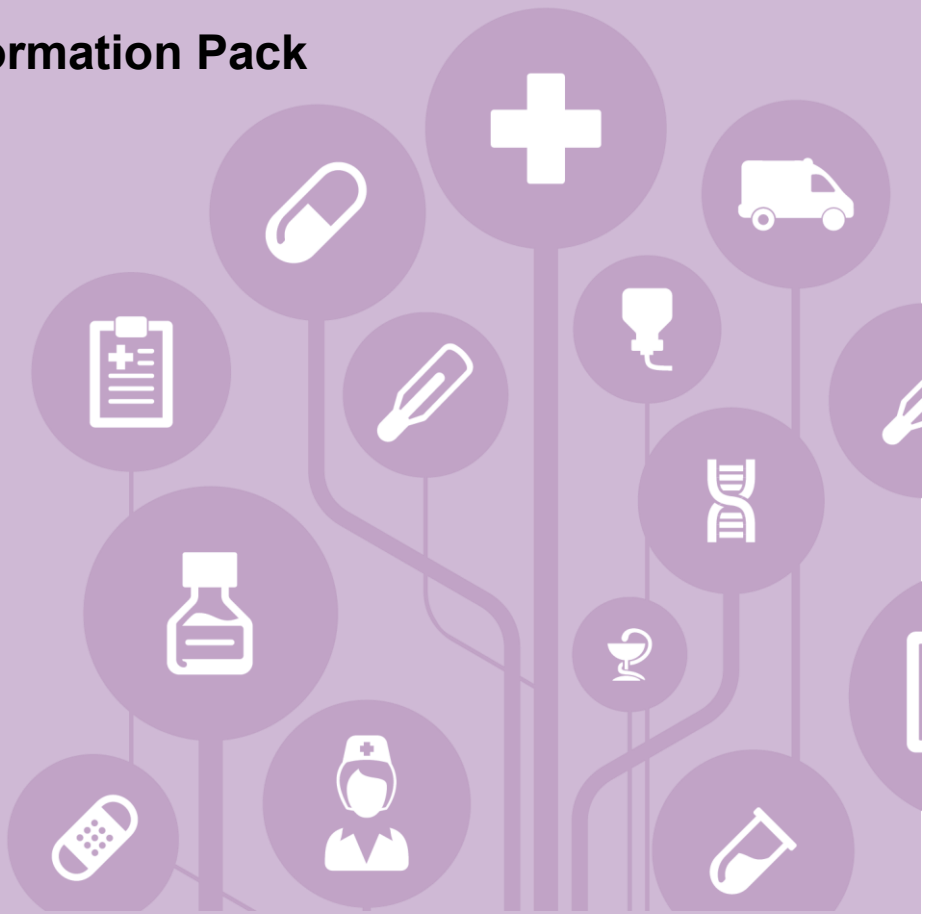
RCEM
Royal College of Emergency Medicine

TIME CRITICAL MEDICATIONS

2023-27 NATIONAL QUALITY IMPROVEMENT PROGRAMME

Year 3 (2026) Information Pack



Published:
January 2026

Quick guide to running an awesome QIP

Form your QIP Team
RCEM recommends a multidisciplinary QI team

Standards
Click here to find the standards.

Questions
Click here to find the questions.

Inclusion criteria
Click here to find the inclusion and exclusion criteria

Sample size
Recommended sample size: Please collect data on a minimum of 6 eligible cases per week.

Please see the data collection section for more details

Data entry portal
The link to the data entry portal will be made available before the 31st of January 2025

Data frequency
Recommended: enter cases each week.
Alternative: If your ED will find weekly data entry difficult enter data fortnightly instead.

Data Collection Period*
Data should be collected on patients attending **from 1 January 2026 – 31 December 2026**

*For the interim reports data collection period, please see the data collection section for details.

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PILOT

WELCOME

This document tells you everything you need to know if your Emergency Department (ED) wishes to participate in the 2023/27 RCEM national quality improvement program (QIP) on Time Critical Medications (TCMs).

INTRODUCTION

Overview

Time Critical Medication is currently not a priority in Emergency Departments, it is a concept that is not widely understood and one which is not applied well in clinical practice.

In 2010, the National Patient Safety Agency (NPSA), issued an alert regarding the omission and delayed administration of medicines in hospitals, but despite trusts compiling lists and guidance and regularly auditing this there are still numerous incidents around delayed or omitted doses of TCM.

Following on from this, in 2011 The Institute for Safe Medication Practices defined TCM as: 'Time Critical scheduled medications are those where early or delayed administration of maintenance doses of greater than 30 minutes before or after the scheduled dose may cause harm or result in substantial sub-optimal therapy or pharmacological effect.'

In regards to the Emergency Department, a time-critical **scheduled** medication is essentially a medicine that the patient is already on, all doses of which will need to be prescribed and administered in the ED throughout their stay.

This has never been looked at nationally despite The Royal College of Emergency Medicine (RCEM) producing a safety alert in 2017 for people with Parkinson's, IDDM, and Epilepsy on TCM.

This National TCM QIP will follow the RCEM Safer Medicines Committee guidelines on TCM using the mnemonic MISSED.

- Movement Disorders (Parkinson's MG)
- Immunosuppressants
- Sugar – Insulin
- Steroids
- Epilepsy
- DOACs, anti-coagulants, and warfarin

The message is clear: 'A MISSED time critical medication causes harm in the Emergency Department (ED).'

In Year 2 Jan 2025 to Dec 2025, we will be collecting data for people living with Parkinson's who take oral levodopa medication and for patients living with Diabetes Mellitus on s/c insulin.

Why Levodopa and Insulin

Levodopa

Even a 30-minute delay in taking medication can lead to profound health implications for a person with Parkinson's. In 2017, The National Institute for Health and Care Excellence (NICE) recognised the importance of levodopa admission as an area for quality improvement within their Parkinson's quality standard [2].

NICE guidance says that when a person with Parkinson's is admitted to a hospital, their medication should be given at the appropriate times, which may mean people being allowed to self-medicate [3].

People with Parkinson's on levodopa-based medication can be taking medication up to every two hours. The timing of these medications alters from person to person. This is because everyone's Parkinson's symptoms are different and, therefore, need different medication management regimes. We need to apply the principle of personalised medicine in the ED [4] [5].

Missed or delayed doses of Parkinson's medication can lead to anxiety, an increase in symptoms and psychological harm. They also lead to increased morbidity, mortality, length of stay and increasing the cost of care for hospitals [6] [7] [8]. Evidence shows that missed doses of Parkinson's medication can increase the length of stay in hospital by an average of four days. People with Parkinson's are also more likely to be readmitted to hospital following an extended stay in hospital due to delayed or missed medication.

