Strategic Command

Programme CORTISONE
Primary Dental Care

DRAFT Statement of Requirement (SOR)

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V0.3	20/02/2023	Detailed requirements summarised for RFI	Team Dragon
V1.0	10/03/2023	Uplift for issue with RFI	Team Dragon

TABLE OF CONTENTS

INTRODUCTION

Purpose

1.   This document presents the Ministry of Defence's (the Authority) Defence Medical Services (DMS) Programme CORTISONE Draft Statement of Requirements (SOR) for Primary Dental Care (PDC) capabilities.

2.   This summary SOR has been drafted to support the PDC Request for Information (RFI) and does not represent the totality of Programme CORTISONE's Primary Dental Care specification of requirements. Any information contained in this draft SOR may be retained, amended, or deleted in its entirety prior to any formal release of a final SOR to accompany an Invitation To Tender (ITT).

Status

3.   This is a draft version of this document until endorsed by Programme CORTISONE's Coordinating Design Organisation (Technical) and Coordinating Design Organisation (Business).

Structure of this document

4.   This document is structured as follows:

- **Programme CORTISONE.** Provides background information, context and an overview of the Programme.

- **Defence Primary Healthcare (Dental) (DPHC(D)) Overview.** Provides background on DMS' DPHC organisation

- **PDC Capability Requirements.** Provides an overview of required PDC capabilities

- **PDC Requirements Specification.** Details the 'Must have' PDC requirements and signposts required areas of functionality.

PROGRAMME CORTISONE

5.   Programme CORTISONE is a transformation programme, led by DMS, that is seeking to integrate Commercial Off The Shelf (COTS) products and services to deliver an Ecosystem of Healthcare Information Services. This will enable better patient outcomes and contribute to DMS resource optimisation, with the aim of maximising the number of personnel fit for role for Defence.

6.   The vision for Programme CORTISONE is to deliver a sustainable, integrated, cohesive and enduring information capability that will fully and effectively support the delivery of evidence-based medical and dental health and healthcare outputs.

7.   Programme CORTISONE aims to integrate healthcare information and ensure that information is available to the right people, in the right format and at the right time, to deliver safe effective healthcare to all patients. All the healthcare information services currently used and those in the future, are linked by an integration platform at the heart of the ecosystem so that the user is empowered to record information once and use it many times.
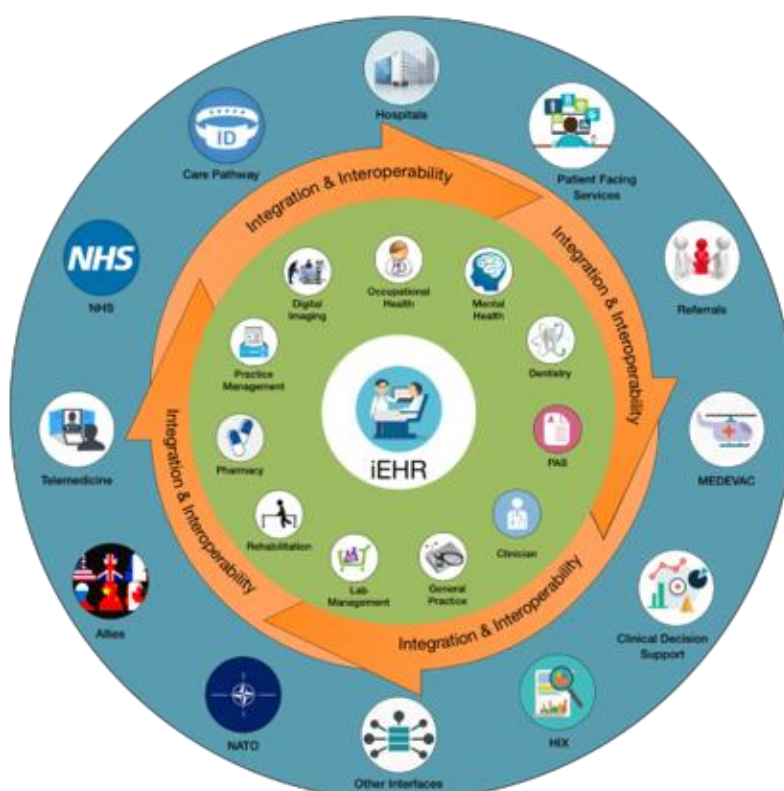
Figure 1: Programme CORTISONE Vision

