTINGTON HOSPITAL NHS TRUST	2,444	47.83%	52.17%	£ 903,143	£ 1,241,474	£ 2,144,617	3.01%
DERBY HOSPITALS NHS FOUNDATION TRUST	6,747	45.89%	54.11%	£ 3,232,571	£ 2,380,908	£ 5,613,479	2.99%
EAST AND NORTH HERTFORDSHIRE NHS TRUST	4,994	51.14%	48.86%	£ 1,977,925	£ 2,389,997	£ 4,367,922	2.97%
COUNTY DURHAM AND DARLINGTON NHS FOUNDATION TRUST	6,370	46.50%	53.50%	£ 2,223,331	£ 2,706,529	£ 4,929,860	2.97%
UNIVERSITY HOSPITAL OF SOUTH MANCHESTER NHS FOUNDATION TRUST	4,332	44.92%	55.08%	£ 2,281,704	£ 1,941,876	£ 4,223,579	2.96%
EAST CHESHIRE NHS TRUST	2,140	48.93%	51.07%	£ 639,352	£ 1,017,892	£ 1,657,244	2.96%
EAST SUSSEX HOSPITALS NHS TRUST	5,067	47.66%	52.34%	£ 1,970,162	£ 2,409,011	£ 4,379,173	2.96%
SHERWOOD FOREST HOSPITALS NHS FOUNDATION TRUST	3,904	42.78%	57.22%	£ 1,594,892	£ 1,624,820	£ 3,219,712	2.95%
SHEFFIELD TEACHING HOSPITALS NHS FOUNDATION TRUST	7,938	45.70%	54.30%	£ 5,388,798	£ 3,356,346	£ 8,745,144	2.94%
LEEDS TEACHING HOSPITALS NHS TRUST	13,374	48.57%	51.43%	£ 5,035,162	£ 4,984,440	£ 10,019,602	2.94%
ROYAL CORNWALL HOSPITALS NHS TRUST	5,063	51.37%	48.63%	£ 2,458,240	£ 1,980,292	£ 4,438,532	2.93%
DONCASTER AND BASSETLAW HOSPITALS NHS FOUNDATION TRUST	5,167	44.86%	55.14%	£ 2,275,723	£ 2,284,219	£ 4,559,942	2.93%
SOUTH LONDON HEALTHCARE NHS TRUST	6,907	50.33%	49.67%	£ 3,402,602	£ 3,555,423	£ 6,958,025	2.92%
SOUTH DEVON HEALTH CARE NHS FOUNDATION TRUST	3,067	48.91%	51.09%	£ 1,371,162	£ 1,210,918	£ 2,582,080	2.90%
ST GEORGE'S HEALTHCARE NHS TRUST	4,786	50.40%	49.60%	£ 3,292,016	£ 2,291,667	£ 5,583,683	2.90%
WESTERN SUSSEX HOSPITALS NHS TRUST	6,147	51.03%	48.97%	£ 2,569,076	£ 2,718,402	£ 5,287,478	2.90%
JAMES PAGET UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	2,266	47.93%	52.07%	£ 1,178,663	£ 965,698	£ 2,144,361	2.90%
GUY'S AND ST THOMAS' NHS FOUNDATION TRUST	5,766	48.51%	51.49%	£ 4,841,902	£ 2,265,390	£ 7,107,292	2.90%
ROYAL BOLTON HOSPITAL NHS FOUNDATION TRUST	3,478	46.00%	54.00%	£ 1,449,917	£ 1,482,998	£ 2,932,915	2.89%
BRADFORD TEACHING HOSPITALS NHS FOUNDATION TRUST	5,306	42.89%	57.11%	£ 2,347,896	£ 1,919,541	£ 4,267,438	2.89%
PORTSMOUTH HOSPITALS NHS TRUST	6,817	47.19%	52.81%	£ 2,773,573	£ 2,940,688	£ 5,714,262	2.89%
FRIMLEY PARK HOSPITAL NHS FOUNDATION TRUST	3,781	48.43%	51.57%	£ 1,930,502	£ 1,775,296	£ 3,705,798	2.88%
NOTTINGHAM UNIVERSITY HOSPITALS NHS TRUST	9,447	46.33%	53.67%	£ 4,119,709	£ 3,757,053	£ 7,876,761	2.88%
WHIPPS CROSS UNIVERSITY HOSPITAL NHS TRUST	3,887	47.67%	52.33%	£ 1,522,724	£ 1,733,388	£ 3,256,111	2.87%
NORTH CUMBRIA ACUTE HOSPITALS NHS TRUST	3,321	46.70%	53.30%	£ 1,732,896	£ 1,240,176	£ 2,973,072	2.87%
HINCHINGBROOKE HEALTH CARE NHS TRUST	1,509	43.61%	56.39%	£ 817,741	£ 657,288	£ 1,475,030	2.86%
MILTON KEYNES HOSPITAL NHS FOUNDATION TRUST	3,227	51.97%	48.03%	£ 913,873	£ 1,424,656	£ 2,338,528	2.86%
WORCESTERSHIRE ACUTE HOSPITALS NHS TRUST	5,578	50.39%	49.61%	£ 1,997,022	£ 2,540,013	£ 4,537,035	2.85%
ROYAL DEVON AND EXETER NHS FOUNDATION TRUST	4,219	50.20%	49.80%	£ 2,692,780	£ 1,390,568	£ 4,083,348	2.85%
AIREDALE NHS TRUST	2,213	45.32%	54.68%	£ 872,935	£ 864,007	£ 1,736,942	2.84%
WESTON AREA HEALTH NHS TRUST	1,492	47.39%	52.61%	£ 545,169	£ 706,710	£ 1,251,879	2.84%
SURREY AND SUSSEX HEALTHCARE NHS TRUST	3,930	54.89%	45.11%	£ 1,337,156	£ 1,773,534	£ 3,110,690	2.84%
CENTRAL MANCHESTER UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	5,921	49.03%	50.97%	£ 3,602,549	£ 2,167,642	£ 5,770,191	2.83%

