EHR v 1.1 p13
SNOMED CT® and the Integrated Problem List (IPL)

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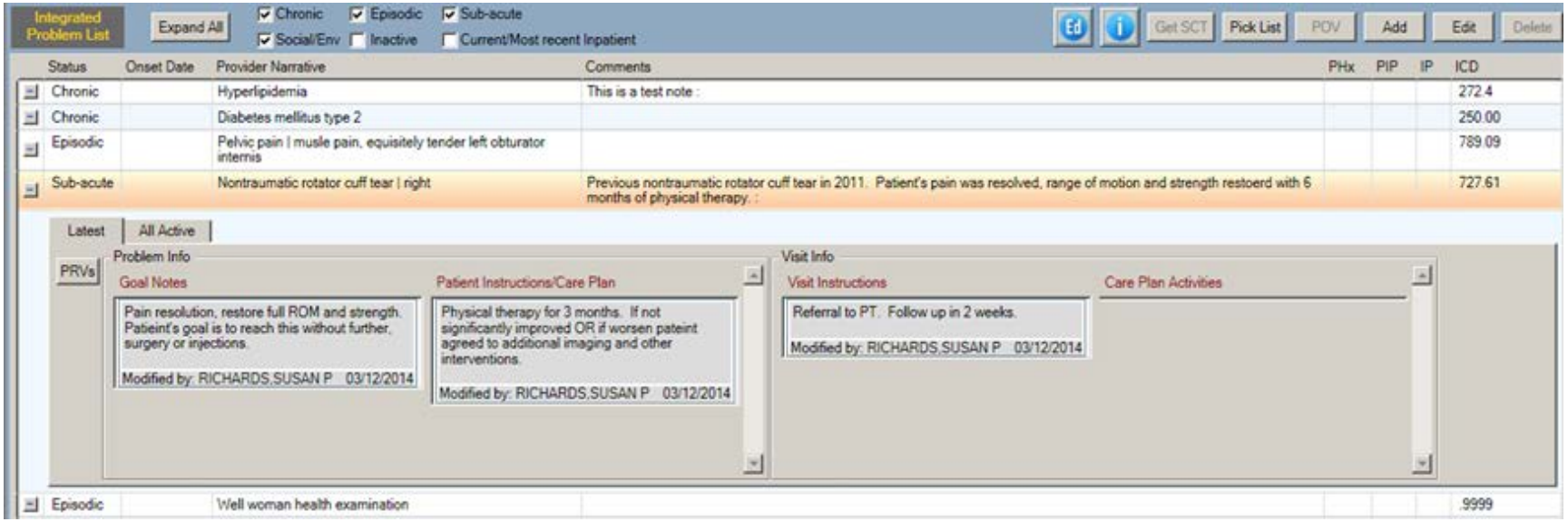
EHR Program

Topics

- Overview of SNOMED CT®
- Getting started with IPL – tips for a smooth transition
- Overview of the IPL functionality
- Rolling out IPL functionality



What is SNOMED CT®?

Systematized **NO**menclature of **MED**icine **C**linical **T**erms (SNOMED CT®) is a comprehensive multilingual clinical terminology that provides clinical content and expressivity for clinical documentation.

Clinician friendly language to document clinical impressions, findings and diagnoses.

Why the Change to SNOMED CT®?

2014 Certified EHR requires:

- SNOMED CT® for problem list
- Longitudinal problem focused documentation including goals, care plans and visit instructions
- SNOMED CT® for much of the data used in Clinical Quality Measures

Transition to ICD-10 – our goals are to:

- Stabilize the user interface in advance of ICD-10 changes
- Improve clinical documentation of problems and encounter diagnoses to support ICD-10 coding

More About SNOMED CT®

- Extremely large set of concepts and descriptions representing many standard terminologies
- Scalable for a variety of uses
- Owned and maintained by the International Health Terminology Standards Development Organisation (IHTSDO) in Denmark
- Released in the U.S. by the National Library of Medicine (NLM)

Source: IHTSDO, www.snomed.org

SNOMED CT® Definitions

Clinical Expressions

Concept – the computer readable "code"

Example: 823660015 (concept for the disorder of the Common Cold)

Descriptions – explain concepts in a human readable expression

Example:

Common cold (disorder) – fully specified name which is unique

Common cold – preferred term

Cold – synonym

Head cold – synonym

Relationships – define the type of association between two related concepts

Example: Common Cold (disorder), a viral upper respiratory tract infection (disorder)

SNOMED CT®
Reduces Ambiguity

SNOMED CT® Definitions (cont.)

