

An overview of System C's G-Cloud service for CareFlow Emergency Care

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1 An overview of System C's Emergency Care solution

1.1 Product description

System C is the UK's only dedicated provider of software solutions for Healthcare, Social Care, and Education. With unrivalled expertise, a commitment to transformation, and future focussed, Artificial Intelligence (AI)-powered innovation, we partner with organisations to improve outcomes and enhance community wellbeing.

CareFlow Emergency Care streamlines both clinical and administrative processes in the Emergency Department (ED). It ensures efficient patient flow, captures clinical data at every stage, and tracks patients throughout their journey. The system automatically generates discharge summaries, which can be sent directly to General Practitioners (GPs), supporting seamless continuity of care.

Function	Description
CareFlow Emergency Care: minimum deployment	
Emergency Care	CareFlow Emergency Care is a comprehensive, paperless solution designed to manage every clinical and administrative aspect of emergency care. It supports both adult and paediatric patients as they move through all stages of the Emergency Department, helping to reduce admission bottlenecks and improve patient flow. Key features include: • Real-time visibility: Interactive whiteboards display the status of individual patients and the entire department. • Complete patient tracking: From arrival to discharge, including transfers to theatres or investigations elsewhere in the hospital. • Automated discharge summaries: Sent directly to GPs for seamless continuity of care. • Compliance and performance: Fully aligned with the Emergency Care Data Set (ECDS) standard and supports Trusts in meeting national and locally defined waiting time targets. • Intuitive data capture: Enables real-time recording of interventions by date, time, location, and clinician for full auditability. CareFlow Emergency Care delivers a robust, efficient, and user-friendly platform that enhances operational performance and improves patient outcomes.
Data repository and warehouse (our business intelligence capability)	CareFlow's data repository and warehouse is a core component of CareFlow Emergency Care, providing a powerful healthcare reporting and data management solution. It enables the creation, maintenance, and delivery of reports and dashboards with near real-time data (high frequency reports typically within 5 minutes of live). Key benefits: • Complete visibility: Gives Trusts the digital capability to monitor activity across all urgent care locations and progress

	towards digital sophistication in line with the Frontline Digitisation Programme. • User-friendly design: Presents data in a logical, intuitive format for easy access and analysis. Capabilities include: • Pre-configured reports for contracting, commissioning, and NHS Commissioning Data Sets (CDS). • A suite of operational reports and templates to accelerate custom report creation. • Comprehensive reporting across statistical, operational, administrative, and clinical domains. • Full support for statutory reporting and CDS returns. Delivered via familiar Microsoft tools – Report Builder, Structured Query Language (SQL) Server Management Studio (SSMS), Excel, and Power BI – enabling rapid self-sufficiency for advanced reporting needs. CareFlow's data repository meets all modern hospital reporting and data warehousing requirements, helping Trusts unlock actionable insights and drive digital transformation.
Interfacing	CareFlow Emergency Care includes: • An integrated integration engine: Enables seamless data exchange with departmental systems such as Laboratory Information Systems (LIMS), Picture Archiving and Communication Systems (PACS), and shared care records. • Standard Health Level Seven (HL7) messaging: Provides near real-time data synchronisation, ensuring accurate and up-to-date information across all connected systems.
Hosting	CareFlow Emergency Care is hosted on the Microsoft Azure UK cloud platform, delivering exceptional resilience and service continuity. Deployed across multiple Azure UK South data centre zones, the solution is designed for high availability – able to withstand component or server failures without impacting end-user access.
CareFlow Emergency Care: optional clinical functions	
Electronic observations	CareFlow Electronic Observations is System C's market leading solution for electronic observations and clinical decision support. It provides clinicians with accurate, real-time information to identify deteriorating conditions early and trigger escalation pathways – ensuring the safest possible care for adults and children. Key capabilities include: • Mobile-enabled monitoring: Records and analyses patient vital signs at the bedside via an intuitive app. • Early Warning Scores (EWS): Automatically calculates scores based on national standards, including the National Early Warning Score (NEWS2), with support for Paediatric and ED observation models.