Hospital Trust	PbR-Eligible 30-Day Emergency Readmissions[1]	% of Readmissions Returning Within:		Potential Loss in Income due to Readmissions Tariff Penalty Following:		Total Potential Lost Income[4]	Total Potential Lost Income as % of Total Tariff[5]
		7 Days	8–30 Days	Elective Admissions[2]	Nonelective Admissions[3]		
NORTHERN DEVON HEALTHCARE NHS TRUST	1,880	50.64%	49.36%	£ 933,232	£ 823,547	£ 1,756,780	2.83%
COLCHESTER HOSPITAL UNIVERSITY NHS FOUNDATION TRUST	3,453	46.51%	53.49%	£ 1,564,674	£ 1,541,703	£ 3,106,377	2.83%
SHREWSBURY AND TELFORD HOSPITAL NHS TRUST	4,229	46.75%	53.25%	£ 1,957,744	£ 1,973,324	£ 3,931,068	2.82%
BASILDON AND THURROCK UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	3,457	48.65%	51.35%	£ 1,860,942	£ 1,648,413	£ 3,509,355	2.82%
KING'S COLLEGE HOSPITAL NHS FOUNDATION TRUST	5,159	51.15%	48.85%	£ 3,125,901	£ 2,208,440	£ 5,334,341	2.82%
IPSWICH HOSPITAL NHS TRUST	3,156	47.28%	52.72%	£ 1,313,588	£ 1,320,459	£ 2,634,047	2.81%
UNITED LINCOLNSHIRE HOSPITALS NHS TRUST	6,325	45.17%	54.83%	£ 2,656,204	£ 2,817,927	£ 5,474,130	2.81%
MAIDSTONE AND TUNBRIDGE WELLS NHS TRUST	5,027	51.38%	48.62%	£ 1,494,557	£ 2,257,456	£ 3,752,013	2.80%
NORTHERN LINCOLNSHIRE AND GOOLE HOSPITALS NHS FOUNDATION TRUST	3,822	41.76%	58.24%	£ 2,033,952	£ 1,564,893	£ 3,598,844	2.80%
THE DUDLEY GROUP OF HOSPITALS NHS FOUNDATION TRUST	4,583	48.20%	51.80%	£ 1,707,956	£ 1,696,334	£ 3,404,290	2.79%
NEWHAM UNIVERSITY HOSPITAL NHS TRUST	3,007	57.20%	42.80%	£ 784,023	£ 1,250,547	£ 2,034,569	2.78%
NORTH BRISTOL NHS TRUST	4,887	51.26%	48.74%	£ 3,584,831	£ 2,030,135	£ 5,614,966	2.77%
BARTS AND THE LONDON NHS TRUST	4,792	50.25%	49.75%	£ 3,278,913	£ 2,230,163	£ 5,509,076	2.76%
MID ESSEX HOSPITAL SERVICES NHS TRUST	4,672	48.63%	51.37%	£ 1,665,918	£ 1,944,875	£ 3,610,793	2.76%
HARROGATE AND DISTRICT NHS FOUNDATION TRUST	1,618	45.67%	54.33%	£ 1,042,593	£ 648,997	£ 1,691,590	2.76%