8.   Programme CORTISONE's high-level architecture design assumes an 'Evolve to Open' incremental delivery approach based on a decomposition of the target services into a set of logical sub-systems with their manageable and procurable components.
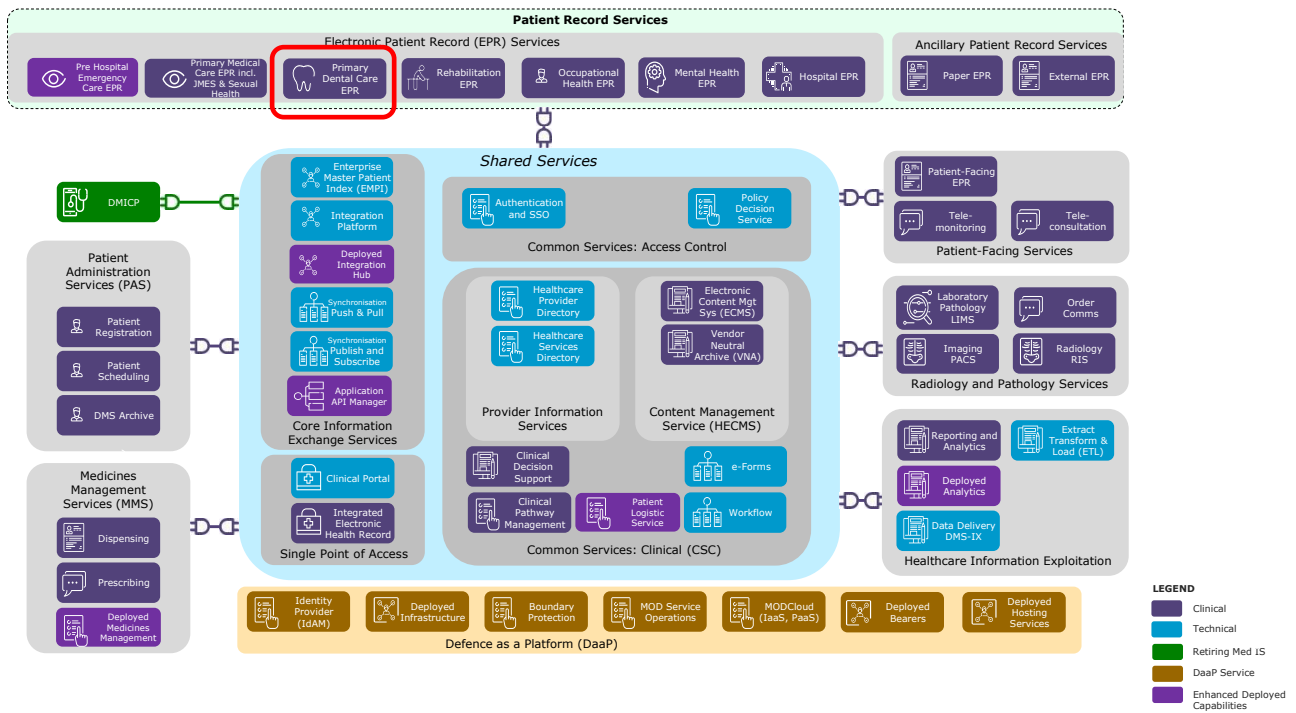
Figure 2: Programme CORTISONE Conceptual Target Architecture (PDC Highlighted)

9.   The programme is entering a market engagement phase for a PDC solution (shown in Figure 2 as 'Primary Dental Care EPR') and intends to hold a procurement exercise for one or a number of products to provide PDC capabilities.

DPHC(D) OVERVIEW

10. DPHC, headquartered at DMS Whittington, Staffordshire, is made up of four services: Royal Navy, Army, Air Force and Civil Service. It provides primary healthcare, dentistry, rehabilitation, mental healthcare and occupational health in the UK and overseas to service personnel and, where appropriate, their dependants.
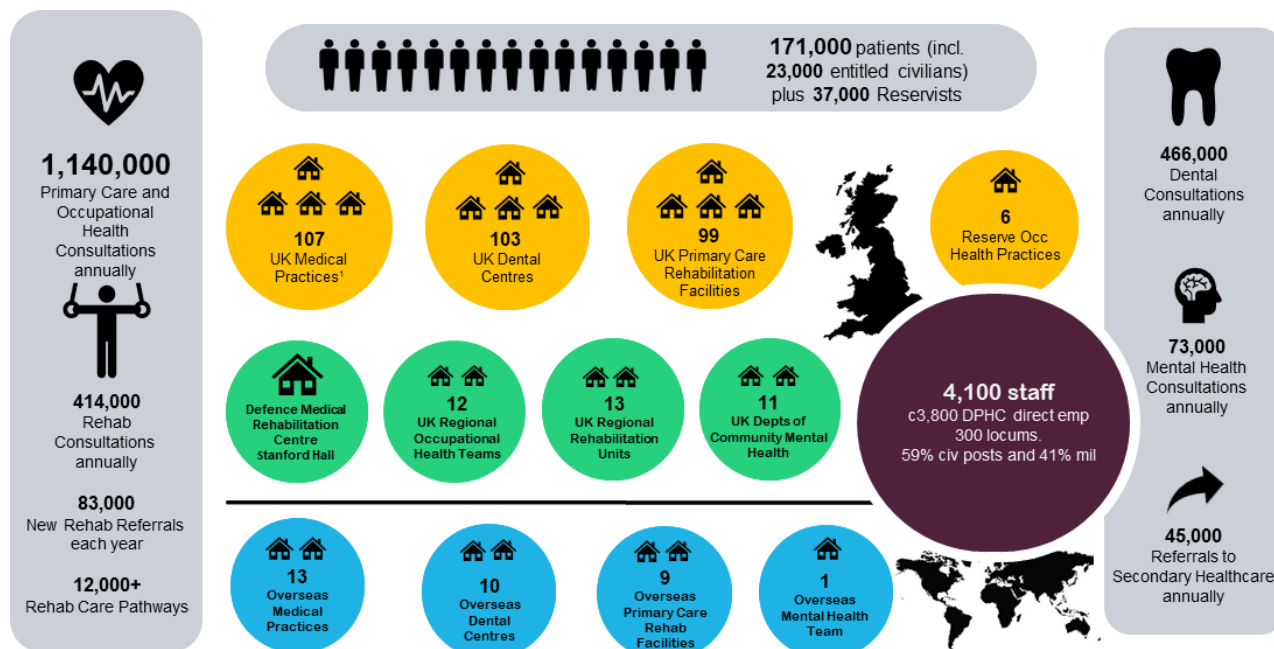
Figure 3: DPHC Infographic

11. DPHC's dentistry service is provided by DPHC(D), which employs over 700 trained Dentists, Therapists, Hygienists, Technicians and Dental Nurses.

12. DPHC(D) operates c. 110 dental facilities across 7 regions, serving a patient population of approximately 170,000:

- Scotland & North

- Northern Ireland, Wales & West

- East

- Central Wessex

- London South

- South West

- Overseas.

