

RMD Triage

Conversational system for general practitioners to support referral to rheumatology examination and education for rheumatic diseases.

High-level Data Model

By: Parinaz Tabari (ptabari@unisa.it)

- **Core Practitioner Information** (profile: **PractitionerAndSpecialtyProfile**, base resource: Practitioner)

Description of demographic and personal details of the practitioner

Data element	FHIR path	Data type	Comments
Name (first)	Practitioner.name.given	humanName	Practitioner.name
Surname	Practitioner.name.family		
Age	Practitioner.birthDate	integer	Can be calculated from birthDate
Gender	Practitioner.gender	code	Male, female, other from <i>RestrictedGenderValueSet</i> because the base resource also contains unknown.
Date of birth	Practitioner.birthDate	dateTime	Added instead of age
Qualification	Practitioner.qualification.code[coding] Practitioner.qualification.code[text]	codeSystem	Should be selected from http://hl7.org/fhir/ValueSet/c80-practice-codes
Year of graduation	Practitioner.qualification.period[start]	dateTime	Starting time with inclusive boundary
			Can be removed if we need to use PractitionerRole resource. See the last page.

- **System output and date of assessment** (profile: **SystemOutputCommunication**, Base resource: Communication)

Output of the interaction between the conversational agent and the user

This data element is confusing since it is called “system output” but I do not think it is rational to only record the output of the system in a whole conversation. In case we decide to record all, I can revise this profile using multiple payloads.

Data element	FHIR path	Data type	Comments
System output	Communication.payload.content[x]	String	Conversation with the system
Date of assessment	Communication.sent	dateTime	(when sent)-date of communication with system. <i>I assumed the “date of assessment” in the Excel file was the date the doctor</i>

			<i>communicated with the system. However, to be sure, I also considered the date for sus assessment.</i>
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- **Usability assessment and date: Usability questionnaire results, Physician self-report (Profile: **SUSUsabilityAssessment**, base resource: Observation)**

I considered the sus as an observation since we wanted to record the overall sus score (a number between 0-100). In case we wanted to record each item of the questionnaire separately, we could do so using Questionnaire and QuestionnaireResponse resources. (I defined the SUSAnswerCodes codesystem for the Likert scale as an experiment, but it is not actually necessary if we want to use Observation.)

Data element	FHIR path	Data type	Comments
SUS score	Observation.code Observation.extension[SUSScore] – this is just for constraint (value should be in range 0-100) <i>–A separate Extension: SUSScore is implemented to define the data structure which should be Int.</i>	Integer 0-100	Example custom code for sus
Date of assessment	Observation.effectiveDateTime	dateTime	Date of sus assessment

Important note:

In case we want to record the specialty of the practitioner in this specific setting, we should record it as PractitionerRole.specialty (*in this particular job for this particular organization, these are the specialties this person is allowed to perform*). Otherwise, practitioner.qualification would be enough (*what this individual is trained/credentialed to do or what the person is able to do*). To be sure, I implemented both. Any updates are possible, considering our preferences.

- **Practitioner specialization details**

(profile: **ParticipantPractitionerRole**, base resource: PractitionerRole)

In case we want to use this, ParticipantPractitioner profile should be used instead of PractitionerAndSpecialtyProfile.

Data element	FHIR path	Data Type	Comments
Practitioner	PractitionerRole.practitioner	Reference(Practitioner)	Practitioner that provides services for the organization
Specialty	PractitionerRole.specialty	CodeableConcept	Specific specialty of the practitioner.

			<i>Should be selected from:</i> http://hl7.org/fhir/ValueSet/c80-practice-codes
Year of graduation	PractitionerRole.period.start	dateTime	The period during which the practitioner is authorized to perform in these role(s) - <i>I considered the Start date of the role as the graduation year.</i>