Scalability and mapping

Subsets - reference sets, value sets - a collection of SNOMED CT® concepts used for a particular purpose

Example: Pick List, Sub-search, drop down selection in EHR

Extensions - incorporate concepts, descriptions and terms that are unique to a particular region or country

Example: U.S. and U.K. have their own extensions

Cross maps - explicit links to health-related classifications and coding schemes such as ICD-9-CM and ICD-10

Example: SNOMED to ICD-9 map

SNOMED CT® in the RPMS EHR

Where will you see SNOMED CT® ?

- You will select SNOMED CT® terms instead of ICD-9 or ICD-10 codes for diagnoses and conditions on the problem list, and clinical indications when ordering labs, medications and consults.
- SNOMED CT® codes will also be stored in the background in other areas of EHR.

SNOMED CT® in the RPMS EHR (cont.)

What does this mean for the clinical user?

- The most significant change is a redesigned and redefined problem list.
- The way problems are entered and managed and how POVs are selected has been changed.

What is the Single Most Important Thing I Can Do Now to Prepare?

Clean up existing problem lists.

- Remove redundant entries.
- Remove inappropriate entries.
- Inactivate resolved problems.
- Focus on cleaning up active problems; if time allows clean up inactive problems.
- Ensure problem entries are coded when possible.
  - When updating, search and select coded entry.
  - Data entry can run a list of un-coded problems and assist with coding ***(do not ask coders to do this until the clinical staff has removed redundant and inappropriate entries).***

Mappings to ICD

Mappings are an integral part of the design of the Integrated Problem List and how SNOMED CT® will assist IHS with the transition to ICD-10.

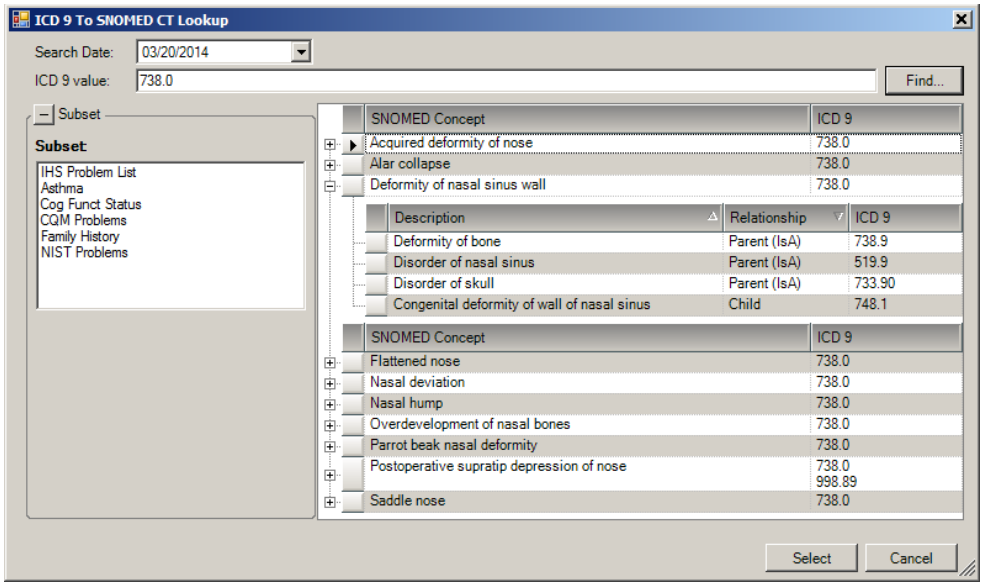
These mappings automate, only when appropriate, assignment of ICD codes.

Mappings are transparent to the user. They are visible when selecting a SNOMED, on the problem list, visit diagnosis, and clinical indications.