Previous Parkinson's disease (PD) Quality Improvement Projects have focussed on ward patients and have not included the ED [4]. With an increased (LoS) in the ED, it is vital that we ensure the patients with PD get their time critical medication on time. As ED waiting times increase, in April 2022, only 72 per cent of people were seen within four hours [9]; this problem is going to get worse, confounded by the fact that the prevalence and incidence of PD are set to double to 256,609 by 2065 nationally.

In 2021/22, the total cost of emergency admissions for people with Parkinson's was £267 million, making up a huge 86% of the cost of all admissions for people with Parkinson's. For a person with Parkinson's admitted as an emergency in 2021/22, their average (mean) length of stay was 10.2 days.

In 2020/21, compared to the average cost per person in England of £4,842, the average cost of a non-elective admission of a person with Parkinson's was £6,395 in 2021/22.

Insulin

Type 1 Diabetes is common in the ED and causes an increased LoS and mortality. However, 92% of people admitted are not admitted as a result of their diabetes [10].

In 2017, 2,200 people suffered from Diabetic Ketoacidosis (DKA) in UK hospitals due to under recognition and under treatment with insulin. In total, there were 260,000 medication errors involving Insulin, which could have resulted in serious harm. As a healthcare community, we can and must do better for people with diabetes in hospitals [10].

Time Critical **scheduled** Insulin Medication management in the ED aims to prevent glycaemic emergencies such as diabetic ketoacidosis and hyperosmolar hyperglycaemic state or hypoglycaemia

All short, medium, and long-acting Insulins should be given in the ED when the patient usually takes them, which is normally 30 minutes before and after food for short and medium acting insulins.

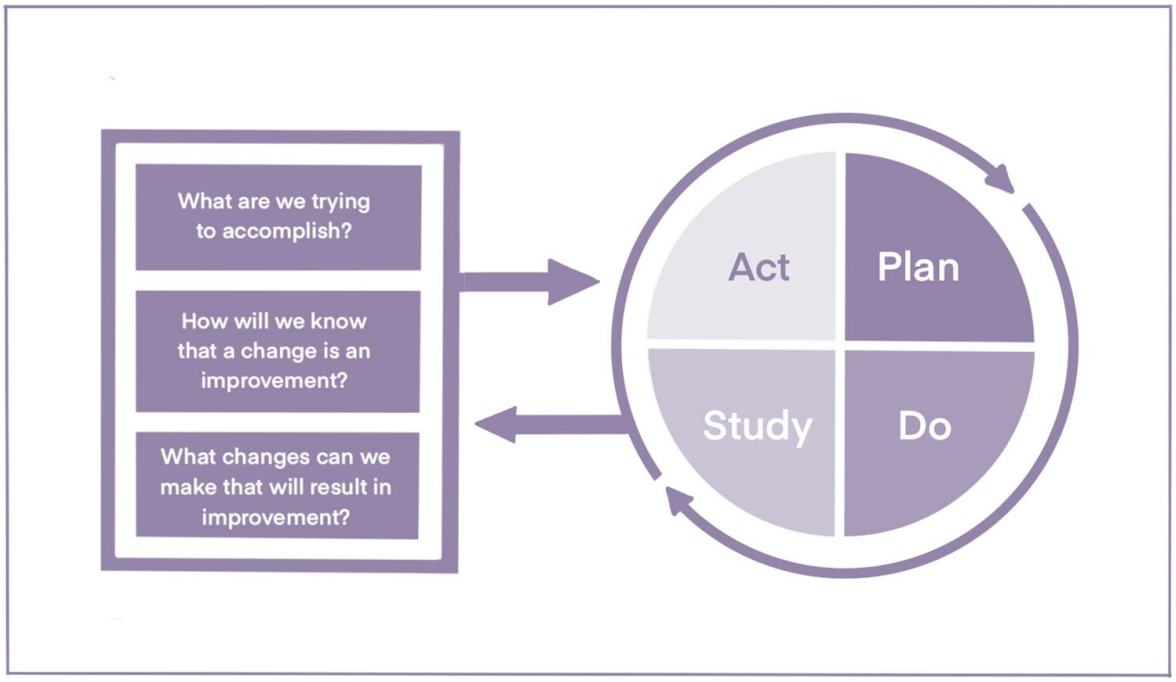
QUALITY IMPROVEMENT INFORMATION

The purpose of this QIP is to continually quality assure and improve your service whereby patients benefit as an outcome of the project.

If you are new to QIPs, we recommend you follow the Plan Do Study Act (PDSA) methodology. The Institute for Healthcare Improvement (IHI) provides a useful worksheet which will help you to think about the changes you want to make and how to implement them.

Further information on ED quality improvement can be found on the RCEM website.

The model for improvement (Institute of Healthcare Improvement)



OBJECTIVES FOR ALL RCEM QIPS

To identify current ED performance against clinical standards and previous performance

How RCEM supports you	Expert teams of clinicians and QIP specialists have reviewed current national standards and evidence to set the top priority standards for this national QIP. RCEM has built a bespoke platform to collect and analyse performance data against the standards for each ED.