PDC CAPABILITY REQUIREMENTS OVERVIEW

13.   Primary Dental Care comprises the high-level capability requirements in Table 1 below.

| Capability Requirements	Description
System Configuration	DPHC(D) require a level of flexibility in systems to support the Ministry of Defence (MOD) and the changing structure of the organisation in the UK, and Overseas firm base and deployed environments. Operational and reference data such as Clinical Terminology, Drug Database, datasets, and organisational codes must be inherent in system configuration to provide consistency of information. Dental Systems must also support the use of local level configuration to enable the tailoring of generic solutions to suit the particular needs of DPHC(D) Dental Practices.
	System Configuration within a Dental System means:
	For Service Personnel/Patient: knowing an authorised user of the Dental System can access the correct information to support their care efficiently and safely.
	For Dental Practice: the ability to tailor a Dental System to meet the individual needs of the Practice, while ensuring the Dental Practice is responsive to changes in DMS.
	For the wider MOD, DMS and NHS systems: using standardised, national operational data to promote consistent communication and coordination between internal DMS organisations that have authorised access to Dental Systems.
Patient Dental Record Management	The Patient Dental Record management function supports electronic dental health records that contain high quality, structured data that can be viewed and manipulated, allowing for the correct identification of a patient and convenient access to all clinical and administrative information.
	The management of a patient record is not simply an administrative function but is pivotal to the workings of DPHC(D) Dental Practices/Centres. Patient Registration with a DPHC(D) Dental Practice/Centre and synchronisation of data with appropriate DMS and NHS National Systems is the entry point for patient access to services across the health and social care spectrum. Good data quality is an important pre-requisite for safe and effective communications. Computerisation of health records offers the prospect of rapid sharing of data and information, ensuring updated and relevant information is available to appropriate staff to support timely patient care.
	Effective patient record management within a Primary Dental Care System means:
	For DMS Patients: the accurate recording of a patient's personal information, which reduces duplication and discrepancies; supporting tools that allow patients to influence their own care and how they interact with health and social care organisations – right record about me, straight away, every time.
	The new Dental System should provide the facility for a Dental Practice to have:
	▪ A primary registration function. ▪ A secondary Dental Practice/Centre registration within registration type (Note: this is to enable a patient to register with a secondary

Capability Requirements	Description
	Dental Practice while deployed on overseas operations as well as their fixed base where they normally reside for an indeterminate period of time (i.e., beyond 3 months). This will not de-register their permanent registration from their primary Dental Practice). ▪ Temporary registration function.
	For a Dental Practice: the comprehensive management of a patient record ensures clinical safety by facilitating access to the correct patient record. It supports effective communication with patients, with relevant/nominated parties and with organisations providing other services – right patient record, straight away, every time.
	The Dental System will support effective patient recording by supporting real time processing. To support "right patient, right time", the system will incorporate point of entry validation, with mandatory data entry fields, cross validation to address base software and user prompts for missing or additional data requirements.
	The Dental patient record will be held electronically on the Dental System but will be integrated with the patient's overarching DMS integrated Electronic Health Record (iEHR). In effect, it will be one element of the full patient iEHR, providing relevant views to patient data for users with the correct Role-Based Access Control (RBAC) permissions.
	DMS Defence Dental health records are required to be kept for: ▪ 11 years for adults ▪ Child records retained until 25th birthday ▪ Hospital records 8 years for adults ▪ Child hospital records to be retained until 25th birthday or 8 years after death
	in line with Defence Health Record Policy and Department of Health Guidelines. In addition, Dental forensic health records (post-mortems forming part of the Coroner's report), such as operational images are required to be stored in line with clinical records for 100 years.
	For the wider DMS: utilising correct patient demographic and preference data through DMS dental organisations, and making it available across care settings improves efficiencies, promotes collaboration and encourages the use of a lifelong integrated care record – right patient with the right information, available where and when needed.
Call/Recall – Population Health Management	DMS Dental Practices require communications and alert functionality to facilitate the call and recall of patients for clinical services at a Dental Practice.
Searching and Reporting	Searching and reporting functionality allows a DMS Dental Practice to collate and organise data held in a Dental Practice system to support the monitoring of activity and produce inputs into other processes, such as producing targeted communications for select groups of patients or patient cohorts. Searching and reporting functionality will allow any structured data within the dental system to be extractable / exportable and reportable, thus supporting all DMS Dental Practices' local and enterprise (e.g., clustered, regional and national) reporting requirements, as well as data sharing with the CORTISONE iEHR. Effective searching and reporting within a Dental System means:

Capability Requirements	Description
	For a DMS Dental Practice: provision of flexible tools that support the monitoring of activity to satisfy both local and enterprise reporting requirements, the production of standard inputs into other processes, and rapid response to ad-hoc requests for information.
	For the wider DMS, and NATO: supporting the monitoring of evolving local, national and global health care initiatives and standards.
	Dental System searching and reporting functionality must be able to be used to report on the clinical care, performance and activity of individuals, patients and defined patient cohorts. In addition, the ability to monitor and measure practice activity, including appointment and consultation data is essential.
	The searching and reporting function must provide Dental Practices with the ability to define and manage a subset of regular reports, including supplier-defined reports to support existing, known standard reporting requirements, as well as react to evolving reporting requirements to support public health directives and initiatives as defined by MOD and central government health policy.
Dental Laboratory Test Requests and Test Reporting	The requesting of external radiographs and dental laboratory work is common practice within DMS Dental Practices across the UK and globally. Where electronic interaction and transfer of records/ requests is supported by NHS Trusts and dental laboratories, this should be the preferred method with a full end-to-end audit trail possible.
	Where radiographs are taken locally in surgery, integration with the existing software (or any future replacement) is essential given the key nature of this to clinical practice.
Consultation Management	Consultation management is the function which supports the recording of details relating to a patient's direct and indirect consultations / encounters with the DMS Dental Services.
	Consultation management means being able to correctly identify a patient record within the Dental System and easily access all relevant clinical and administrative information about the patient at the point of consultation / encounter. Information relating to a consultation / encounter such as Characteristics and Interventions must be recorded in a manner that is comprehensible to other systems and healthcare professionals to support on-going and future patient care.
	The mechanisms to maintain, check and utilise patient information must be efficient and convenient for all users, such that they can be used during a direct consultation / encounter. This will facilitate efficient, accurate and contextual data entry, and should include access to personalised views/displays of information to support the specific and emerging / changing needs of users.
	Effective consultation management within a Dental System means:
	For a patient: having a single patient record that provides Dental Practice staff members with access to the patient's full medical and dental history at the time of consultation / encounter, increasing the likelihood of correct diagnosis and timely treatment.
	For a Dental Practice (or group of Practices): the maintenance of a single, complete and comprehensible patient record that combines narrative with encoded information to provide a rich resource that can be

