Challenges in Implementing CDSC Web Service –Vendor Perspective

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NEXTGEN HEALTHCARE

Background

- Project was taken on as a proof of concept project from NextGen's perspective
- NextGen EHR/CDSC web service integration is in the final stages of development
- Client site testing with test patients has started

Overview

- Challenges faced during EHR/CDSC web service integration
- Challenges with managing dual sources of clinical decision support
- Provide details of how the CDSC web service integrates with the NextGen EHR

Terminology Challenges

- NextGen currently uses ICD-9 code for diagnoses and that is what is exported to the CCD
- CDSC required SNOMED codes
- NextGen had to perform mapping from ICD-9 to SNOMED codes using a third party product

Future Development

- Current standards widely used by vendors should be selected to minimize the need for rework or third party products
- Meaningful Use Stage 2 will require that the problem list use SNOMED so that will become the standard
- NextGen will support SNOMED in next version

Mapping Challenges

- CDSC has elected to interpret pregnancy codes more narrowly for pregnancy states
- For example

  198992004 Eclampsia in pregnancy

  does not represent pregnancy

  BUT

  90325002 Vomiting of pregnancy

  represents pregnancy

Mapping Challenges

- Another example

  199228009 Diabetes mellitus in the pueperium - baby delivered during previous episode of care

  199226008 Diabetes mellitus in the puerperium - baby delivered during current episode of care

  Neither represent DM

Mapping Challenges

- Medications in NextGen use NDC codes
- CDSC uses RxNorm
- A custom xref table was created and needs to be manually deployed to allow the xref

Mapping Challenges

- Allergies in NextGen are coded at the drug level even if classes are selected
  - Allergy classes display on CCD without codes
- Allergies in NextGen are coded using UNII
  - CDSC uses RxNorm for allergies
- First Data Bank does not provide RxNorm mapping for allergies, only drugs

Available FDB Mappings

FDB Code	RxNorm Concept
GCN_SEQNO	Semantic Clinical Drug (SCD)
GCN_SEQNO	Semantic Branded Drug (SBD)
HIC_SEQN	Ingredient (IN)
NDC	SCD
NDC	SBD
NDC	Generic Pack (GPCK)
NDC	Branded Pack (BPCK)
MEDID	SCD
MEDID	SBD
MED_NAME_ID	BN (Brand Name)

Mapping Development

- Identifying the class allergies in FDB
- Getting a copy of the NDF-RT codes for allergies
- Cross reference the FDB code to the NDF-RT code
- Implementing the logic in the interface code
- All meds will be mapped to RxNorm

Non-Codified Data Challenges

- CDSC requires foot and eye exam data
- Data is captured in structured fields but they are not codified and do not directly populate a CCD
- Protocol data are not included in the CCD
- Procedures are included in the CCD

CCD Changes

- The pregnancy information was in a CCD dedicated section rather than a subsection of the problem list.
- The patient data needed to be de-identified.

Workflow Challenges

- CDS in NextGen EHR is comprehensive & actionable
- How to best display CDSC recommendations within workflow?
- Who should see recommendations
- How to pass requests efficiently

Future Development

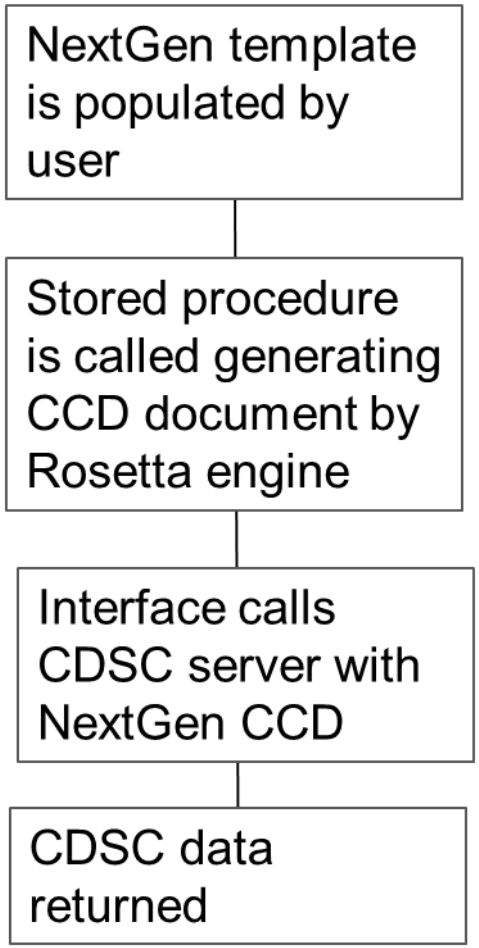
- Imported recommendations need to be actionable
- Duplicate recommendations need to be stripped if they are already in EHR
- More high value CDS needs to be provided
  - Radiology appropriateness indicators
  - Cardiology appropriateness indicators