YEOVIL DISTRICT HOSPITAL NHS FOUNDATION TRUST	1,811	46.88%	53.12%	£ 685,434	£ 794,033	£ 1,479,467	2.75%
WINCHESTER AND EASTLEIGH HEALTHCARE NHS TRUST	1,882	44.58%	55.42%	£ 954,346	£ 886,738	£ 1,841,084	2.75%
CAMBRIDGE UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	4,827	48.29%	51.71%	£ 3,734,144	£ 1,966,964	£ 5,701,108	2.74%
MID STAFFORDSHIRE NHS FOUNDATION TRUST	2,319	47.05%	52.95%	£ 1,086,457	£ 932,845	£ 2,019,302	2.74%
SALISBURY NHS FOUNDATION TRUST	2,444	49.47%	50.53%	£ 1,398,060	£ 1,046,054	£ 2,444,115	2.72%
SOUTH WARWICKSHIRE GENERAL HOSPITALS NHS TRUST	2,025	45.53%	54.47%	£ 933,421	£ 949,159	£ 1,882,579	2.71%
THE PRINCESS ALEXANDRA HOSPITAL NHS TRUST	2,774	50.83%	49.17%	£ 1,244,805	£ 1,263,878	£ 2,508,683	2.71%
NORTHAMPTON GENERAL HOSPITAL NHS TRUST	3,327	48.06%	51.94%	£ 1,848,363	£ 1,354,100	£ 3,202,463	2.71%
PETERBOROUGH AND STAMFORD HOSPITALS NHS FOUNDATION TRUST	3,251	45.77%	54.23%	£ 1,482,049	£ 1,446,263	£ 2,928,312	2.70%
THE ROYAL WOLVERHAMPTON HOSPITALS NHS TRUST	4,044	46.56%	53.44%	£ 2,169,969	£ 1,539,959	£ 3,709,927	2.67%
HEATHERWOOD AND WEXHAM PARK HOSPITALS NHS FOUNDATION TRUST	3,396	50.62%	49.38%	£ 1,528,425	£ 1,534,647	£ 3,063,072	2.66%
GLOUCESTERSHIRE HOSPITALS NHS FOUNDATION TRUST	5,517	45.97%	54.03%	£ 3,273,761	£ 2,203,791	£ 5,477,553	2.64%
WEST HERTFORDSHIRE HOSPITALS NHS TRUST	3,216	50.47%	49.53%	£ 1,703,975	£ 1,611,792	£ 3,315,767	2.63%
SOUTH TEES HOSPITALS NHS FOUNDATION TRUST	6,681	44.51%	55.49%	£ 3,150,657	£ 2,483,854	£ 5,634,511	2.63%
BASINGSTOKE AND NORTH HAMPSHIRE NHS FOUNDATION TRUST	1,994	49.25%	50.75%	£ 1,060,316	£ 859,617	£ 1,919,933	2.62%
ROYAL SURREY COUNTY NHS FOUNDATION TRUST	2,304	47.83%	52.17%	£ 1,535,936	£ 1,095,599	£ 2,631,535	2.61%
HULL AND EAST YORKSHIRE HOSPITALS NHS TRUST	6,374	43.14%	56.86%	£ 3,144,739	£ 2,512,156	£ 5,656,894	2.58%
THE NEWCASTLE UPON TYNE HOSPITALS NHS FOUNDATION TRUST	7,625	46.22%	53.78%	£ 4,856,769	£ 2,715,612	£ 7,572,381	2.58%