Capability Requirements	Description
	easily accessed, interpreted, and maintained to support patient care and safety. **For the wider DMS, NHS and NATO**: the creation of a complete patient record containing all details relating to a patient's consultations / encounters with DMS and NHS that can be used by healthcare professionals in a wide variety of settings and circumstances to support efficient decision making.
Data Entry Forms and Templates	Dental Practices will often have standard processes that can be facilitated by standardised data entry forms and templates. Some of these processes will be common across Dental Practices such as patient registration and report production, while other processes may only be relevant to one or more specific practices, such as a process to support a local, time-bound screening programme. Therefore, Dental Systems are required to support the creation and maintenance of data entry forms and templates to facilitate static, changing and evolving Dental Practice processes. The approximately 100 UK DMS Dental Practices undertake a significant volume of dental assessments. They all have standard processes that can be facilitated by intelligent standardised data entry templates and forms. DMS also provides similar healthcare services to roughly 10 fixed bases overseas. Today there are approximately 230 templates and forms in use in the delivery of DMS Dental Services.
Appointments	The appointments function supports the planning and coordination of activities in a Dental Practice. Dental Systems need to support the wide range of planned and unplanned encounters a Dental Practice is expected to perform, as well as support the planning, scheduling and undertaking of associated administrative activities. Therefore, functionality to support Dental Practice planning and coordination needs to be flexible, easy to administer, and of sufficient granularity to enable patient appointments to be scheduled with a specific clinician for a specific Dental service, if required. An effective appointments function within a Dental System means: **For a patient**: the ability to access Dental services as and when they are needed. **For a Dental Practice**: the effective management of time, personnel and resources to ensure all patients have timely access to appropriate Dental services and that staff members have the time and resources they need to discharge their responsibilities. **For the wider DMS and NHS systems**: the efficient allocation of resources across Primary Dental Care services to support the needs of all patients. Appointment functions in Dental Systems are predominantly focused on future planning for patient care, monitoring demand management, and ensuring the appropriate staff skill mix is available to meets the short to medium term healthcare needs of patients.
Prescribing	The prescribing function is required to support DMS Dental Practices in the safe and effective prescribing of medicinal products by providing

Capability Requirements	Description
	prescribers with up to date, comprehensive and readily accessible information on: • the medicinal products (e.g., drugs) and appliances which they can prescribe • the full medication regimen for their patients • contraindications, cautions, interactions, side effects and active ingredient duplications • sensitivities and allergies recorded for that patient. An effective prescribing function within a PDC System means: **For a patient**: the timely access to the right medicinal products. **For a Dental Practice**: supporting the prescription of appropriate medicinal products according to the treatment needs of individual patients and improve patient safety through access to information on the risk of adverse effects to medication. **For the wider DMS**: efficient use of resources by improving patient health through the appropriate allocation and funding of medicinal products.
Document Management	The document management function supports the tracking, storage, and management of documents as part of patient records. It is the function that supports a Dental Practice in ensuring that all information received as part of standalone messages and/or documents is related back to specific patient(s) and recorded against the appropriate patient record(s). Dental Systems are required to handle and automatically file a number of different types of messages and documents relating to patients, including (but not limited to): • Laboratory reports and prescriptions • Pathology reports • Digital dental radiology images and reports (e.g., OPG) • EDT messages • Photographs • Discharge letters. Effective document management within a Dental System means: **For a Dental Practice**: providing mechanisms that support the classification and automatic filing of documents and messages against patient dental records in order to reduce administrative overheads associated with document management. **For the wider DMS**: supporting standard classification systems to enable the use of automated processes for handling documents, increasing data security and reducing the burden of manual administrative processes. The requirements expressed here relating to document management are generic and are concerned with the general handling of patient-related documents by the Dental System. DMS has acquired an Electronic Content Management System (ECMS) as part of the overarching Integrated Electronic Health Record. The Dental System will be expected to enable integration with the ECMS for the handling of dental documents.
Task Management	Task management covers functionality required to support the planning, tracking and coordination of a Dental Practice's day-to-day activities. Task management functionality allows a Dental Practice to create and manage tasks both:

Capability Requirements	Description
	▪ Automatically as an output of an automated process, for example, a dental review task being created on receipt and filing of a document against a patient record ▪ Manually, for example, a user creating a task to return a phone call. Effective task management within a Dental System means: **For a Dental Practice**: supporting the coordination and planning of activities in a Dental Practice and providing mechanisms to track when/how particular duties are performed. **For the wider DMS**: providing Dental Practices with tools that allow them to effectively manage their work and track the progress of required activities, ultimately supporting the efficient use of DMS resources. Dental Systems are required to provide basic, generic task management functionality. All tasks in Dental Systems are to be considered public tasks, with all users able to view any task, as well as allocate tasks to any other user. Where tasks reference information and/or functionality elsewhere in the Dental System, the contents of the task are to be available to all users.