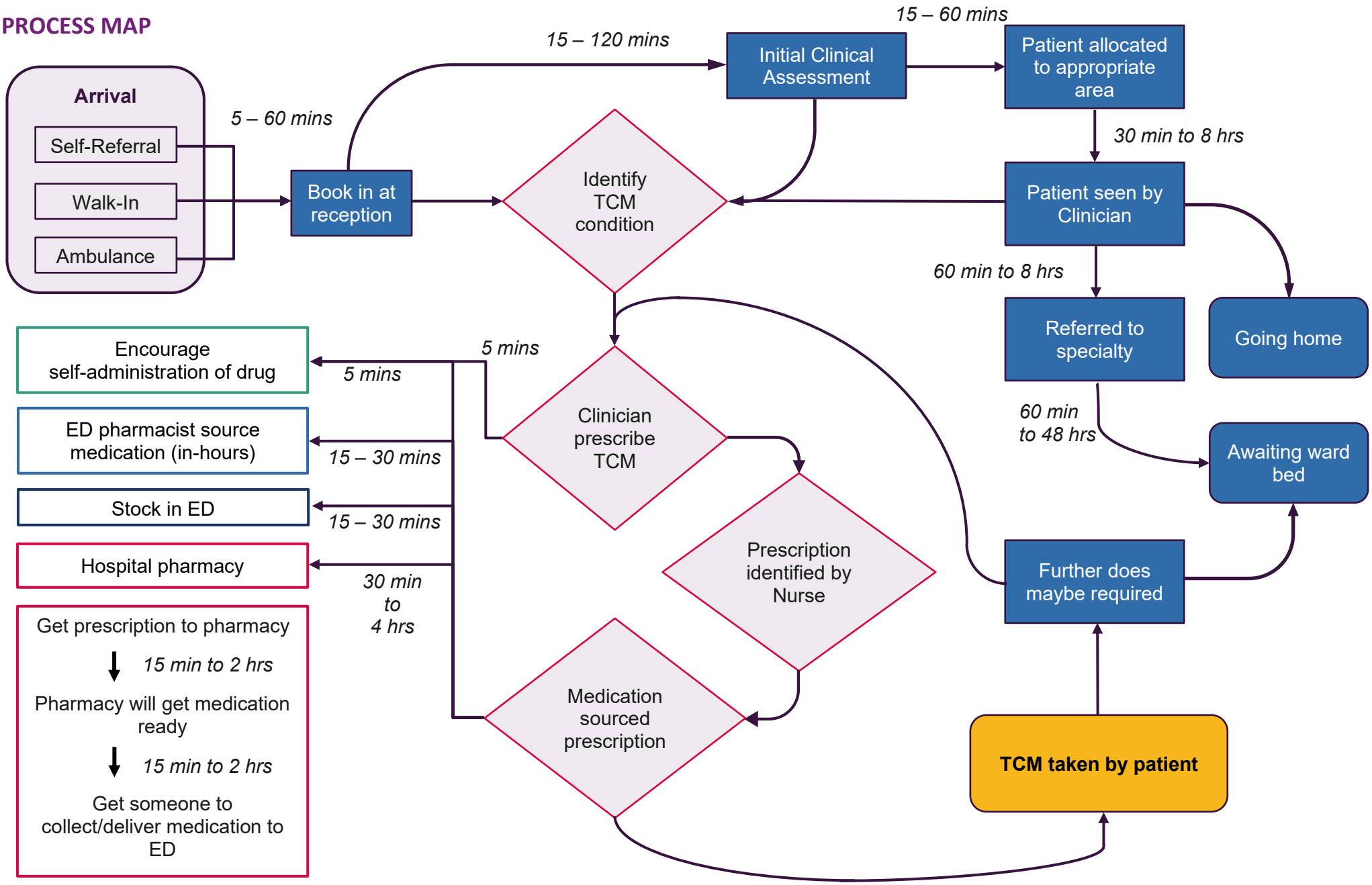
Show EDs their performance in comparison with other participating departments both nationally and in their respective country in order to stimulate quality improvement

How RCEM supports you	The QIP will be run over a 4-year period. The longer duration should allow better planning and effective iteration. This should lead to improved patient care. Participating EDs can see how they perform compared to National mean. This should enable EDs revisit changes implemented and plan further PDSA cycles.

To empower and encourage EDs to run quality improvement (QI) initiatives based on the data collected and track the impact of the QI initiative on their weekly performance data

How RCEM supports you	The RCEM platform includes a dashboard with graphs showing your ED's performance as soon as data are entered to benchmark against yourself. The dashboard graphs are SPC charts (where applicable) with built in automatic trend recognition, so you are able to easily spot statistically significant patterns in your data. RCEM has also published a QI guide to introduce a range of excellent QI methodologies to enhance QI knowledge and skills.

PROCESS MAP


Arrival
Self-Referral
Walk-In
Ambulance
5 – 60 mins
Book in at reception
15 – 120 mins
Initial Clinical Assessment
15 – 60 mins
Patient allocated to appropriate area
30 min to 8 hrs
Patient seen by Clinician
Identify TCM condition
60 min to 8 hrs
Referred to specialty
Going home
60 min to 48 hrs
Awaiting ward bed
Further does maybe required
TCM taken by patient
5 mins
Clinician prescribe TCM
Prescription identified by Nurse
Medication sourced prescription
Encourage self-administration of drug
5 mins
ED pharmacist source medication (in-hours)
15 – 30 mins
Stock in ED
15 – 30 mins
Hospital pharmacy
30 min to 4 hrs
Get prescription to pharmacy
15 min to 2 hrs
Pharmacy will get medication ready
15 min to 2 hrs
Get someone to collect/deliver medication to ED

STANDARDS

Standards	Grade	Reference
STANDARD 1 – Patients on a TCM are identified early within the ED	**F**	Parkinson's UK – *Every minute counts: Time critical Parkinson's medication on time, every time* (P. 23) (September 2023) Available at: CS4006 Get it on time policy report_Web Version.pdf (parkinsons.org.uk)
STANDARD 2 – A patient's TCM should be administered according to their usual regime whilst they are in the ED	**F**	NICE Parkinson's Quality Standard 2018 QS164 https://www.nice.org.uk/guidance/qs164/chapter/quality-statement-4-levodopa-in-hospital-or-a-care-home#:~:text=Adults%20with%20Parkinson's%20disease%20who,their%20individually%20prescribed%20administration%20time.
STANDARD 3 - A patient should receive all expected doses from their usual regime during their ED stay without missing doses.	**F**	NICE (NG 71) Parkinson's Disease in adults https://www.nice.org.uk/guidance/qs164/resources/parkinsons-disease-pdf-75545600441029#:~:text=Practitioners%20should%20support%20adults%20with,for%20adults%20with%20Parkinson's%20disease. and National Institute for Health and Care Excellence. Diabetes in adults. Quality Standard [QS6]. 2011 (updated 2016). https://www.nice.org.uk/guidance/qs6

Grading explained

F - Fundamental This is the top priority for your ED to get right. It needs to be met by all those who work and serve in the healthcare system. Behaviour at all levels of service provision needs to be in accordance with at least these fundamental standards. No provider should offer a service that does not comply with these fundamental standards, in relation to which there should be zero tolerance of breaches.

D - Developmental This is the second priority for your ED. It is a requirement over and above the fundamental standard.

A - Aspirational This is the third priority for your ED and is about setting longer term goals.

EQUALITY STATEMENT

The College is committed to assessing health inequalities relating to patient ethnicity and gender to support departments to provide high quality and equitable care to all.

We will be collecting ethnicity and gender data, monitoring them for systemic inequalities and reporting at the national level.

Our last attempt demonstrated difficulties collecting comprehensive ethnicity data with many reported as 'not specified' – We are exploring the cause of this to improve future data sets to increase the accuracy of ongoing analysis of such data.