Hospital Trust	PbR-Eligible 30-Day Emergency Readmissions[1]	% of Readmissions Returning Within:		Potential Loss in Income due to Readmissions Tariff Penalty Following:		Total Potential Lost Income[4]	Total Potential Lost Income as % of Total Tariff[5]
		7 Days	8–30 Days	Elective Admissions[2]	Nonelective Admissions[3]		
WEST SUFFOLK HOSPITALS NHS TRUST	2,881	51.20%	48.80%	£ 821,977	£ 1,216,753	£ 2,038,730	2.58%
TAUNTON AND SOMERSET NHS FOUNDATION TRUST	3,012	47.81%	52.19%	£ 1,590,310	£ 1,182,947	£ 2,773,257	2.55%
OXFORD RADCLIFFE HOSPITALS NHS TRUST	6,660	49.17%	50.83%	£ 3,543,209	£ 2,655,185	£ 6,198,394	2.55%
MEDWAY NHS FOUNDATION TRUST	3,782	49.23%	50.77%	£ 1,001,631	£ 1,629,358	£ 2,630,989	2.54%
UNIVERSITY HOSPITALS OF LEICESTER NHS TRUST	10,666	46.04%	53.96%	£ 4,150,143	£ 3,938,269	£ 8,088,412	2.51%
NORFOLK AND NORWICH UNIVERSITY HOSPITALS NHS FOUNDATION TRUST	5,277	47.02%	52.98%	£ 2,909,527	£ 2,019,165	£ 4,928,692	2.50%
CHELSEA AND WESTMINSTER HOSPITAL NHS FOUNDATION TRUST	2,592	57.68%	42.32%	£ 1,410,325	£ 1,161,964	£ 2,572,289	2.48%
BURTON HOSPITALS NHS FOUNDATION TRUST	2,237	48.73%	51.27%	£ 563,903	£ 1,079,845	£ 1,643,747	2.44%
GREAT WESTERN HOSPITALS NHS FOUNDATION TRUST	3,422	46.55%	53.45%	£ 1,225,224	£ 1,503,190	£ 2,728,414	2.44%
PLYMOUTH HOSPITALS NHS TRUST	5,102	46.81%	53.19%	£ 2,538,089	£ 2,059,124	£ 4,597,213	2.42%
LUTON AND DUNSTABLE HOSPITAL NHS FOUNDATION TRUST	2,848	44.94%	55.06%	£ 1,177,756	£ 1,453,318	£ 2,631,074	2.40%
POOLE HOSPITAL NHS FOUNDATION TRUST	3,178	48.80%	51.20%	£ 970,332	£ 1,469,814	£ 2,440,146	2.38%
BUCKINGHAMSHIRE HOSPITALS NHS TRUST	3,602	57.38%	42.62%	£ 1,650,091	£ 1,532,812	£ 3,182,903	2.35%
UNIVERSITY HOSPITALS BRISTOL NHS FOUNDATION TRUST	4,723	48.63%	51.37%	£ 2,635,885	£ 1,850,940	£ 4,486,825	2.32%
KINGSTON HOSPITAL NHS TRUST	2,617	59.80%	40.20%	£ 884,120	£ 1,291,221	£ 2,175,341	2.24%
SOUTHAMPTON UNIVERSITY HOSPITALS NHS TRUST	5,676	48.48%	51.52%	£ 2,754,088	£ 2,354,826	£ 5,108,913	2.22%
ISLE OF WIGHT NHS PCT	1,056	41.32%	58.68%	£ 337,614	£ 582,042	£ 919,657	2.21%
HEREFORD HOSPITALS NHS TRUST	1,438	52.92%	47.08%	£ 617,711	£ 583,277	£ 1,200,989	2.20%
UNIVERSITY COLLEGE LONDON NHS FOUNDATION TRUST	3,243	45.67%	54.33%	£ 3,013,209	£ 1,295,494	£ 4,308,703	2.02%