Table 1: PDC Capability Requirements

PDC REQUIREMENTS SPECIFICATION

14.   The following sections take each of the capabilities listed in Table 1 on page 14 and break them down into functional areas with summarised requirements.

System Configuration Requirements

Operational and Reference Data

15.   Dental Systems are expected to make use of national sources of operational and reference data to provide consistency across DMS. Reference data will include clinical reference datasets, such as Clinical Terminology and datasets used to populate the Drug Dictionary and non-clinical datasets.

16.   The Dental System provider is required to interface with the DMS Enterprise Master Patient Index (EMPI) as the principal source of patient demographic data for DMS. (Note: this system is integrated with the MOD JPA HR system). The Dental System provider is also required to hold and use the service personnel's NHS Number as a secondary identifier. The Dental System provider is required to integrate their solution with the CORTISONE Integration Platform (IP), which facilitates the transfer of patient demographic data between NHS and DMS. (Note NHS Scotland has a variant and utilises the CHI Number as an individual's NHS Number. NHS NI do not share NHS identifiers with DMS; on registration, service personnel from NI are registered with NHS England so that they may receive appropriate healthcare).

17.   The MOD DMS Organisation Data Service (ODS) downloads and information on API access (including ORD & FHIR) is available from https://digital.nhs.uk/services/organisation-data-service/apis-for-the-organisation-data-service.

18.   Traditional .csv downloads are available from https://digital.nhs.uk/services/organisation-data-service/data-downloads. The key download is the EPRACCUR.csv file which contains all Dental locations in the DPHC Dental estate in England coded under the V91xxx range. These are the 'NHS Facing' addresses which may be slightly different to the MOD versions of military addresses. The download also contains Regional Rehabilitation Units (RRUs), virtual practices such as base ports, and Institute of Naval Medicine (INM) facilities. It does not contain NI practices which are unpublished yet live.

Dental Clinical Terminology, NATO Categories, and Coding Subsets

19.   Dental Systems are expected to enable efficient encoding and retrieval of dental clinical information for use both within the dental clinical system and externally by appropriate third parties to support on-going and future patient care. Clinical terminology is essential for the interoperability of electronic health records across care settings. It supports the conversion of machine-readable code into meaningful, human-readable defined text and vice versa, thus providing a basis for supporting communication between clinicians and the safe transfer of data between systems.

20.   The Dental System should include the ability to use an active clinical coding system (as recognised by NHS Digital) as the primary source for recording clinical data against, including SNODENT, DM+D, NHS UK READ v2, ICD10.

21.   The Dental System should be configurable to hold, or externally reference, MOD-specific coding tables (e.g., NATO Dental Fitness classifications), add related code data fields to the patient record, and be able to report on them.

Patient Communications

22.   Patient communication functionality facilitates written contact and non-verbal communication with patients and/or their nominated representatives, as well as supporting written communication with other

health care providers in order to further patient care (i.e., communication about a patient rather than just directly to/from the patient). An effective patient communication function will support the creation and management of targeted communications via various delivery methods, including post, email and SMS.

23. Effective communication within a Dental System means:

For service personnel/patients: receiving clear, relevant and timely information from their Dental Practice in a format and manner that suits the patient's personal preferences, lifestyle, health and care needs.

For a Dental Practice: providing mechanisms that support targeted communication with patients and other health care providers to facilitate patient care, protect patient confidentiality and maintain positive relationships.

For the wider DMS: supporting the use of patient records as a means of communication between organisations, thus facilitating the coordination of patient care across the health and social care system.

24. To support Dental Practices in fulfilling their regulatory and legal obligations, such as those detailed in the DPA 2018, all communications that can be related to a specific patient must form part of that patient's record. This includes any communications sent directly to the patient, as well as all communications sent to other organisations where they relate to identifiable patient(s).

Further System Configuration requirements

25. This SOR will be further developed to include requirements for (but not limited to) the following related functional areas:

Data Archetypes	The Dental System will be required to support a number of data archetypes in order to promote the standard recording of data related to specific information, concepts and documents.
Practice and Staff information (including User Configuration)	Access to Dental System data and functionality is to be based on RBAC and specific mapping between Dental System functions and RBAC should be configured/requested by the individual's fixed base practice. However, Dental Systems may be required to provide supplementary local access configuration to a select group of key individuals at a more granular level to support both the requirements within this document and the needs of users.
Related organisations and staff information	Dental Practices/Centres will contact other organisations, in particular other health care organisations, to obtain resources and organise further patient care.
Flags and Alerts	Dental Practices need to be able to define and maintain clinical and administrative flags and alerts within the Dental System.
	An Alert is a prompt to the end user that either action needs to be taken or the action they may be attempting to perform may not be permitted and/or has certain consequence. There may be override facilities associated with certain types of alerts.
	A Flag is a visual icon indicating that there is important information that must be taken cognisance of in relation to an individual patient and or activity.

Patient Dental Record Management

Patient Registration

26.   DMS HM Forces service personnel/patients are registered with a Dental Practice for all dental services. As stated above, the Dental System is required to use the DMS number as its main patient identifier, and to hold and display the patient NHS number and service personnel number for the purpose of internal and external patient related communications. Administrator completion of a Dental Practice registration shall send a notification message via IP to DMS EMPI.

27.   The Dental System is also required to provide the ability to manually register different "types" of patients (such as HM forces, Non-UK Military, Reservist, UK Civilian (e.g., dependants, contractors), Non-UK Civilians etc., and injured captured individuals from other countries). This process will require the Dental System from time-to-time to automatically issue a temporary identifier for those individuals.

28.   CORTISONE is developing a centralised Patient Registration capability based on electronic forms and orchestrated by the IP. The Dental System is required to integrate with the CORTISONE IP in such a way as to permit a 'push' of patient registration details from the IP to the Dental System.