MEASURES

Process Measures

STANDARD 1 Patients on TCM are identified within the ED early	**1a.Time taken to identify the patient has a TCM condition** *Time difference between when the patient was booked in to when it was identified that they have a TCM condition*
STANDARD 2 All of patients' TCM should be administered according to their usual regime whilst they are in the ED	**2.Timely administration of TCM** *Time difference of TCM administration from usual schedule* *Time difference between first dose administration from time usually taken;* *Time difference between doses after the first from time prescribed;* *Time difference between self-administered doses from time usually taken.*
STANDARD 3 A patient should receive all expected doses from their usual regime during their ED stay without missing doses.	**3. Timely self-administration of TCM.** *All doses expected to be administered by ED must not have been missed during the patient stay in ED.*

Outcome Measures

1) % of patients on TCM who are identified within the ED by 30mins.

2) % of TCM given within 30 minutes of their usual schedule

3) % of patients without a single missed dose during their ED stay.

METHODOLOGY

Forming your QIP team

RCEM recommends forming a multidisciplinary QI team to include consultants, trainees, advanced care practitioners (ACPs), specialty and associate specialist (SAS) doctors, nursing and patient representatives, and others to suit your local set up.

Data entry portal

You can access the data entry portal here: https://rcemqip.rcem.ac.uk/QIPPortal/

Inclusion criteria

Patients must meet the following criteria for inclusion:

- Patients on scheduled TCM* which needs to be taken during their time in the ED.

  (*) This will be:

  - Parkinson's patients on oral Levodopa

    OR

  - Type 1 and type 2 Diabetes Mellitus on SC insulin.
  - ED Patients who are allowed to self-administer can be included as well

  Issues identifying eligible patients? Please see
  - Appendix 4a, for helpful instructions to help you find eligible cases.
  - Appendix 4b for General advice on Self-administration.

Exclusion criteria

1. Patients with Adverse effects from the TCM
   - Patients who have presented with a complication or adverse event related to the critical medication. Examples are: Presented to ED with Hypoglycemia in a patient on Insulin.
   - Presented to ED with overdose of insulin or Parkinson's medication
   - Presented to ED with Allergic reaction to medications
2. Patients who are on Insulin infusions (sliding/fixed scale). Long acting insulins prescribed as part of DKA and HHS management are not included in the TCM QIP
3. Patients in ED for less than 60 mins
4. Critically unwell patients
   - Patients with persistent EWS >5 (persistent for the purpose of this QIP means patients with EWS of >5 through their entire stay in ED)
   - Patients needing other lifesaving therapy - PCI, chest drain, Intubation or
   - Patients needing Intensive care or urgent operative management.
5. Newly diagnosed: Diabetes Mellitus (Type 1 or 2) or newly diagnosed Parkinson's (less common) in the emergency department.

Sample size

Please collect a minimum of 6 randomised cases per week that meet the eligibility criteria. (3 cases of Parkinson's patients on oral levodopa and 3 cases of Type 1 and type 2 Diabetes Mellitus patients on SC Insulin)

Data entry frequency

Recommended: To maximise the benefit of the run charts and features, RCEM recommends entering a minimum of 6 cases each week (following the sample size stated above). This will allow you to see your ED's performance on key measures changing week by week. PDSA cycles should be regularly conducted to assess the impact of changes on the week-to-week performance.

Alternative: If your ED will find weekly data entry too difficult to manage, you may enter data fortnightly instead. The system will ask you for each patient's arrival date and automatically split your data into weekly arrivals, so you can get the benefit of seeing weekly variation if you spread the cases across the fortnightly. If you decide to enter data fortnightly, we recommend that you enter at least 12 cases fortnightly (6 cases from week 1 and 6 from week 2, following the sample size from the section above). You can then consider fortnightly cycles of PDSA with specific interventions and evaluate their impact by reviewing the trend over that time period.

Data collection period

Data should be collected on patients between **1 Jan 2026 – 31 Dec 2026**

Specific QIP Year reporting period-

Year 1 Interim report period: 03 Oct 2023 – 03 Oct 2024

Report publication: Summer 2025

Year 2 Interim report period: 1 Jan 2025 – 01 Dec 2025

Report publication: Summer 2026

Year 3 Interim report period: 01 Jan 2026 – 31 Dec 2026

Report publication: Summer 2027

Year 4 Final report period: 01 Jan 2027 – 31 Dec 2027

Report publication: Summer 2028

The project length has been increased to allow time to understand your local service offering and establish areas of need. These can then be targeted with PDSA interventions and change monitored over enough time to embed real change. Nationally we are aiming to improve sharing of best practices to facilitate idea development.

Data submission period

Data can be submitted online between **06 Nov 2023 – 31 Jan 2028**.

It is recommended to enter data as close to the date of patient attendance as possible, and to review progress regularly. This will help your QI team spot the impact of intervention more promptly for refinement or disposal, depending on the changes observed.

DATA TO BE COLLECTED

Organisational data

(**please complete this section three times per ED**- at the start of the QIP; middle, and end of Year one)

Q1	Is there a policy for the ambulance service to identify patients on TCM at handover to ED?	• Yes • No
Q2	Do you have a visual aid of TCM at reception/waiting room to empower patients	• Yes • No
Q3	Does your ED have a system in place to identify patients on TCM on your systems	• Yes • No
Q4	Does your ED have a policy for allowing patients to self-administer their own scheduled medication	• Yes • No
Q5	Do you have systems in place to ensure an accurate TCM Drug history/regime is reviewed and is accurate	• Yes • No
Q6	Does your ED use electronic prescribing	• Yes • No
Q7	Do you have a specific TCM stock in the ED? If yes, please select the options available in stock-	• Levodopa • Insulin • No stock
Q8	Do you have specific TCM stock in the ED available 24 hrs	• Levodopa • Insulin • No 24-hr available stock
Q9	Do you have a member of the pharmacist team who is responsible for ordering and stocking the TCM in the ED	• Yes • No
Q10	Do you have a Standard Operating Procedure for TCM that you use in your ED which has been ratified and is in date	• Yes • No
Q11	Do you have TCM education in the ED for all staff	• Yes • No
Q12	Is there TCM Mandatory training in your NHS Trust	• Yes • No

Clinical data

Q1	Reference (do not use patient identifiable data e.g. NHS or hospital number.)	[free text]
Q2	Date and time of arrival	• dd/mm/yyyy • HH:MM
Q3	Date and Time when the patient left the ED	• dd/mm/yyyy • HH:MM • Discharged or Admitted
Q4	Time first seen by named clinician	• dd/mm/yyyy • HH:MM • Not Recorded
Q4 (a)	Time of referral (if made)	• dd/mm/yyyy • HH:MM • No referral made
Q5	Patient Age	[free text]
Q6	Patient ethnicity	See Appendix 1 for ECDS category details
Q6 (a)	Is there documented evidence of a significant language barrier (e.g. needs translator, family member providing history, deaf)	• Yes • No • Not recorded
Q7	How did the patient arrive	• Ambulance • Walk in • Not recorded
Q8	Which TCM is the patient on for which condition? *This may be from the ambulance service, in the form of a TCM digital flag, a TCM visual sticker, TCM written on the front of the notes or TCM written in the notes*	• Levodopa for Parkinson's • Insulin for Type 1 and Type 2 Diabetics
Q8a	What Time was it identified that the patient was on a TCM	• dd/mm/yyyy • HH:MM • Not recorded
Q8b	Which staff group first recorded evidence of identification?	• Reception • Triage Nurse