Baseline numbers from HES inpatient activity data 2009/2010 for acute and foundation trusts in the NHS in England, excluding specialist trusts. PbR = Payment by Results.

[1] PbR penalty-eligible emergency readmissions to any provider within 30 days of a prior admission were calculated according to 2011/2012 PbR tariff guidance. See accompanying methodology document for details.

[2] Under 2011/2012 PbR rules, providers will not be paid for penalty-eligible 30-day emergency readmissions following an elective admission. An estimated tariff penalty was therefore calculated as the total tariff for eligible emergency readmissions to any provider that followed elective admissions to each provider in turn. Tariff was calculated according to 2011/2012 PbR guidance. See accompanying methodology document for details.

[3] Under 2011/2012 PbR rules, payment for penalty-eligible 30-day readmissions following a nonelective admission will be subject to local negotiation, with a proposed 25% reduction in these readmissions compared with 2010/2011. An estimated tariff penalty for each provider was therefore calculated as the average tariff for penalty-eligible readmissions to any provider that followed a nonelective admission to the provider, multiplied by 25% of the total number of these readmissions associated with the provider. Tariff was calculated according to 2011/2012 PbR guidance. See accompanying methodology document for details.

[4] Total potential tariff penalty is the sum of the potential penalty for readmissions following elective admissions (see 2) and following nonelective admissions (see 3).

[5] Total tariff for each provider was calculated according to 2011/2012 PbR guidance.

Data Source

All analyses were based on Hospital Episode Statistics (HES) data from April 2009 to March 2010. Sg2 understands that trusts will have access to other data sources and we are happy to work with you to understand how this may influence our analyses.

Definition of 30-Day Emergency Readmissions

Sg2 defined 30-day emergency readmissions according to the methodology outlined in the Department of Health Payment by Results (PbR) Guidance published 18th February 2011, which is summarised below.

Emergency readmissions were identified by flagging any emergency admission that was preceded by an admission for the same patient with a discharge date occurring within the 30 days preceding the emergency admission. In cases where there was more than 1 admission by the patient in the 30 days prior to the emergency readmission, the admission closest in time to the emergency readmission was designated to be the initial admission. The initial and emergency admissions could be to any provider in the NHS in England. As per the PbR rules, when a patient was readmitted to a different NHS trust, this readmission was "attributed" to the provider organisation where the initial spell of treatment took place.

Emergency readmissions with certain characteristics are excluded from the PbR readmissions penalty. Details of these characteristics can be found in Table 1. Readmissions which had any of these attributes were excluded from the readmissions analysis.

In order to convey the true magnitude of the potential financial penalty to which trusts will be exposed under the 2011/2012 PbR guidance, given their actual numbers of PbR-eligible readmissions in 2009/2010, the readmissions analysis has not been risk-adjusted.

Total Tariff

Throughout this analysis, 2009/2010 data were assigned the 2011/2012 local payment tariff. The total tariff for each provider was therefore the sum of 2011/2012 PbR tariff for each tariff-eligible spell that occurred in 2009/2010. Local payment tariff calculations incorporated base tariff, emergency adjustments, long-stay payments, specialist service top-ups, market force factors and, wherever possible, best-practice tariffs.