SNOMED CT® Related Maps Used in RPMS

ICD-9 to SNOMED CT® reverse map was developed by CMS and released by NLM

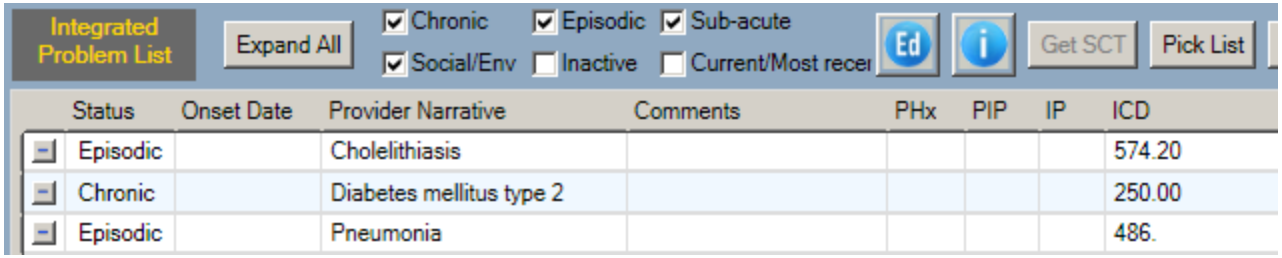
- ***Use in EHR*** - for assistance in the transition of the problem lists to SNOMED



SNOMED CT® Related Maps Used in RPMS (cont.)

SNOMED CT® to ICD-9 – *provided by CMS and delivered **by** NLM*

- ***Use in EHR*** – for SNOMED Problems and Problems selected as POVs prior to ICD-10 transition



SNOMED to ICD-9 Mapping Examples

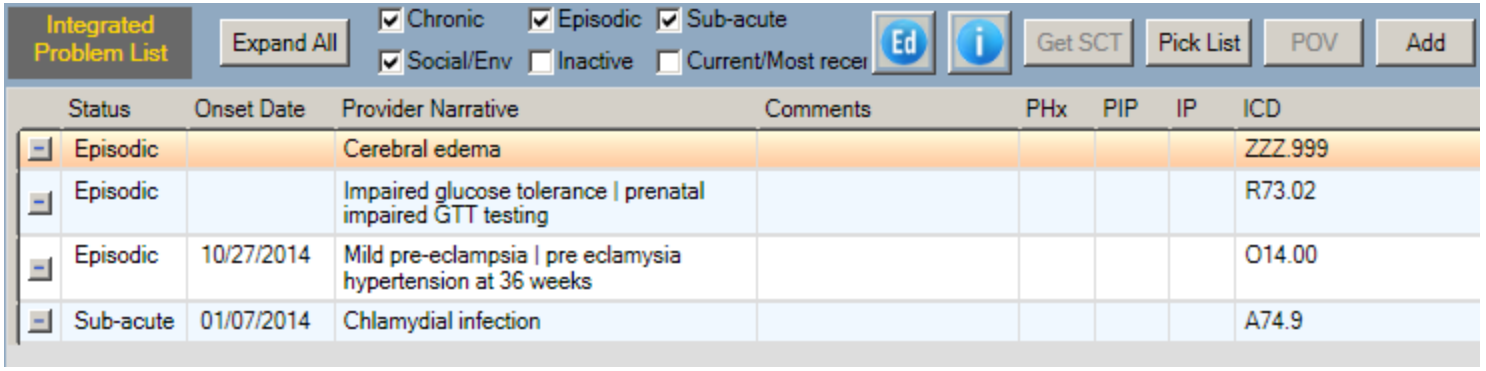
SNOMED Term	ICD-9	Storage of Mapped Codes
Sunburn of second degree	Sunburn of second degree 692.76	1:1 This is a 1:1 match so will store in the POV when selected.
Diabetic Nephropathy	Diabetes with renal manifestations, type II or unspecified type, not stated as uncontrolled 250.00 Nephritis and nephropathy, not specified as acute or chronic, in diseases classified elsewhere 583.81	1:1: This is a 1:1 match so will store both ICD-9 codes. When problem is selected as POV, 2 POVs will store.
Ganglion of the wrist	Ganglion of joint 727.41	Narrow to Broad: Closest ICD-9 code is less specific than the SNOMED. This will store in POV when selected.

When there is no mapping available OR when the closest ICD-9 code is more specific than the SNOMED, then the system will assign .9999 un-coded. The code assigned by coders will depend on the SNOMED term selected and the remainder of the visit documentation.

SNOMED CT® Related Maps Used in RPMS

SNOMED CT® to ICD-10 – *Rule-based map developed and maintained by IHTSDO with WHO, validated by AHIMA and released in U.S. by NLM*

- ***Use in EHR*** – for SNOMED problems and POVs on or after the ICD-10 compliance date



SNOMED to ICD-10 Mapping Examples

SNOMED Term	ICD-10	Comment
Essential Hypertension	Essential hypertension I10	"Always true" rule: This is 1:1 match. Will store in POV when selected.
Type II diabetes mellitus uncontrolled	Type 2 diabetes mellitus with hyperglycemia E11.65	"Always true" rule: This is 1:1 match. Will store in POV when selected. Also contains the following map advice which coders can see – "Use additional code to identify any insulin use (Z79.4)"
Cerebral Edema	Cannot be automatically mapped	This requires more information to code. Passes map advice which can be seen by coders as hover on problem list, and in PCC data entry.