Reviewing/Updating Health Records

29.   The Dental System functionality is required to provide the DMS end users with the ability to view patients' dental records in accordance with the individual end user's RBAC permissions.

Further Patient Dental Record Management requirements

30.   This SOR will be further developed to include requirements for (but not limited to) the following related functional areas:

DMS Dental System internal iEHR Synchronisation	DMS Dental Practices' business need is for the new Dental System to both integrate with the core DMS Primary Medical Care (PMC) System and other associated applications that make up the patient's iEHR (e.g., Electronic Content Management, Order Communications, etc.). Integrations will flow via the CORTISONE IP.
Wi-Fi, Offline Mode and Synchronisation	DMS require the Dental System to be able to work across Wi-Fi connection and in offline mode. Service personnel/patients will complete health screening questionnaires and consent forms presented to them on mobile/tablet devices while waiting to be seen by the Dental Centre nurse/ hygienist or dentist. Offline mode will be used where Wi-Fi connection is poor and during military operations. Note: It is preferrable that the Dental System is device agnostic.
Related/Named Persons	Functionality to manage details relating to a patient's next-of-kin, carers, etc.
Patient Preferences	DMS is patient-centric and, as such, the Dental System is required to support patient choice and preference.
Unscheduled Care Services (UCS)	Functionality regarding managing details relating to capturing data from unscheduled dental care services, in particular 'out of hours' (OOH) and emergency department care delivery to military patients by both DMS and the NHS.
Patient Audit Trail	Functionality relating to the patient audit trail within the Dental System.

Call / Recall – Population Health Management

31.   This SOR will be further developed to include requirements for (but not limited to) the following related functional areas:

Call / Recall	Requirements relating to population health management and call / recall functions.
Recall Letters / Communications	Requirements relating to letter production associated with population health management and call / recall functions.
Recall Alerts	Requirements relating to recall alerts associated with population health management and call / recall functions.

Searching and Reporting

32.   This SOR will be further developed to include requirements for (but not limited to) the following related functional areas:

Search Criteria	The Dental System is the primary tool for recording clinical data in DMS Dental Practices. The amount of data an established Dental Practice will hold within a Dental System is likely to grow markedly over the next few years as DMS makes more services available electronically, such as online and digital services including tele-health consultations. As such, the provision of, and isolation of, particular information is crucial.
	Search and search criteria functionality are required to be flexible, allowing them to be used in support of both the ad-hoc identification of information and patient dental records, and the creation of regular reports and inputs into other Dental Practice operational business processes.
	In this context, 'search criteria' means the ability to define criteria to assess the content of individual fields in the Dental System and the ability to logically relate these criteria.
Search Results	Search results are the data items / records that meet particular search criteria when a search is performed. Search results must be able to be saved for future use, including as input into other Dental System processes.
User-defined Reports	A report is an output of search results which may include additional data associated with the records found and aggregate information such as numbers or percentages calculated from the search results. A report may be in multiple formats depending on the purpose (print for discussion at a meeting, output to csv or other file format as a 'data extract' or for web publication).
	In this context, a report template means a report definition which may be reused and applied to any compatible search results.
General Reporting / Report Templates	Dental Practices have many common national, clinical and operational information needs. It is important that where possible these information needs are met through standard reports pre-supplied as part of the Dental System.
	Dental Practice is a dynamic environment and therefore it is important that the supplier is able to respond to requests for new standard reports in a flexible and timely manner or that new Dental System reports can be readily configured by the user / Authority.

Cross-Practice Reporting	There is a need to provide information based on data from multiple Dental Practices. This may be based on Dental Practice clusters, regions or another grouping of individual practices.
	The Dental System functionality shall directly support new organisational models and ways of working through the provision of reports across multiple practices.
	It is essential that access to these reports is granted through appropriate models of consent, security and confidentiality.

Dental Laboratory Test Requests and Test Reporting

33.   Requesting of radiology imaging and dental laboratory work (crowns, bridges and dentures for example) is common practice within DMS Dental Practices across the UK and globally.

34.   The expedient return of radiology images and laboratory work is important from a clinical decision-making, treatment and patient satisfaction perspective. Where the electronic ordering and return of external images and laboratory work is possible, it should be the preferred method with a full end-to-end audit trail possible.

35.   This SOR will be further developed to include requirements for (but not limited to) the following related functional areas:

Dental Laboratory Orders, Prescriptions and Test Requesting	DMS Dental Practices require the ability to request/order their internal dental laboratories to manufacture or customise a variety of products to assist in the provision of oral health care provided to all eligible DMS personnel. These products can include crowns, bridges, dentures and other dental products. They also require the ability to order laboratory investigations from external providers (e.g., NHS).
Laboratory / Pathology Test Reporting	DMS Dental Practices require pathology orders, requests and prescriptions reporting.
	On receipt of pathology test result reports, the Dental System must store the result in the electronic patient record.
Digital Dental Radiology (DDR)	DMS Dental Practices use the GenDex and VinWix Digital Dental Radiology (DDR) Management Systems. The requirement will be to integrate the new Dental System with these legacy applications and/or their equivalent replacement product when the current contract terminates.
	The Dental System is required to integrate with the iEHR DDR Application via the CORTISONE IP to view, manipulate, receive and action image reports for Dental images, then store the result in the patient record.
	The Dental System is required to facilitate the display of a DICOM-compliant image which is suitable for diagnosis within 3 seconds of the image being taken.

Consultation Management

Finding and Accessing a Patient Record

36.   Dental Practices have, as a fundamental requirement, to support the correct identification of individual patients and their patient record. Therefore, the Dental System is required to provide the ability to search

for, identify and retrieve a patient record for use across the system by searching full or part of the contents of any combination of the following fields:

a. Family name / Surname

b. Given name / Forename (including first or other names)

c. Preferred name / Alias / Also Known As

d. Date of Birth

e. DMS Number

f. Service Number

g. NHS Number or CHI Number

h. Address (5 lines)

i. Postcode

j. Telephone number

k. Registration type

l. Local patient identifier

Basic Data Recording

37. The Dental System must ensure that all relevant clinical and administrative patient data is linked in a single patient record and that patient records combine narrative and encoded information to provide a rich record to assist clinical decision making.