		• Paramedics • Named Clinician • In-patient team • Pharmacist • Nurse (non-triage) • AHP • Other (Specify) • Not recorded
Q9	Any evidence of issue with capacity?	• Yes • No • Not recorded

Clinical data – TCM Schedule and Administration in ED

Please complete the table below with details of doses that should have been administered in the ED, with the 1st dose being the first scheduled dose required while in the ED. This is the most important step if this QiP is going to be successful and provide quality improvement.
See Appendix 4c for guidance on how to identify what a patient's TCM regime is and when they usually take them.

Patient's regular TCM drug schedule				Medication in ED			
Dose	**Drug**	**Time usually taken**	**Identified by**	**Patient instructed to self-administer their own TCM'?**	**Time Prescribed (to be given)**	**Time Given**	**Alternative given**
1st	Drop down list	• dd/mm/yyyy HH:MM • not identified	-Not identified -ED paper notes -ED electronic notes -Recent outpatient letter -Recent inpatient discharge letter -Patient confirmation (phoned patient) -Unknown -Other	• Yes [Q4b Self-administration date and time] ○ Date ○ Time • No	• dd/mm/yyyy HH:MM • Not prescribed (No reason) • Omitted (Medical Decision) [Q5b – Recorded reason] ○ NBM ○ Patient refused ○ Dose unable to be clarified ○ Other	• dd/mm/yyyy HH:MM • Missed (Not given) • Omitted (Medical Decision) [Q6b – Recorded reason] ○ NBM ○ Patient refused ○ Dose unable to be clarified ○ Other	dd/mm/yyyy HH:MM • Transdermal • SC • IV • Other • N/A • Not recorded
2nd	Drop down list	• dd/mm/yyyy HH:MM • not identified	-Not identified -ED paper notes -ED electronic notes -Recent outpatient letter -Recent inpatient discharge letter -Patient confirmation (phoned patient) -Unknown -Other	• Yes [Q4b Self-administration date and time] ○ Date ○ Time • No	• dd/mm/yyyy HH:MM • Not prescribed (No reason) • Omitted (Medical Decision) [Q5b – Recorded reason] ○ NBM ○ Patient refused ○ Dose unable to be clarified ○ Other	• dd/mm/yyyy HH:MM • Missed (Not given) • Omitted (Medical Decision) [Q6b – Recorded reason] ○ NBM ○ Patient refused ○ Dose unable to be clarified ○ Other	dd/mm/yyyy HH:MM • Transdermal • SC • IV • Other • N/A • Not recorded
				...			
8th	Drop down list	• dd/mm/yyyy HH:MM • not identified	-Not identified -ED paper notes -ED electronic notes -Recent outpatient letter -Recent inpatient discharge letter -Patient confirmation (phoned patient) -Unknown -Other	• Yes [Q4b Self-administration date and time] ○ Date ○ Time No	• dd/mm/yyyy HH:MM • Not prescribed (No reason) • Omitted (Medical Decision) [Q5b – Recorded reason] ○ NBM ○ Patient refused ○ Dose unable to be clarified ○ Other	• dd/mm/yyyy HH:MM • Missed (Not given) • Omitted (Medical Decision) [Q6b – Recorded reason] ○ NBM ○ Patient refused ○ Dose unable to be clarified ○ Other	dd/mm/yyyy HH:MM • Transdermal • SC • IV • Other • N/A Not recorded

DATA SOURCES

ED patient records, including nursing notes (paper, electronic or both).

Flow of data searches to identify QIP cases

For information about using the Emergency Care Data Set (ECDS) or your ED's electronic patient record to identify relevant cases and to extract data from your system, please see **Appendix 1**.

Using the codes list in **Appendix 1**, first identify all patients attending your ED between the relevant dates, then by age at time of attendance, then through the other relevant criteria.

If your ED is reliably using the Emergency Care Data Set (ECDS), then your IT department or information team should be able to a) pull off a list of eligible cases for you, and b) extract some or all of the data you need to enter. Please see **Appendix 1** for the list of codes they will need to identify eligible cases or extract the data.

REFERENCES

[1] Parkinson's Excellence Network. UK Parkinson's Audit 2022 - https://www.parkinsons.org.uk/professionals/uk-parkinsons-audit-transforming-care

[2] NICE. Quality standard: Parkinson's disease [Internet]. 2018 [cited 16 July 2019]. Available from: https://www.nice. org.uk/guidance/qs164/resources/parkinsons-disease-pdf-75545600441029

[3] NHS England and NHS Improvement (2019) 'The NHS Patient Safety Strategy - Safer culture, safer systems, safer patients' https://www.england.nhs.uk/wp-content/uploads/2020/08/190708_Patient_Safety_Strategy_for_website_v4.pdf

[4] Kulkarni AS, Balkrishnan R, Anderson RT, Edin HM, Kirsch J, Stacy MA. Medication adherence and associated outcomes in medicare health maintenance organization-enrolled older adults with Parkinson's disease. Mov Disord 2008;23(3):359–365.

[5] Grissinger M. Delayed administration and contraindicated drugs place hospitalized Parkinson's disease patients at risk. P T 2018;43(1):10–39.

[6] Richard, G., Redmond, A., Penugonda, M., & Bradley, D. (2022). Parkinson's Disease Medication Prescribing and Administration During Unplanned Hospital Admissions. Movement disorders clinical practice, 9(3), 334–339. https://doi.org/10.1002/mdc3.13408

[7] Martinez-Ramirez, D., Giugni, J. C., Little, C. S., Chapman, J. P., Ahmed, B., Monari, E., Shukla, A. W., Hess, C. W., & Okun, M. S. (2015). Missing Dosages and Neuroleptic Usage May Prolong Length of Stay in Hospitalized Parkinson's Disease Patients. PLoS ONE, 10(4). https://doi.org/10.1371/journal.pone.0124356

[8] Hou, J. G., Wu, L. J., Moore, S., Ward, C., York, M., Atassi, F., Fincher, L., Nelson, N., Sarwar, A., & Lai, E. C. (2012). Assessment of appropriate medication administration for hospitalized patients with Parkinson's disease. Parkinsonism & related disorders, 18(4), 377–381. https://doi.org/10.1016/j.parkreldis.2011.12.007

[9] https://academic.oup.com/ageing/article/49/5/865/5869603

[10] Health and Social Care Information Centre. National Diabetes Inpatient Audit 2017 – National Report

Appendix 1: ECDS Codes to support case identification.