	- Local protocol validation: Includes configurable warnings and workflows tailored to local requirements. - Sepsis management: Comprehensive functionality to identify, risk-stratify, and audit care for patients at risk of sepsis. Benefits for clinicians and organisations: - Bedside data recording and observation scheduling based on clinical need. - Real-time access to detailed patient information on the move. - Overview dashboards for care delivery and performance monitoring. - Eliminates paper charts, improving accuracy and compliance. - Provides actionable insights to support transformation and improvement initiatives. Highly intuitive and easy to use, CareFlow Electronic Observations empowers front-line clinicians to respond faster, take extra observations when needed, and make the right decisions at the point of care.
CareFlow Emergency Care: optional integrated functions	
Document Exchange	CareFlow Emergency Care supports secure electronic communication of information to the right recipients, ensuring fast and reliable data exchange across health and care settings. Our Document Exchange function is compliant with NHS England's Message Exchange for Social Care and Health (MESH) service, enabling organisations to share files and documents internally and externally with confidence. Document Exchange handles both structured and unstructured documents, with structured formats based on NHS England's HL7 Fast Healthcare Interoperability Resources (FHIR) standards for interoperability. This means data can flow seamlessly between systems, reducing manual processes and improving accuracy. Documents generated by CareFlow Emergency Care can be shared internally between systems or externally to other organisations, such as General Practitioners (GPs), supporting continuity of care. Letters are transmitted as Portable Document Formats (PDFs) embedded within Extensible Markup Language (XML) documents, and the service applies intelligent routing rules to ensure documents reach the correct recipients. Once delivered, a business acknowledgement is sent back to CareFlow, confirming the status of each transmission for complete traceability.
Personal Demographics Service (PDS) and Child Protection - Information Sharing (CP-IS) integration	The Personal Demographics Service (PDS) is used by healthcare professionals as the national master database of all NHS patients in England, Wales, and the Isle of Man - holding basic patient demographic details. Our PDS integration ensures CareFlow Emergency Care works seamlessly with the national PDS, creating a single, accurate patient record by linking local Master Patient Index (MPI) data with the PDS. This eliminates duplication, reduces errors, and speeds up patient registration – saving time for staff and improving the

	patient experience. With PDS functionality, demographic details can be quickly retrieved from the PDS and displayed within CareFlow Emergency Care, ensuring healthcare professionals always have the most up-to-date information. CareFlow can also send demographic updates back to the PDS, helping maintain data consistency across systems and supporting safer, more efficient care delivery. CareFlow Emergency Care integrates with the Child Protection – Information Sharing (CP-IS) service, giving healthcare professionals reliable, consistent access to vital safeguarding information. This supports informed risk assessments and better child protection decisions, helping clinicians act quickly and confidently when a child's safety may be at risk. Patients are automatically traced using the PDS to verify demographics and NHS Numbers, ensuring accuracy and reducing manual effort. The verified NHS Number is then used to query CP-IS for any active plans relating to the child or expectant mother. Available plans include: • Child protection plan – for children at risk of harm. • Looked after child plan – for children in Local Authority care. • Unborn child plan – attached to the mother until birth. CareFlow Emergency Care also provides clear prompts when plans are available, ensuring safeguarding information is never missed.
CareFlow Emergency Care: optional integrations	
Application Programming Interface (API) bundles	System C's Interoperability Framework enables seamless integration with third-party systems by configuring our solutions to consume external vendors' web services. This allows data from other systems to be displayed within the patient record without the need to persist it – ensuring accuracy and reducing duplication. Key capabilities: • Open Application Programming Interfaces (APIs): A wide range of APIs based on Fast Healthcare Interoperability Resources (FHIR) standards. • Cloud-based delivery: APIs are provided via a secure, scalable cloud platform. • Use-case driven packages: Bundled API sets designed around common interoperability scenarios for faster implementation.
Third-Party Integrations (TPIs)	CareFlow Emergency Care integrates seamlessly with third-party applications, launching them in patient context via single-sign-on for a smooth, unified user experience. Key capabilities: • Extensive integration library: Click-through Third-Party Integration (TPI) plug-ins provide single-sign-on and context maintenance for systems such as PACS archives, Electronic

	Document Management Systems (EDMS) solutions, Summary Care Records, and regional Shared Care Records.
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1.2 Our other solutions

Please see our separate submissions for standalone CareFlow products on the Digital Marketplace, these include:

- CareFlow Patient Administration System (PAS).
- CareFlow Electronic Patient Record (EPR).
- CareFlow Clinicals.
- CareFlow Electronic Prescribing and Medicines Administration (EPMA).
- CareFlow Pharmacy.
- CareFlow AI.
- ChemoCare.
- BadgerNet Maternity, Neonatal, and Paediatrics.
- CarePlus (Child Health).

