

Coordinated Care & Cure Delivery Platform (C3DP) is a Web application for collaborative creation and execution of personalised integrated care plans for multi-morbid patients by a multidisciplinary care team. The key features of C3DP are:

Personalised goal and activity suggestions via CDS services implementing clinical guidelines: The system is integrated with tens of Clinical Decision Support (CDS) services for risk prediction and stratification, recommendation reconciliation, poly-pharmacy management and personalised goal and activity suggestions. These CDS services are implemented based on evidence-based clinical guidelines for four major chronic diseases: diabetes, chronic kidney disease, heart failure and depression. Integration via the CDS services is enabled via the CDS Hooks API.

Seamless integration with local care sites: C3DP supports HL7 FHIR® RESTful API to synchronize clinical data of the patient with local EHR systems. These data are shown in the medical summary and automatically mapped to relevant CDS services without the need for manual data entry. Integration with local health care systems that do not inherently support HL7 FHIR® is achieved via C3-Cloud Interoperability Middleware.

Active patient involvement in care planning: C3DP is integrated with a Patient Empowerment Platform ensuring patient needs are respected in decision making and reinforce treatment adherence. It is possible to exchange information among patients and their care team via vital sign measurements, questionnaires, structured feedback, safe messages, and real-time notifications.

Care plan and patient data models based on global knowledge: C3DP is fully compliant with tens of HL7 FHIR® clinical resources for both care plan and patient record data models. It benefits from the high-performing, scalable, and open-source HL7 FHIR® Repository onFHIR.io and all the interactions between the Web-based frontend and the backend takes place via the HL7 FHIR® RESTful API.

Secure handling of patient data: C3DP is enhanced with role/identity-based authorisation, integration with existing Identity Providers (IdP), secure storage of patient data, and audit logging. OpenID Connect 1.0, OAuth 2.0, Smart App Authorisation, IHE ATNA, and custom JWTs are supported.

Further user-friendly functions including: Dashboard views, automatically matching EHR/PHR data with the care plan activities and input requirements of CDS services, user calendar, safe messaging among multi-disciplinary care team, real-time notifications linked to care team and patient actions.

Goals				
Title	Start Date	Target Date	Target	Actions
Monitoring eye disease	27 Mar 2019	27 Jun 2019		⋮
Comply with the dietary restrictions of mild renal failure and diabetes. Evaluate every 6 months.	27 Mar 2019	27 Jun 2019		⋮
Reduce weight	25 Feb 2019	25 Aug 2019	Body weight < 75 kg	⋮
Keep HbA1c level below agreed target	25 Feb 2019	19 Apr 2019	HbA1c < 53 mmol/mol	⋮

Education Materials				
Title	Start Date	Actions		
Type 2 Diabetes	27 Mar 2019	⋮		
High blood pressure - hypertension	22 Feb 2019	⋮		

Activities				
Title	Type	Start Date	Actions	
Referral to Ophthalmologist	Referral	27 Mar 2020	⋮	
Follow-up to check the results of the treatment	Appointment	08 May 2019	⋮	
Mediterranean diet with reduced sodium level (salt intake)	Diet	27 Mar 2019	⋮	
Have HDL-C test before the control visit Last Observation: 52mg/dL	Lab Request	27 Mar 2019	⋮	
Sulfonylurea	Medication	26 Feb 2019	⋮	
Self-measurement of blood pressure Last Observation: 130mmHg/90mmHg	Patient Order	27 Mar 2019	⋮	

C3DP provides a generic and disease-independent platform, which can easily be customised according to the local care pathways, targeted diseases and clinical guidelines. C3DP can be implemented in a new site and integrated with local systems in only a few months.