The codes below can be used to help initially identify potential cases. This is not an exhaustive list; other search terms can be used, but all potential patients should then be reviewed to check they meet the definitions & selection criteria before inclusion in the QIP.

The ECDS codes below relate to CDS V6-2-2 Type 011 - Emergency Care Data Set (ECDS) Enhanced Technical Output Specification v3.0.

QIP question	ECDS data item name	ECDS national code	National code definition
Date and time of arrival or triage – whichever is earlier	EMERGENCY CARE ARRIVAL DATE EMERGENCY CARE ARRIVAL TIME	an10 CCYY-MM-DD an8 HH:MM:SS	Date Time
Ethnic group	ETHNIC CATEGORY	A	White British
		B	White Irish
		C	Any other White background
		D	White and Black Caribbean
		E	White and Black African
		F	White and Asian
		G	Any other mixed background
		H	Indian
		J	Pakistani
		K	Bangladeshi
		L	Any other Asian background
		M	Caribbean
		N	African
		P	Any other Black background
		R	Chinese
		S	Any other ethnic group
		Z	Not stated e.g. unwilling to state
		99	Not known e.g. unconscious
Gender	PERSON STATED GENDER CODE	1	Male
		2	Female
		9	Indeterminate (unable to be classified as either male or female)
		X	Not Known (PERSON STATED GENDER CODE not recorded)

Appendix 2: Definitions

Section	Standard	Term	Definition
Clinical Standards	1	Patients on a TCM are identified early within the ED	Identification of a patient with a TCM can include • An electronic alert put on the ED IT system • A TCM sticker put on the ED notes e.g (a yellow Get it on Time sticker for Parkinson's) • Documentation in the ED assessment/triage that the patient has a TCM condition
Clinical Standards	2	A patient's TCM should be administered according to their usual regime whilst they are in the ED	Identification of a patient's usual TCM regime can include • Documentation in the ED assessment or triage form • Documentation in the ED paper or electronic notes This should include the name, dose, route and frequency See Appendix 4a for guidance on how to identify what a patient's TCM regime is All of the patients' daily TCM regime should be prescribed in the ED (so the risk of them not being given is reduced) All TCM should be given within 30 minutes of when a patient usually takes them

Appendix 3: Analysis plan (Organisational data)

This section explains how the RCEM team will analyse your organisational data. You may wish to conduct analysis locally. 'Analysis plan' defines how the RCEM team will analyse your data in relation to the organisational standards.

Standard	Relevant questions
1	Q1 and Q3
2	Q5, Q6, Q7, Q8, Q9, Q10, Q11 and Q12
3	Q2 and Q4

Appendix 4a: Finding eligible cases

Guidance around how to identify patients

1. Collate a list of search terms that will identify the patients on your local IT system - both in the ED and inpatient data.

2. As Parkinson's and Diabetes may not be coded in the ED data set, they will be listed as co-morbidities in the Trust speciality discharge letter, which is another way to identify cases if you are finding it difficult to input 6 a week.

3. On an electronic system add an alert.

4. On an electronic system add TCM as a task to be completed, turns from red to green when all the TCM has been prescribed. Search TCM under the task every week or fortnight to identify all the patients who are on TCM.

5. Send out an internal communication to all ED receptionists asking them to keep a record of all patients with Parkinson's and Diabetic on insulin who book in.

6. Add a Time Critical Medication sticker to the front of the notes and collate them when the patient leaves the ED so they do not get filed in the normal way.

Appendix 4b: Self-administration of TCM, general advice for ED's

It will be up to individual EDs to decide on self-administration of TCMs.

Some general guidance is that to be allowed to self-medicate, the patient (or where appropriate their carer/family member) must:

- be able to describe their current medication regime accurately (including how and when they normally take their medications)

- have access to any supports or prompts required as part of their normal medication routine (for example medication reminder charts, dosette box, alarm system, etc)

- be assessed as having capacity to self-medicate

- be assessed as being able to self-medicate

- have access to their prescribed medications (either patient own drugs, or supplied by ED)

If a carer/family member is supporting self-medication, then an agreement must be in place to ensure they are available to undertake this for all medication doses/times, or an agreement is in place for ED staff to undertake this in their absence.

Within the dose information section of the data collection form, there is a question to complete to indicate the patient was self-administrating, please ensure this is completed.

Appendix 4c: Guidance on how to identify what a patient's TCM regime is and when they usually take them

Taking steps to identify this is key to the success of this QIP, we would encourage you to think about how you will take steps to achieve this in your ED.

The quickest change would be to ensure the recording of an accurate drug history of the patient's TCM regime is obtained from the patient, relative, and carer and the time and date are documented in the electronic ED record or ED notes including name, dose, route and frequency.

If this information is not referenced during the patient's attendance it is paramount that the person filling in the data attempts to identify this. The question of when the patient normally takes their next dose after they have arrived in the ED can be sought retrospectively by the person filling in the RCEM case capture entry. This can be achieved by either

- Documentation in the ED notes or electronic record (this is to be encouraged for all EDs)
- Phone the patient or carer
- ED discharge letter to Primary Care
- Care home documentation
- MAR sheets (Medication Administration Records)
- Community health services e.g., if District Nurses administer a TCM **(**e.g. insulin), ring the nursing team (usually a 24-hour access line)
- In-patient prescription charts or electronic prescribing
- A recent admission record (generally within 6 months)
- A recent inpatient discharge record (generally within 6 months)
- Clinic letters from secondary and tertiary care centres

The Topic Team found that phoning the patient or carer was the most efficient way of finding this out during the pilot if it was not identified or documented in the ED.

On occasions, Parkinson's patients will have doses omitted as a result of a medical decision, i.e. NBM, patient refused, dose unknown, other. These patients should not be excluded, and if an alternative is given, i.e. a transdermal patch, this should be recorded as well.

On occasions, a diabetic patient who is hyperglycaemic (but not requiring IV insulin) will be prescribed a short acting insulin if their normal insulin dose is not known. These patients should not be excluded, and if an alternative is given, such as a SC dose of Actrapid, this should be recorded as well.

Appendix 4e: An example case 1

FR is an 83 year old male who arrives at the Emergency Department at 22.50 on 8th Nov 2023 by ambulance.