38. The Dental System functionality should include the ability to record for every consultation / encounter, whether planned or unplanned, any number of data items including as a minimum:

a. Start date / time

b. Staff member(s) involved in the consultation / encounter

c. Organisation

d. Location (e.g., Practice, patient's home, hospital clinic)

e. Consultation / encounter type, mapped to a coded Dental clinical term, to support episodic entry (i.e., data is to allow identification of new episodes of care or reviews within an episode and allow linking of episodes to existing problems/diagnoses)

f. Record data pertaining to 'problem-based encounters'.

Consultation and Assessment Process

39. The Dental System is required to provide an audit trail for what has been amended and/or removed, when and by whom. All amendments/deletions from the patient record in any module should be fully auditable.

Dental Charting

40.   The Dental System should include the ability to record a dental chart (graphical representation), including (but not limited to):

    a.   A comprehensive set of symbols, including but not exclusively permanent/deciduous teeth, supernumerary teeth, restorations, root fillings, implants, crown/bridge, tooth surface loss, missing teeth, gaps, closed gaps, tooth movements and rotations, 12-14-point chart

    b.   The ability for users to add extra symbols (agreed centrally and distributed). For example, 'R' lesions (early caries definition specific to Defence Dentistry)

    c.   Anatomically correct tooth chart including roots

    d.   The ability to add notes to a chart (general or re individual tooth), including:

        (1)   A symbol to show that notes have been added

        (2)   Notes to automatically appear in consultation notes

        (3)   Notes to be dated.

41.   (Note: All notes should have a full audit trail recorded in the system to include user, location, date and time stamp).

Periodontal Charting

42.   The Dental System should include the ability to view periodontal data held within the patient contact record, including, but not limited to:

    a.   Most recent and all previous (historical) periodontal charts

    b.   BPE score (grid format)

    c.   Plaque and bleeding indices

    d.   Periodontal diagnoses

    e.   Risk factors.

Dental Treatment Plans

43.   As part of the ongoing care and treatment of MOD service personnel, the Dental System should have the ability to create a Dental Treatment Plan (DTP), ensuring efficient communication between clinicians where, for example, treatment has been completed by different clinicians.

44.   The DTP should have the following functionality:

    a.   The DTP is created automatically from a chart

    b.   The most recent DTP is to be displayed as default

    c.   In progress / completed items to be shown, colour-coded

    d.   The date created and date of updates are to be displayed

e.   The ability to produce an ordered, phased treatment plan, that can be modified

f.   The user has the ability to select DTP display options

g.   A completed or abandoned DTP should be clearly marked to avoid confusion with a current, active DTP.

Referrals (Internal, External, Requests and Discharge Letters)

45.   This section specifies the requirements for the dental services relating to the management of electronic referrals for access to health care services. This is to both internal DMS Specialist Services such as the Defence Centre for Rehabilitative Dentistry, but also externally to NHS and Independent Service Providers (where needed) for out of hours, emergency and acute healthcare sector services within the UK and globally, where required.

46.   Referral management includes the creation, forwarding and monitoring of patient referrals across a range of services, disciplines and locations. It must be flexible enough to integrate with the Dental electronic referral pathway, across the whole range of DMS primary and community-based healthcare delivery environments and locations.

47.   The referral management functionality must provide a process in which events that need to occur to deliver patient care are recorded accurately and in a timely fashion. It must also enable integration with CORTISONE's ECMS to ensure that all letters and clinical archived records are linked.

48.   Any changes to a referral and associated document records (where those documents are primarily or only in the Dental System) shall be recorded with date, time, person who made the change, which attribute values were altered and what the alterations were.

49.   The Dental system will provide a full audit trail of all actions applied to the patient referral.

Further Consultation Management requirements

50.   This SOR will be further developed to include requirements for (but not limited to) the following related functional areas.

Viewing / Displaying a Patient Record	Patient records will be accessed and used to support a wide variety of Dental consultations / encounters. As such, user interfaces are expected to facilitate efficient and accurate retrieval and interpretation of data contained within patient records to meet the specific and emerging/changing needs of users.
Decision Support	Many decision support tools are available on the market to support users in making clinical decisions during patient dental consultations. The Dental System should support integration with a wide range of decision support tools.
Dental Summary	Requirements with respect to recording the outcome of patient consultations.

Data Entry Forms and Templates

General Template/Form Entry

51.   The Dental System functionality should include the ability to define, design, amend and delete data entry form templates to reflect national, DMS-wide dental specialty, Dental Practice and groups of Dental Practices' specific requirements for data entry. Such templates should be capable of:

a.   Enabling Dental Read codes (SNOMED/READ and DM+D) and numerical values to be entered and stored with the patient record

b.   Allowing background text and hyperlinks to be added to the body of the template

c.   Being pre-populated with all historical entries of data relevant to those fields and present the logic against this data

d.   Displaying any medication entered on the patient record on the template relevant to those fields (e.g., statin, antibiotic, etc.)

e.   Displaying numerical data (e.g., NATO classification) in table or graph form and which should also be printable.

52.   Each template should have as a minimum:

a.   A unique identifier and / or name and version

b.   A template status (whether draft, published / available for viewing and use across the system or obsolete)

c.   Basic business logic / rules, such as the ability to:

(1)   Include defaults e.g., current date

(2)   Auto-populate data items from within the patient record e.g., use of merge fields

(3)   Auto-populate data items based on other data within the form

(4)   Set mandatory data items.