Administrative Challenges

- Multiple legal agreements
- Different time zones
- IRB approvals

NextGen EHR/CDSC Web Service Integration Details

Schematic of NextGen/CDSC Integration



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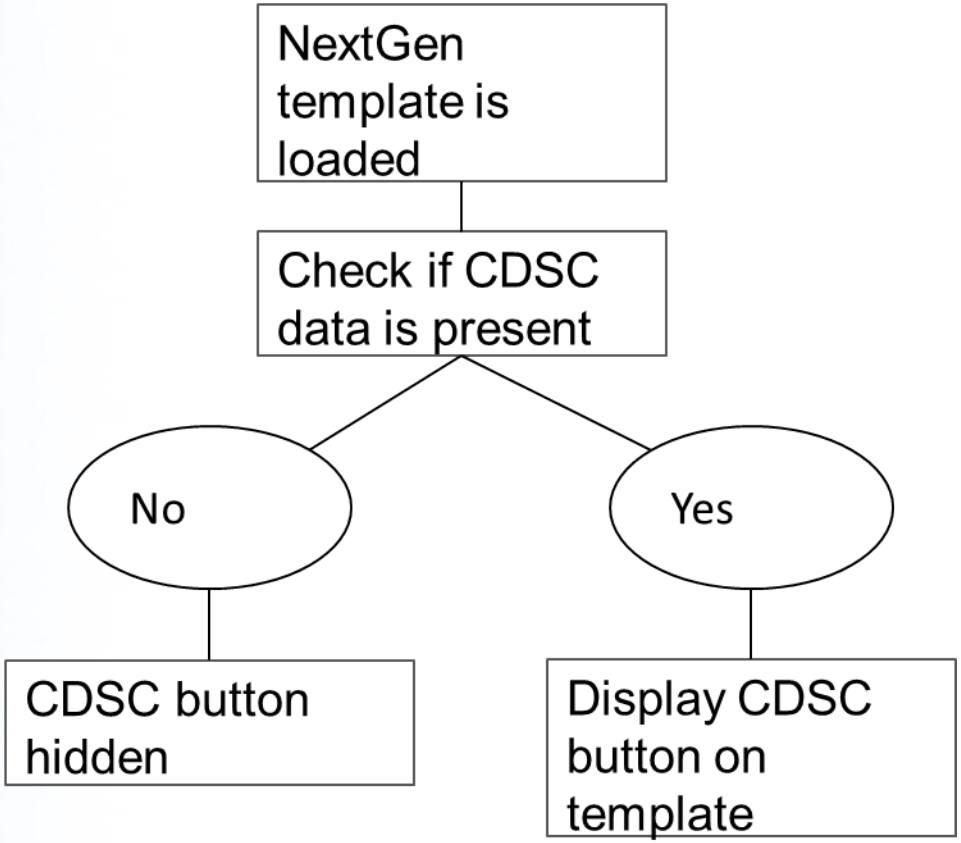
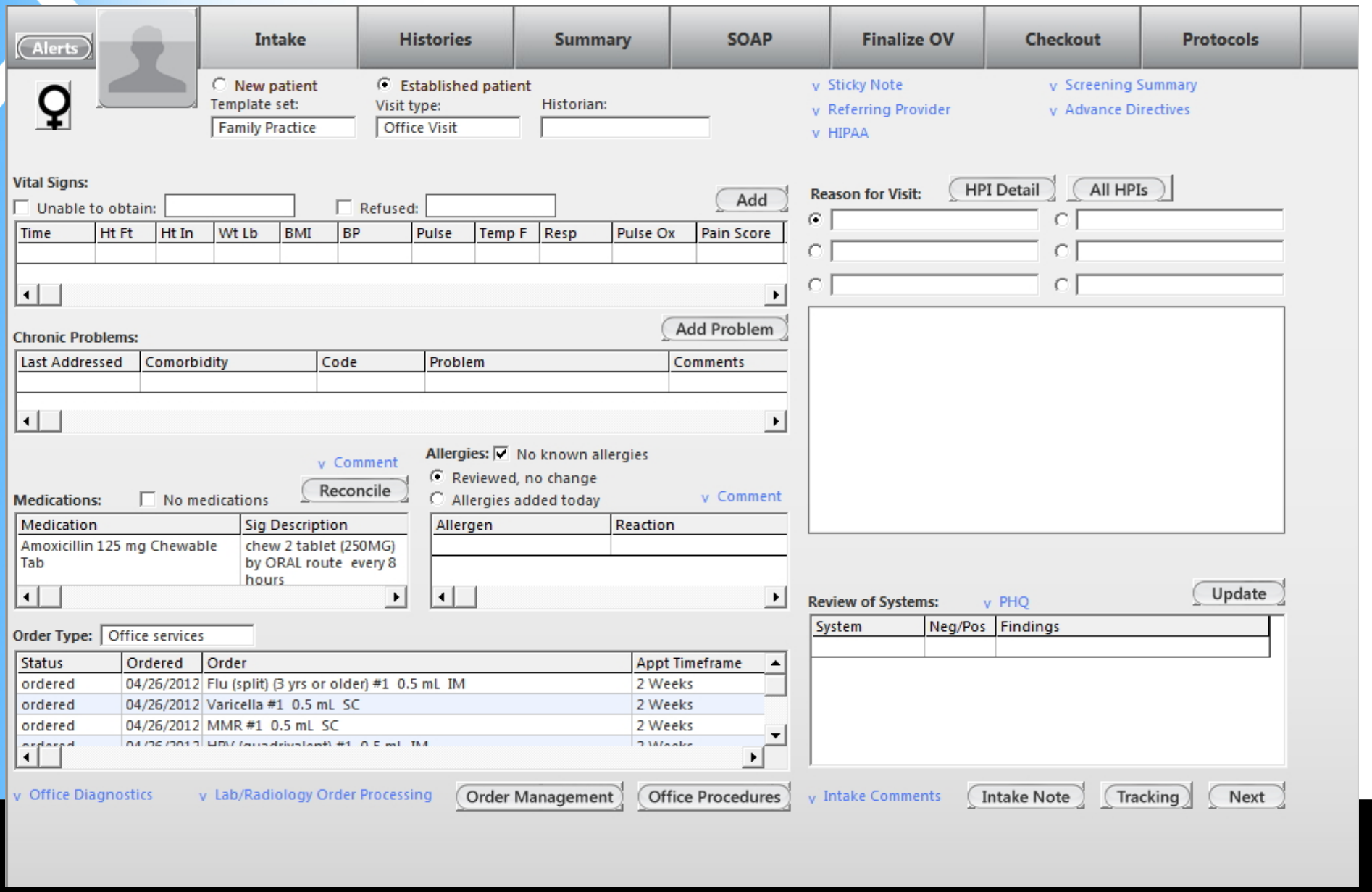