He is admitted to the ward at 14.15 on 9th Nov 2023 having been seen by the ED clinician at 03.35 and being put on the bed list at 05.30

He was first identified as having Parkinson's by the ED reception team, who put an electronic alert on the ED IT system at 23.22 on 8th Nov 2023

He was then assessed by the ED Nurse, who noted the Parkinson's alert. She asked about the name, dose and timing of his normal TCM regime and documented these in the notes in order that they would need to be given in the ED.

He takes

Madopar 62.5mg O QDS at 07.00, 11.00 and 15.00 and 19.00

He then went and asked an ED clinician to prescribe all of his Parkinson's TCM for 24 hrs

The ED clinician prescribed all 4 doses noting that the next one was at 07.00.

The day ED Nurse was handed over that the patient was prescribed Madopar 62.5mg O QDS and she was able to administer the 07.00 dose at 07.24 and the 11.00 dose at 11.35. She was able to handover to the medical team that his next dose was at 15.00

There was no discussion about self-administration in this case, but in hindsight, the ED team reflected that he would have been a good candidate

Appendix 4e: An example case 2

GL is a 58 year old female, who arrives at the Emergency Department at 14.12 on 10th Nov 2023 by ambulance at 16.00

She is admitted to the ward at 03.00 on 10th Nov 2023 having been seen by the ED clinician at 19.12 and being put on the bed list at 21.25

She was first identified as having Parkinson's by the ED clinician who saw her at 19.12.

There is no documentation in the ED notes about Parkinson's medication.

On review you cannot find any documentation of a recent outpatient letter or recent discharge summary, but you can see on the e-Meds system that the medical team has prescribed Sinemet 125mg 0 TDS at 08.00, 14.00 and 20.00 when she was an inpatient.

While she was in the ED, she should have had Sinemet 125mg O prescribed to be given at 20.00.

You fill in that the first dose was due at 20.00 and this was identified by e-Meds, it was Not Prescribed and that it is a Missed Dose.

There was no discussion about self-administration in this case, but in hindsight, the ED team reflected again that she would have been a good candidate.

Appendix 5: Time Critical Medications List

List of Oral Parkinson's medications containing Levodopa

- Co-Beneldopa (Madopar)
- Co-Careldopa (Sinemet)
- Stavelo (Stanek)

List of Subcutaneous (SC) Insulins

Rapid Acting Insulin / Short Acting Insulins

- Novorapid (Insulin Aspart)
- Humalog (Insulin Lispro)
- Apidra (Insulin Glulisine)
- Fiasp (Insulin Aspart)
- Actrapid
- Humulin S (Human soluble insulin)
- Insuman Rapid (Human soluble insulin)

Long Acting Insulin / Intermediate acting Insulins

- Levemir (Insulin Detemir)
- Abasaglar (Insulin Glargine)
- Lantus (Insulin Glargine)
- Toujeo (Insulin Glargine)
- Tresiba (Insulin Degludec)
- Insuman Basal
- Insulatard (Isophane insulin)
- Humulin I (Isophane insulin)

Pre-mixed Bisphasic Insulin

- Novomix 30 (Biphasic insulin Aspart)
- Humalog Mix 25 (Biphasic insulin Lispro)
- Humalog Mix 50 (Biphasic insulin Lispro)
- Humulin M3 (Soluble and Isophane insulin)
- Insuman Comb 15 (Soluble and Isophane insulin)
- Insuman Comb 25 (Soluble and Isophane insulin)
- Insuman Comb 50 (Soluble and Isophane insulin)

Oral Anti-Coagulants to prevent Thrombosis

- Warfarin
- Rivaroxaban (brand names include Xarelto)
- Dabigatran (brand names include Pradaxa)
- Apixaban (brand names include Eliquis)
- Edoxaban (brand names include Lixiana)

Oral Steroids to prevent an Addisonian Crisis

- Hydrocortisone
- Prednisolone
- Dexamethasone
- Fludrocortisone

Oral Immunosuppressants to prevent transplant rejection

- Azathioprine
- Mycophenolate Mofetil
- Calcineurin inhibitors (Ciclosporin or Tacrolimus)
- Corticosteroids
- Sirolimus

Medication to prevent Diabetes Insipidus

- Desmopressin Oral or Intramuscular (IM) or Intranasal (IN) or Sublingual (SL)

Oral medication to prevent epileptic seizures

Category 1

- Carbamazepine
- Phenobarbital
- Phenytoin
- Primidone

Category 2

- Clobazam
- Clonazepam
- Eslicarbazepine acetate
- Lamotrigine
- Oxycarbazepine
- Perampanel
- Rufinamide
- Topiramate
- Zonisamide

Category 3

- Brivaracetam
- Ethosuxinide
- Gabapentin
- Lacosamide
- Levetiracetam
- Pregabalin
- Tiagabine
- Vigabatrin

Appendix 6: Clinical standards – Analysis plan

This section explains how the RCEM team will analyse your data. You may wish to conduct analysis locally. 'Analysis sample' shows which records will be included or excluded. 'Analysis plan' defines how the RCEM team will present the data graphically, and which records will meet or fail the standards.

Standard	Relevant questions	Analysis sample
1	Patient Record: Q2 Q8 Q8a	**Include:** Only patients where: Q8 = Insulin AND/OR Levodopa **Exclude:** - All patients where the record information is incomplete - All patients where Q8a = 'Not recorded' - All patients where Q8 IS NOT Insulin AND/OR Levodopa

Analysis plan	
Chart Type: SPC Chart (weekly performance). **Title:** % of patients TCM identified within 30 minutes from arrival **Calculation:** **Q8a (Time) – Q2 (Time)**	**Standard Met:** Q8a (Time) – Q2 (Time) <= 30 minutes **Standard not met if:** Q8a (Time) – Q2 (Time) > 30 minutes

Standard	Relevant questions	Analysis sample	Analysis plan – Conditions for the standard to be met where applicable
2	Time usually taken [TCM Dose table] Time Given [TCM Dose table]	**Include:** Only doses where: TCM = Insulin OR Levodopa **Exclude:** - All doses non self-administered 1st doses where "Time usually taken" = 'Not identified' - Doses where "Time Prescribed (to be given)" = 'Omitted (Medical Decision)' - Doses where "Time Given" = 'Omitted (Medical Decision)' - Incomplete doses - Doses from incomplete records - Doses beyond the 8th dose - Self-administered doses with no recorded self-administration time AND/OR time usually taken recorded	**Chart Type:** SPC Chart (weekly performance). **Title:** % of TCM given within 30 minutes of usual schedule **Calculation:** **Time 1st Dose Given – Time usually taken** **Time 2nd, 3rd, … Dose given – Time prescribed** **Time dose self-administered – Time usually taken** **Standard Met:** Time difference of the individual recorded dose is ± 30 minutes. **Standard not met if:** Time difference of the individual recorded dose is > 30 minutes. Dose prescription is recorded as missed Dose administration is recorded as missed