Appointments

Session Management

53.   Sessions are used to describe the functionality by which blocks of time can be defined to support the planning and allocation of specific activities to specific time periods or slots.

54.   The Dental System should provide functionality for dental practices to manage appointment sessions, with flexibility/configurability to provide practices with an appointment builder to enable the scheduling of consulting sessions / clinics.

Appointment Management

55.   Appointment management supports the effective allocation of sessions and slots to specific activities and supports the booking of appointments for / with patients. The Dental System should provide a full audit trail of all bookings and amendments / cancellations to bookings or slot types.

Appointment Demand Management

56.   The DMS Defence statistics community is interested in exploring the options for incorporating data capture to monitor demand management for dental appointments.

57. All Dental System appointment data should be available for reporting purposes, either through the Dental System itself or exportable to an external data warehouse/management reporting capability.

Prescribing

58. This SOR will be further developed to include requirements for (but not limited to) the following related functional areas.

Drug Database	The Dental System requires, or should support integration with, a comprehensive database of prescribable items to support authorised prescribers, record items prescribed by others outside the organisation (e.g., hospital and other external prescribers) and to record self-medicated items (e.g., over the counter drugs).
	All prescribing has to abide by the laws of the country the prescriber is prescribing within and Military Law.
Practice Formularies	A Dental Practice formulary is a selected subset of the system's drug database.
Defence PHC Formulary (DPCF)	The DPCF formulary is essentially another practice formulary and subset of the system's drug database. The key requirements are the ability to deploy remotely to practices to allow central development by DMS, and the provision of a mechanism to facilitate automatic/electronic issuing of updates to all DMS practices.
Point of Prescribing	Dental Practice business needs at the point of prescribing.
Non-medical Prescribing	The legislation governing prescribing by non-medical prescribers (Medicines Act, Control of Medicines Act) has been adopted by the 4 nation countries. There are no significant differences between how prescribing works for these groups between England, Wales, Scotland and Northern Ireland. However, there have been and will continue to be changes to the professional groups able to prescribe and to the level of prescribing undertaken by each group.
Supplementary Prescribing	Supplementary prescribers can prescribe a range of products covered by legislation. Examples include all General Sales List ('GSL'), pharmacy only ('P' list) and Prescription Only Medicines ('POM') (including 'black triangle' items), Advisory Committee on Borderline Substances ('ACBS') items and unlicensed products.
Repeat Prescribing	Dental Practice business needs relating to repeat prescribing by authorised users.
Instalment Prescribing	The dosage instructions to support instalment prescribing / dispensing can be very verbose; this is particularly true of the Home Office approved wording for controlled drug instalments. The Dental System is therefore required to allow a very large amount of free text to be entered to express the instructions fully. The maximum size of the text is limited only by the size of the prescribing area on the prescription form (or equivalent) and the associated overprint specification that details font size, etc.
Regimen Review	Dental Practice business needs relating to regimen review.
Prescription Printing	The Dental System must provide the ability to print prescriptions to the specifications of a specific MOD prescription layout (MOD F Med 296) or

	NHS equivalent (FP10) and be able to use different formats depending on prescriber type.
Recording other Drugs and Appliances	In order for DMS dentists to make informed decisions about patient care, including prescribing, the system needs to be able to store a comprehensive picture of a patient's prescribing history and current medication and therefore the system needs to record various details about items prescribed outside the Dental Practice, including at Medical Practices, hospitals, hand-written items (e.g., during out-of-hours home visits) and over the counter (OTC) items.
Handling Items with 'As Needed' Dosage Instructions	Prescribed items which are not consumed regularly (i.e., those that are used intermittently) are often dispensed again unnecessarily, resulting in patients holding large amounts of the item in stock which may never get used and therefore incurring wastage. Unnecessary prescribing and dispensing of intermittently used items may occur when patients or their representatives request a repeat prescription and default to selecting all items on a repeat listing. Similar problems may occur when surgery staff issuing prescriptions inadvertently select intermittently used items which may not have been requested by the patient.
	To provide greater control over the inadvertent selection of these items when they are not needed, systems are required to differentiate such items (in both the patient record and on the repeat re-order form) from those consumed regularly.

Document Management

Document Configuration

59.   The Dental System provider is required to describe the document management functionality and related out-of-the box document management integrations available in their Dental System.

Task Management

60.   This SOR will be further developed to include requirements for (but not limited to) the following related functional areas:

Configuration	DMS Dental Practice task management configuration requirements.
Task Management	DMS Dental Practice task management requirements.

Additional Functional Requirements

Screen Refresh and Usability

61.   The Dental System should ensure that the currency of information displayed is always explicit in the interface, specifically, currently prescribed medication and any lists that may be accessed or altered by other users such as appointments and worklists / task lists.

62.   This SOR will be further developed to include requirements for (but not limited to) the following related functional areas:

Online Help	DMS Dental Practice online help facility requirements.
File Acceptance	DMS Dental Practice file acceptance requirements (e.g., attachments).
Message Handling	DMS Dental Practice message handling requirements (e.g., documents/message generated by the system).
Multiple User and Device Support	To meet the demands on Dental Practices, the Dental System is required to support multiple concurrent users while maintaining system performance such that additional users do not result in noticeable degradation of service.
Numeric Conversions and Comparisons	The Dental System is required to accurately record numeric data items and allow assessment of comparable numeric measurements recorded using different units of measure.
Test Patients	The Dental System is required to provide functionality that can support the local testing and training needs of DMS Dental Practice users, provide mechanisms to support the identification and resolution of issues, and support the process of assuring that a given instance of a Dental System is able to interface with relevant DMS and NHS systems.
System Administration	DMS wishes to better understand the system administration functionality (local and/or central) of the Dental System. The Dental System provider is required to describe the system administration functionality available in their Dental System.