1.3 Standards

System C solutions are purpose-built for the UK Health and Social Care sectors and fully comply with NHS standards and best practice guidelines, including NHS Information Security Standards and Information Governance standards (e.g., NHS IM&T Security Manual, the NHS Confidentiality Code of Practice, and Caldicott Principles).

Our credentials include:

- **ISO certifications:** ISO 9001 for Quality Management and ISO/IEC 27001 for Information Security across all business functions.
- **NHS compliance:** Data Security and Protection Toolkit (DSPT) compliance, plus Cyber Essentials and Cyber Essentials Plus accreditation.
- **Digital health standards:** CareFlow Emergency Care meets the Digital Technology Assessment Criteria (DTAC), the national baseline for NHS and Social Care digital solutions.
- **Sustainability commitment:** Carbon Reduction Plan published annually since 2022 and participation in NHS England's Evergreen Sustainable Supplier Assessment since 2023.

In summary, System C combines rigorous compliance with a strong commitment to sustainability, ensuring secure, high-quality solutions for the NHS and Social Care.

2 Implementation

2.1 Interoperability

During the initial phase of the project, System C works collaboratively with the Trust to define the current integration architecture, based on documentation supplied by the Trust. To achieve this, we:

- Provide detailed message specifications, including examples of the messages that will be exchanged.
- Conduct a mapping and gap analysis to identify any missing content or potential issues.

- Agree responsibilities. The Trust will supply a detailed plan for any Trust Integration Engine (TIE) development work, including agreed milestones, to support effective project management within this workstream.

2.2 Configuration

System C has developed a standardised, collaborative, and iterative approach to configuration, designed to ensure the solution meets customer needs and maximises benefits. This approach includes:

- **Business process alignment:** Supporting customers to align or realign workflows to optimise outcomes.
- **Compliance:** Ensuring all configurations meet NHS data standards and data dictionaries.
- **Localisation:** Providing customer-definable reference tables, which can be mapped internally to national codes (e.g., CDS returns).
- **Access control:** Setting up Role-Based Access Control (RBAC) rights for individuals or groups to ensure permissions match roles and sensitive data remains secure.

2.3 Data migration

Most implementations require migration of patient and activity data from legacy systems. System C's Data Migration Team works closely with the Trust to:

- Define individual and joint responsibilities within the workstream.
- Agree the scope of data migration.
- Plan activities and determine the optimal phasing of migration tasks.

Our team has successfully migrated over one billion records for numerous NHS organisations, ensuring accuracy and continuity of care.

2.4 Deployment

System C's deployment methodology – refined through successful implementations in 30 Acute NHS Trusts – is designed for a safe, controlled, and predictable go-live with minimal disruption to patients and staff. Key principles of our approach include:

- **Joint planning:** System C and Trust teams work together on an integrated plan, fostering transparency and early risk management.
- **Clinical engagement:** Essential for success; we collaborate closely with clinicians throughout.
- **Flexibility:** Our methodology is pragmatic and adaptable to Trust-specific needs.
- **Remote capability:** We pioneered remote deployments during COVID-19, completing three fully remote EPR go-lives.

The benefits of our deployment methodology are:

- Reduced risk through structured stage-gate readiness criteria.
- Contingency planning for critical supplier exit dates.
- Smooth transition from go-live to Business as Usual (BAU).
- Fully trained staff and a solution that meets clinical and organisational requirements.

2.5 Training

System C partners with the Trust's Training Team to provide guidance, training, and support. Our standard approach includes:

- **Train-the-Trainer model:** Working closely with the Trust's Training Team to plan and deliver training.
- **Comprehensive training materials:** Covering all aspects of the deployed solution.

2.6 Testing and acceptance

Testing is critical to success, and System C adopts a structured, collaborative approach tailored to the solution being implemented. We assist the Trust by providing:

- **Testing collateral:** Including a Test Strategy, Test Plans, and Test Reports.
- **Guidance and support:** Ensuring effective testing is undertaken to maximise solution benefits.