Standard	Relevant questions	Analysis sample	Analysis plan – Conditions for the standard to be met where applicable
2	Time usually taken [TCM Dose table] Time Given [TCM Dose table] Alternative Given [TCM Dose table]	**Include:** Only doses where: TCM = Insulin **Exclude:** - All doses non self-administered 1st doses where "Time usually taken" = 'Not identified' - Doses where "Time Prescribed (to be given)" = 'Omitted (Medical Decision)' - Doses where "Time Given" = 'Omitted (Medical Decision)' - Incomplete doses - Doses from incomplete records - Doses beyond the 8th dose - Self-administered doses with no recorded self-administration time AND/OR time usually taken recorded	**Chart Type:** SPC Chart (weekly performance). **Title:** % of TCM given within 30 minutes of usual schedule (Insulin) **Calculation:** **Time 1st Dose Given – Time usually taken** **Time 2nd, 3rd, … Dose given – Time prescribed** **Time dose self-administered – Time usually taken** **Standard Met:** Time difference of the individual recorded dose is ± 30 minutes. **Standard not met if:** Time difference of the individual recorded dose is > 30 minutes. Dose prescription is recorded as missed Dose administration is recorded as missed

Standard	Relevant questions	Analysis sample	Analysis plan – Conditions for the standard to be met where applicable
2	Time usually taken [TCM Dose table] Time Given [TCM Dose table] Alternative Given [TCM Dose table]	**Include:** Only doses where: TCM = Levodopa **Exclude:** - All doses non self-administered 1st doses where "Time usually taken" = 'Not identified' - Doses where "Time Prescribed (to be given)" = 'Omitted (Medical Decision)' - Doses where "Time Given" = 'Omitted (Medical Decision)' - Incomplete doses - Doses from incomplete records - Doses beyond the 8th dose - Self-administered doses with no recorded self-administration time AND/OR time usually taken recorded	**Chart Type:** SPC Chart (weekly performance). **Title:** % of TCM given within 30 minutes of usual schedule (Levodopa) **Calculation:** Time 1st Dose Given – Time usually taken Time 2nd, 3rd, … Dose given – Time prescribed Time dose self-administered – Time usually taken **Standard Met:** Time difference of the individual recorded dose is ± 30 minutes. **Standard not met if:** Time difference of the individual recorded dose is > 30 minutes. Dose prescription is recorded as missed Dose administration is recorded as missed

Standard	Relevant questions	Analysis sample	Analysis plan – Conditions for the standard to be met where applicable
3	Q8 Time usually taken (TCM Dose table) Time Given (TCM Dose table)	**Include:** All records where Q8 = Insulin for Type 1 and Type 2 Diabetics AND the dose Time usually taken and Time Given data was provided at least once. **Exclude:** Incomplete records Records where the patient identified TCM was not Insulin and/or Levodopa Records not containing any Standard 3 eligible doses* (*) Eligible doses are all doses where ED staff was expected to administer. The exclusion criteria for Standard 3 doses are as follows: - All 1st doses where "Time usually taken" = 'Not identified' - Doses where "Time Prescribed (to be given)" = 'Omitted (Medical Decision)' - Doses where "Time Given" = 'Omitted (Medical Decision)' - Incomplete doses - Doses from incomplete records - Doses beyond the 8th dose - All self-administered doses - Doses where the TCM IS NOT Insulin or Levodopa	**Chart Type:** SPC Chart **Title:** % of patients without a single standard 3 eligible dose missed during the ED stay **Missed dose:** Doses where the prescription and/or administration are recorded as missing OR Doses where the time difference between: Time 1st Dose Given – Time usually taken > 6 Hours Time 2nd, 3rd, … Dose given – Time prescribed > 6 Hours **Standard Met** Records contains no missed standard 3 eligible doses. **Standard not met if:** Record contains missed standard 3 eligible doses.

Additional Charts:

Standard	Relevant questions	Analysis sample	Analysis plan – Conditions for the standard to be met where applicable
1	Patient Record: Q2 Q8 Q8a Q8b	**Include:** Only patients where: Q8 = Insulin AND/OR Levodopa **Exclude:** - All patients where the record information is incomplete - All patients where Q8a = 'Not recorded' - All patients where Q8 IS NOT Insulin AND/OR Levodopa	**Chart:** Pie Chart **Chart title:** TCM Identification per staff member **Calculation:** Breakdown of Q8b answers

Standard	Relevant questions	Analysis sample	Analysis plan – Conditions for the standard to be met where applicable
2	Time usually taken [TCM Dose table] Time Given [TCM Dose table]	**Include:** Only doses where: TCM = Insulin OR Levodopa **Exclude:** - All doses non self-administered 1st doses where "Time usually taken" = 'Not identified' - Doses where "Time Prescribed (to be given)" = 'Omitted (Medical Decision)' - Doses where "Time Given" = 'Omitted (Medical Decision)' - Incomplete doses - Doses from incomplete records - Doses beyond the 8th dose - Self-administered doses with no recorded self-administration time AND/OR time usually taken recorded - Doses where the prescription and/or administration have been recoded as missed.	**Chart:** Run Chart **Chart title:** Average time to administer TCM **Calculation:** Time 1st Dose Given – Time usually taken Time 2nd, 3rd, … Dose given – Time prescribed Time dose self-administered – Time usually taken

Standard	Relevant questions	Analysis sample	Analysis plan – Conditions for the standard to be met where applicable
3	Time usually taken [TCM Dose table] Time Given [TCM Dose table]	**Include:** Only doses where: TCM = Insulin OR Levodopa **Exclude:** - All 1st doses where "Time usually taken" = 'Not identified' - Doses where "Time Prescribed (to be given)" = 'Omitted (Medical Decision)' - Doses where "Time Given" = 'Omitted (Medical Decision)' - Incomplete doses - Doses from incomplete records - Doses beyond the 8th dose - All self-administered doses - Doses where the TCM IS NOT Insulin or Levodopa	**Chart:** Pie Chart **Chart title:** Breakdown of standard 3 eligible doses **Calculation:** Time 1st Dose Given – Time usually taken Time 2nd, 3rd, … Dose given – Time prescribed **Missed dose:** Doses where the prescription and/or administration are recorded as missing OR Doses where the time difference between: Time 1st Dose Given – Time usually taken > 6 Hours Time 2nd, 3rd, … Dose given – Time prescribed > 6 Hours **Not missed dose:** Doses where the time difference between: Time 1st Dose Given – Time usually taken < 6 Hours Time 2nd, 3rd, … Dose given – Time prescribed < 6 Hours