Table 1: Characteristics of Emergency Readmissions Excluded From 2011/2012 PbR Tariff Penalty

Characteristic	Detail
Young Child	Age of readmission <4 years
Maternity and Childbirth	Initial admission or readmission HRG of subchapter NZ (obstetric medicine)
Self-Discharge Against Medical Advice	Initial admission discharge method code 2
Transport Accident	Secondary diagnosis ICD-10 code beginning with 'V'
Severe Multiple Trauma	Readmission HRG VA14 (multiple trauma diagnoses, with interventions, score 30–44) or VA15 (multiple trauma diagnoses, with interventions, score ≥45)
Cancer	Primary diagnosis of cancer in the initial admission or readmission: ICD-10 C00-C97, D37-D48 and/or initial admission or readmission has unbundled HRG of subchapter SB (chemotherapy) or SC (radiotherapy)
Emergency Transfer	Readmission admission method code 28 (emergency transfer from an initial admission)

HRG = Healthcare Resource Group; ICD = International Classification of Diseases.

Tariff Penalty

To calculate the potential tariff penalty to which providers will be subject under the 2011/2012 guidance, 2009/2010 spells were assigned the 2011/2012 local payment tariff.

As per the PbR rules, all tariff penalties were imposed upon the provider of the initial admission, no matter where the patient was readmitted.

The 2011/2012 PbR guidance states that, with the exception of the exclusions in Table 1, there will be no payment for emergency readmissions occurring within 30 days of an elective admission. This includes ordinary elective, day-case and regular day/night admissions. The potential penalty for each provider for emergency readmissions occurring within 30 days of an elective admission was therefore calculated as follows:

Total potential tariff penalty for *Provider* relating to emergency readmissions following an elective admission	=	Sum of 2011/2012 tariff for emergency admissions to any provider that occurred within 30 days of an elective admission to *Provider* and did not have any of the exclusion characteristics in Table 1

The 2011/2012 PbR guidance states that, with the exception of the exclusions in Table 1, the payment for emergency readmissions occurring within 30 days of a nonelective admission is open to local negotiation. Providers and commissioners are to agree upon a threshold for emergency readmissions following nonelective admissions, beyond which the provider will not be paid. The recommended threshold is 75% of the total number of emergency readmissions that occurred within 30 days of nonelective admissions in the preceding financial year. For the purposes of this analysis, every provider was assumed to incur the maximum penalty of a 25% reduction in emergency readmissions following a nonelective admission. The potential penalty for each provider for emergency readmissions occurring within 30 days of a nonelective admission was therefore calculated as follows:

Total potential tariff penalty for *Provider* relating to emergency readmissions following a nonelective admission = Average 2011/2012 tariff for emergency admissions to any provider that occurred within 30 days of a nonelective admission to *Provider* and did not have any of the exclusion characteristics in Table 1 × Total number of emergency admissions to any provider that occurred within 30 days of a nonelective admission to *Provider* and did not have any of the exclusion characteristics in Table 1 × 25%

7-Day Emergency Readmissions

A readmission occurring within 7 days of the initial admission was defined as one where the admission date of the readmission was 7 or fewer days after the discharge date of the initial admission. The discharge date of the initial admission was defined as day 0.

30-Day Emergency Readmissions

A readmission occurring within 30 days of the initial admission was defined as one where the admission date of the readmission was 30 or fewer days after the discharge date of the initial admission. The discharge date of the initial admission was defined as day 0.

health care intelligence

The Value of Sg2

Who We Are

Sg2 is a global, future-focused health care intelligence and solutions firm. Sg2 provides comprehensive, integrated systems that utilise advanced analytics and health care experts to improve performance and maximise clinical effectiveness. Sg2 has a unique model that combines deep clinical and care delivery expertise with actionable strategic insight to help NHS organisations make informed business decisions.

Sg2's team includes clinicians, PhDs, nurse executives and health care leaders with extensive strategic, operational, clinical, academic, technological and financial experience. NHS clients have included Strategic Health Authorities, Primary Care Trusts, Acute Trusts, Foundation Trusts and national-level organisations.