Screenshots



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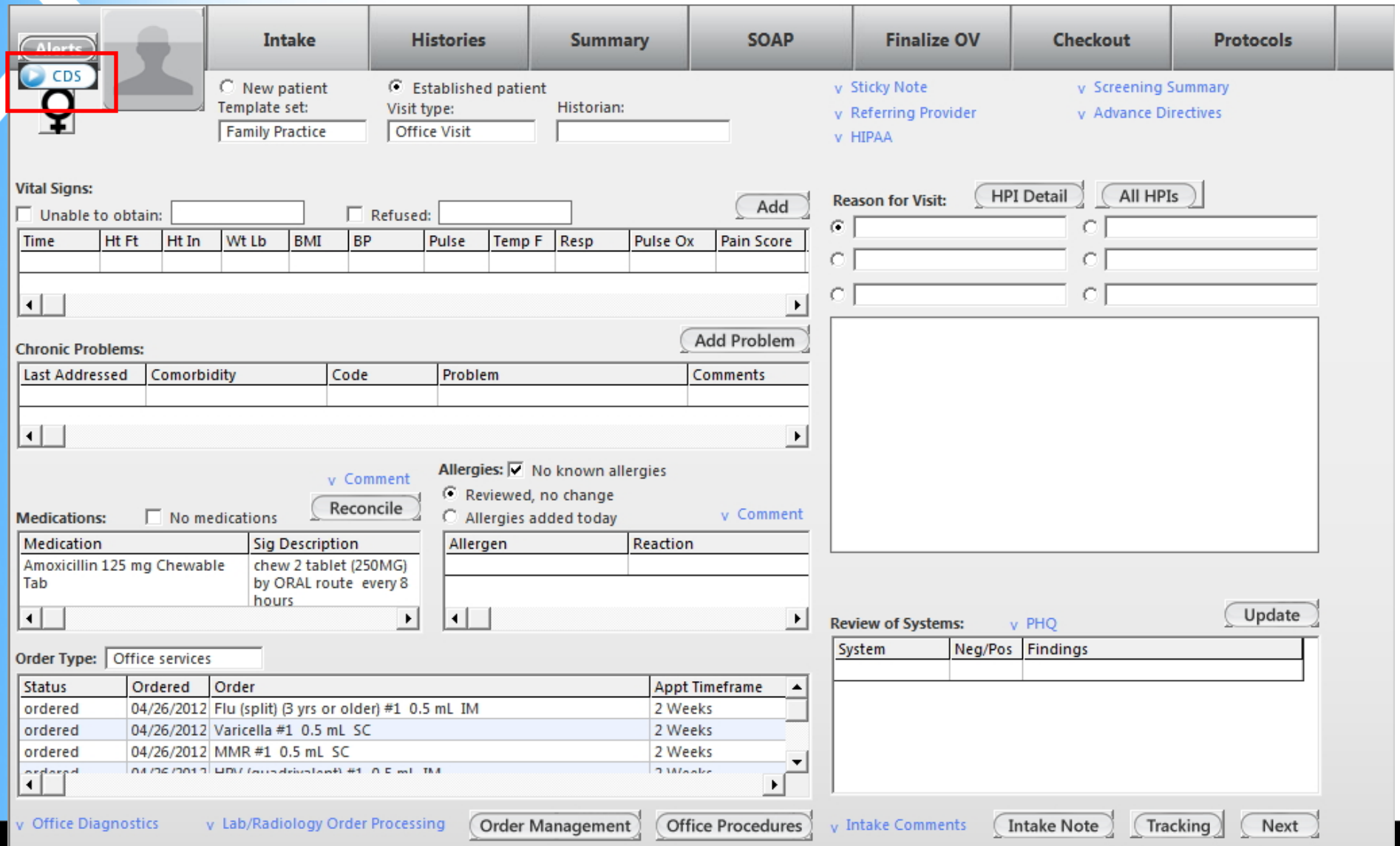


My Plan

My Plan | Plan Details | Labs | Diagnostics | Referrals | Office Procedures | Review/Cosig

Diabetes Mellitus, Adult Onset, Uncontrolled

Diagnosis	Dx Code	C/T
Routine Medical Exam	V70.0	T
End stage renal disease	585.6	T
Diabetes Mellitus, Adult Onset, Uncontrolled	250.02	T

Quick assessments

Problem Focused Assessments	Code
Acute bronchitis	466.0
Adhesions, Female Pelvic	614.6
Allergic Rhinitis	477.12
Amenorrhea	626.0
Anxiety	300.09
Atrophic Vaginitis	627.3
Atrophic vaginitis	627.3

Use order set from: My saved Others saved -select a set to use

Display: Order sets Protocols — Protocols due in: ! 3 Months

Save Order Set

Add or Update Ass

Assessment cor

Procedure/Test Inst

Record Request

Counseling Deta

Reference System: custom_impression_ **Category:** Diabetes

Perform: -today

Pregnant: No Yes Possible Not pertinent

Lab orders

Clear

1 Hemoglobin A1c
2 CMP
3 CBC w/diff
4 Lipid Panel
5 Microalb/Creat Ratio, Randm Ur
6 C-Peptide, Serum

Office procedures

Clear

1 Glucose blood test
2 click arrow to choose

Instructions

Clear My Instructions Add

1

Additional orders

Clear Type: Select type (Required)

1 click arrow to choose

Diagnostics

Clear MRI/MRA Information

1 Electrocardiogram, complete (ECG)
2 click arrow to choose

Office supplies

Clear

1 click arrow to choose

Follow-up visit/referral

She is to schedule a follow-up visit
She will be referred to
Disposition:

Office medications

Clear

1 Insulin injection
2 click arrow to choose

Office labs

Clear

1 Glycosylated hemoglobin assay
2 Lipid profile
3 Urinalysis, non-automated, w/scope
4 click arrow to choose

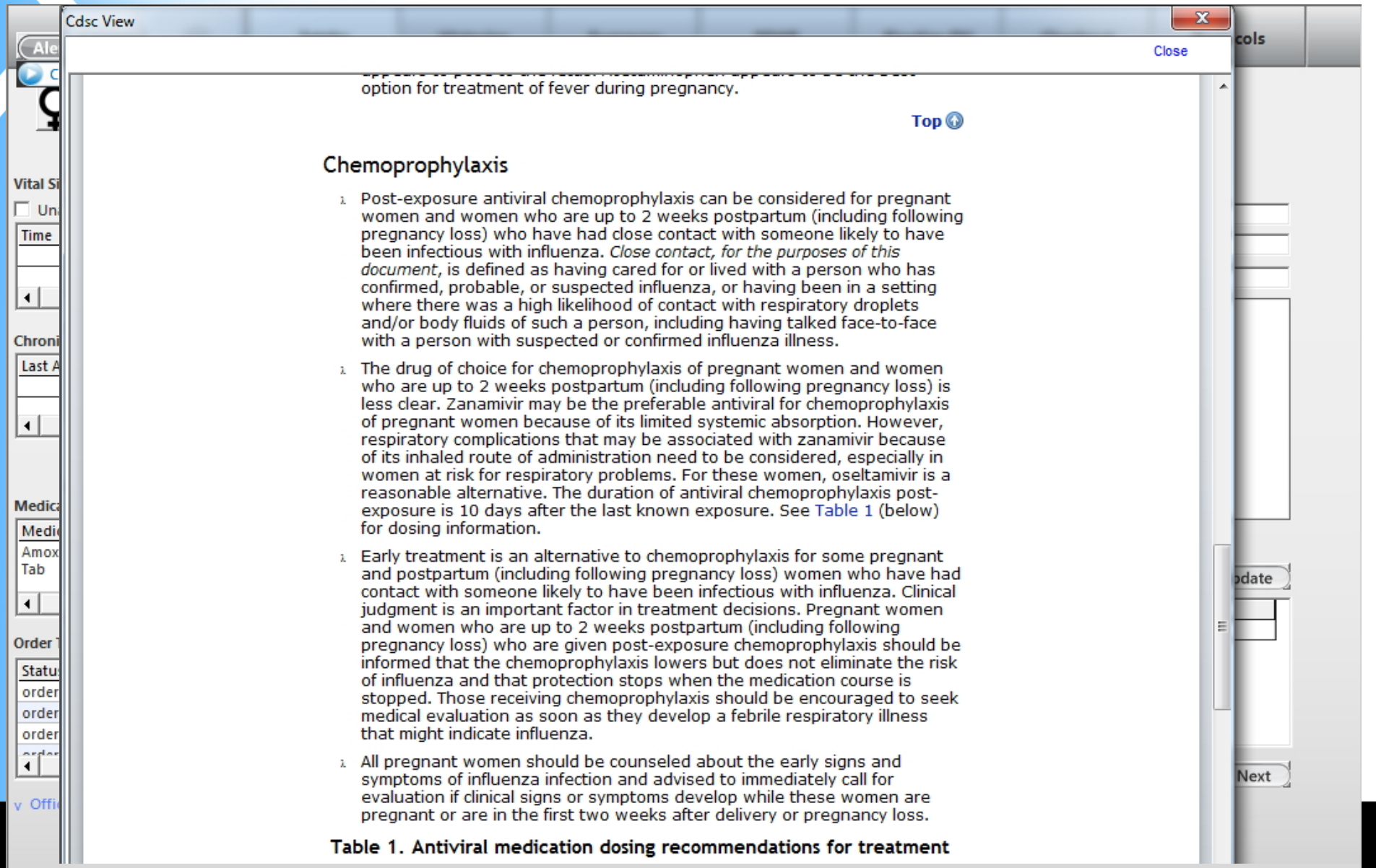
Task Auto Tasking On Place

(Labs/meds/diagnostics ordered here do not upload to

Lab/Diagnostics/Radiology Order Module Process

Save & Close

Recommendations



Questions

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