

Data Linkage to Reduce Severe Hypoglycaemia

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Background

The Scottish Ambulance Service (SAS) are working with NHS Fife Diabetes Service with the support of SCI-Diabetes, the University of Dundee, National Services Scotland and MSD to better manage hypoglycaemia in their patients with diabetes. The emphasis is on appropriate follow-up of patients who experience a hypoglycaemic event that results in an ambulance call-out. The aim of the project is to improve patient care, increase capacity and upskill attending paramedics.

Aims & Objectives

Having access to real-time data and information from health and care records is vital to supporting health and care providers to improve outcomes. The data shown in SCI-Diabetes allows the patients identified to be contacted to discuss prevention of further episodes. This leads to improvements in patient safety and reduces ambulance service workload through reduction in call outs.

Routinely-collected patient data are securely shown in the SCI-Diabetes web interface alongside the ambulance service callout reports, to allow the clinical team to review medical history and identify approaches to make necessary treatment changes, or to provide further education to those individuals affected at the point of contact.

Methodology

The NHS Fife Diabetes team has defined a triage process to effectively follow-up and manage people with diabetes who have called out the SAS to manage a hypoglycaemic event.

National Services Scotland processes ambulance service reports, uses Emergency Care Summary data to identify CHI number and sends SCI-Diabetes real-time messages where reports contain a blood glucose result. SCI-Diabetes then links the reports to the national diabetes system and presents data back to the Fife team to manage.

Results

Analysis of NHS Fife callout reports containing a blood glucose <4 mmol/L (indicating a hypoglycaemic event) have reduced when comparing data from 2017 (1044 callouts for 672 patients) and 2018 (756 callouts for 488 patients). This equates to a 38% reduction in callouts for hypoglycaemic events in NHS Fife. This reduction equates to an approximate £230k saving for NHS Fife and the SAS, which could extrapolate to a £5.05m cost saving when rolled out across the whole of NHS Scotland. Plans for wider rollout are currently under development, pending the outcome of this study.

Anecdotal evidence from the NHS Fife Diabetes team indicates that the availability of SAS callout reports also allowed them to identify and contact patients who have been admitted to hospital and then discharged over a weekend. Previously these patients were not known to the service and appropriate follow-up would not be routinely arranged.

* The project is a result of a joint working project between MSD and the Scottish Ambulance Service

Patient Name	Age	Diabetes Type (duration)	Incident Date	Blood Glucose (mmol/L)	Workflow	HbA1c (mmol/mol)	sGFR	Follow up status	JAMPDS	Location	Important Status
[Redacted]	77	Type 2 Diabetes Mellitus (10y)	22-Jan-2019	2.8	Follow Up Not Required	77	< 60	Follow Up Not Required	Diabetic Patient Not Alert	[Redacted]	[Redacted]
[Redacted]	52	Type 2 Diabetes Mellitus (15y 7m)	15-Apr-2018	2.1	Follow Up Not Required	52	26	Follow Up Not Required	Diabetic Patient Not Alert	[Redacted]	[Redacted]
[Redacted]	82	Type 2 Diabetes Mellitus (17y 7m)	15-Oct-2018	2.1	Follow Up Not Required	82	26	Follow Up Not Required	Continuous or Multiple Fitting	[Redacted]	[Redacted]
[Redacted]	85	Type 1 Diabetes Mellitus (10y)	02-Jan-2019	1.8	Follow Up Not Required	85	< 60	Follow Up Not Required	Continuous or Multiple Fitting	[Redacted]	[Redacted]
[Redacted]	108	Type 2 Diabetes Mellitus (14y 9m)	10-Feb-2019	3.7	Patient Under Care of a GP	108	< 60	Follow Up Not Required	Telephone Consultation	[Redacted]	[Redacted]
[Redacted]	55	Type 2 Diabetes Mellitus (21y)	25-Oct-2018	1.4	Follow Up Not Required	55	26	Follow Up Not Required	Six Person Abnormal Breathing	[Redacted]	[Redacted]
[Redacted]	59	Type 2 Diabetes Mellitus (25y)	04-Nov-2018	2.3	Follow Up Not Required	59	59	Follow Up Not Required	Potentially Dangerous Area Injuries on Ground or Floor	[Redacted]	[Redacted]
[Redacted]	80	Type 2 Diabetes Mellitus (27y)	04-Oct-2018	2.3	Follow Up Not Required	80	59	Follow Up Not Required	Potentially Dangerous Area Injuries on Ground or Floor	[Redacted]	[Redacted]
[Redacted]	87	Type 1 Diabetes Mellitus (25y)	17-Jul-2018	1.9	Follow Up Not Required	87	< 60	Follow Up Not Required	Diabetic Patient with Abnormal Behaviour	[Redacted]	[Redacted]
[Redacted]	85	Type 1 Diabetes Mellitus (19y)	11-Jul-2018	1.9	Follow Up Not Required	85	< 60	Follow Up Not Required	Diabetic Patient with Abnormal Behaviour	[Redacted]	[Redacted]
[Redacted]	85	Type 1 Diabetes Mellitus (12y 2m)	05-Jan-2019	1.9	Follow Up Not Required	85	< 60	Follow Up Not Required	Not Alert after Falling - Environmental Problems	[Redacted]	[Redacted]
[Redacted]	41	Type 2 Diabetes Mellitus (12y 2m)	27-Nov-2017	3.8	Follow Up Not Required	41	< 60	Follow Up Not Required	Emergency Response Requested	[Redacted]	[Redacted]
[Redacted]	65	Type 1 Diabetes Mellitus (45y)	15-Aug-2018	1.3	Follow Up Not Required	65	< 60	Follow Up Not Required	Potentially Dangerous Potential inj on or Ground or Floor	[Redacted]	[Redacted]
[Redacted]	72	Type 1 Diabetes Mellitus (45y)	10-Jan-2019	2.3	Follow Up Not Required	72	< 60	Follow Up Not Required	Diabetic Unconscious	[Redacted]	[Redacted]
[Redacted]	47	Type 1 Diabetes Mellitus (28y)	11-Apr-2018	2.7	Follow Up Not Required	47	< 60	Follow Up Not Required	Intermittent Diabetic - No Hoarse Symptoms	[Redacted]	[Redacted]
[Redacted]	47	Type 1 Diabetes Mellitus (28y)	11-Apr-2018	2.7	Follow Up Not Required	47	< 60	Follow Up Not Required	Intermittent Diabetic - No Hoarse Symptoms	[Redacted]	[Redacted]

Workflow section
Patient's patient status: [Redacted]
Follow up status: [Redacted]
Comment history: [Redacted]

Workflow Comments
[Redacted]

Completion Date
When saved this record will be marked as: Recorded On: 16-Apr-2019 By: [Redacted]