In the context of the ongoing changes in health policy and the need for efficiency savings and quality improvement, Sg2's clinically grounded and analytical approach has enabled our NHS clients to:

- Increase care coordination and clinical quality by providing actionable and cost-effective strategies to move care to the community
- Better prepare for future changes in clinical services by using our vetted, expert-led analytics and forecasting solutions
- Adopt innovative care delivery models informed by our global experience to meet clinical, operational and strategic goals

Systems of Care Focus

As health care services around the world begin to shift from the acute to the community setting, optimal performance requires seamless coordination, integration and management of diseases across all sites of care. Throughout the world, Sg2's solutions have been based on analysing the whole system of care—from the patient, to the general practitioner and community provider, to the secondary and tertiary care hospitals and rehabilitation centre—to identify opportunities for performance improvement and quality advancement.

Who Partners With Sg2?

Sg2 has provided solutions and guidance to more than 1,200 organisations in 10 countries.

Asia/Australia

Bumrungrad International Hospital, Thailand
Department of Health, Victoria, Australia
Queensland Health, Australia
Sunway Medical Centre, Malaysia
Western Australia Department of Health

North America

Duke University Health System, US
Johns Hopkins Health System, US
Mayo Clinic, US
Partners HealthCare System, US

Middle East

Hamad Medical Corporation, Qatar
Sidra Medical and Research Center, Qatar

United Kingdom

Imperial College Healthcare NHS Trust
NHS Central Lancashire
NHS Halton and St Helens
NHS North West
Royal Brompton & Harefield NHS Foundation Trust
South Devon Healthcare NHS Foundation Trust
University Hospitals Bristol NHS Foundation Trust
University Hospitals Coventry and Warwickshire NHS Trust

Worldwide

GE Healthcare
Philips Medical Systems
Toshiba Medical Systems Corporation

The Value of Sg2

Sg2 Solutions for the NHS

- **Clinical Pathway Optimisation** utilises Sg2's clinical expertise, analytics and knowledge of international leading practices. Sg2 analyses the current clinical pathway across the care continuum in specific health economies and identifies gaps and opportunities for optimising the linkages between primary and secondary care, improving care quality and efficiency, and increasing patient satisfaction and outcomes.
- **Analytical Solutions** based on Sg2's proprietary tools, help organisations analyse their current performance, identify improvement and cost-saving opportunities, and understand future demand for NHS services and the impact of selected interventions on quality and efficiency. Sg2's analytics have been vetted by our expert team and have been used by many leading health care organisations across the world to support their long-term strategic goals.
- **Clinical Strategic Planning** provides a framework for creating forward-thinking plans for clinical services and building consensus between clinicians, managers and commissioners around a common vision. This is drawn from Sg2's experience in clinical engagement and international health care delivery.
- **Memberships** allow clients to have unlimited access to Sg2 expertise and research on global leading practices. The membership includes real-time interaction with Sg2 experts and an extensive library of reports that analyse clinical advancements and care delivery innovations. Sg2's research and expertise span 10 countries and the major clinical disciplines, including cancer, cardiovascular services, neurosciences, orthopaedics, paediatrics and diagnostic services.

How Is Sg2 Different?

Sg2 is future-focused.

Sg2 continuously scans the health care horizon to anticipate the demographic, technological, clinical and policy changes that will transform hospitals and health care systems.

Sg2 is expert-led.

Sg2 is the only firm that integrates expertise grounded in the major clinical disciplines into its work with clients to support critical decision making and uncovering challenges and opportunities.

Sg2 is data-driven and action-oriented.

All of Sg2's solutions provide the powerful combination of expert insight and proprietary analytical tools to inform critical decision making for today and tomorrow.

Sg2 is global.

Sg2's international business based in London includes work with leading organisations in more than 10 countries around the world, including the United Kingdom, Hong Kong, Thailand, Australia, Qatar and the US.

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