- *"Always true" map rule is 1:n mapping. SNOMEDs assigned any other map rules require additional data to determine codes and the system will assign ZZZ.999 un-coded diagnosis.*
- *All other map rule types store ZZZ.999 "uncoded" diagnoses; however, may contain map advice.*
- *Any "map advice" from the SNOMED to assist coders in selecting ICD-10 code is passed for viewing in EHR and PCC data entry.*

Map Advice

- Part of the SNOMED to ICD-10 mapping tool released by NLM
- Advice is specific for selected SNOMED code and part of the information that is retrieved from the SNOMED database
- Provides coders with a target code (and secondary codes when applicable) and tips to help them assign ICD-10 based on the encounter documentation
- Visible via hover on the IPL in the EHR and in PCC Data Entry for each SNOMED concept
- Can help coding staff educate providers around required documentation for ICD-10

Example of Map Advice for SNOMED Term “Cerebral Edema”

ICD: ZZZ.999

Rule #1 Target Code: G93.6
ALWAYS G93.6

Rule #2 Target Code: P11.0
IF CEREBRAL EDEMA DUE TO BIRTH INJURY CHOOSE P11.0
MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT

Rule #3 Target Code: S01.80X?
IF TRAUMATIC CEREBRAL EDEMA WITH OPEN INTRACRANIAL WOUND CHOOSE S01.80X?
EPISODE OF CARE INFORMATION NEEDED
POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE
MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT

Rule #4 Target Code: S06.1X0?
IF TRAUMATIC CEREBRAL EDEMA CHOOSE S06.1X0?
CONSIDER ADDITIONAL CODE TO IDENTIFY SPECIFIC CONDITION OR DISEASE
EPISODE OF CARE INFORMATION NEEDED
POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE
MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT

Rule #5 Target Code: S06.1X0?
IF TRAUMATIC CEREBRAL EDEMA WITH OPEN INTRACRANIAL WOUND CHOOSE S06.1X0?
EPISODE OF CARE INFORMATION NEEDED
POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE
MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT

Rule #6 Target Code: S06.1X0?
IF TRAUMATIC CEREBRAL EDEMA WITHOUT OPEN INTRACRANIAL WOUND CHOOSE S06.1X0?
EPISODE OF CARE INFORMATION NEEDED
POSSIBLE REQUIREMENT FOR AN EXTERNAL CAUSE CODE
MAP OF SOURCE CONCEPT IS CONTEXT DEPENDENT
No mapping advice available

SNOMED CT® vs. ICD
For Clinician Documentation

SNOMED	ICD
Better clinical coverage • 100,000 terms in clinical findings hierarchy	Statistical focus, less common diseases lumped together • ICD-9-CM 14,000 terms • ICD-10-CM 68,000 terms
Used directly by clinicians during process of care	Used by coding professionals after episode of care
More clinician friendly language	Not all terms are clinician friendly and some have little clinical relevance
Terms reflecting any level of granularity appropriate for situation	• Can include awkward terminology due to embedded coding guidelines • Presumes knowledge of coding rules • Dictates level of granularity (NOS, NEC)
Flexible data retrieval organized in multiple hierarchies	

Fung, KW. NLM, NIH. 2010. How SNOMED CT can help in the ICD-10-CM transition. AHIMA.

Examples

Condition	ICD-9	ICD-10	SNOMED CT®
Asperger's Disorder	Other specified pervasive developmental disorders 299.8	Asperger's disorder F84.5	Asperger's Disorder 23560001
Apert Syndrome	Acrocephalosyndactyly 755.55	Congenital malformation syndromes predominantly affecting facial appearance Q87.0	Apert Syndrome 205258009
Metabolic acidosis	Acidosis 276.2	Acidosis 276.2	Metabolic acidosis 59455009

Source: AHIMA

INTEGRATED PROBLEM LIST - TIPS FOR A SMOOTH TRANSITION

What is a “Problem List”?

IHS problem list historically reflected chronic problems. POVs reflected issues addressed during each encounter.

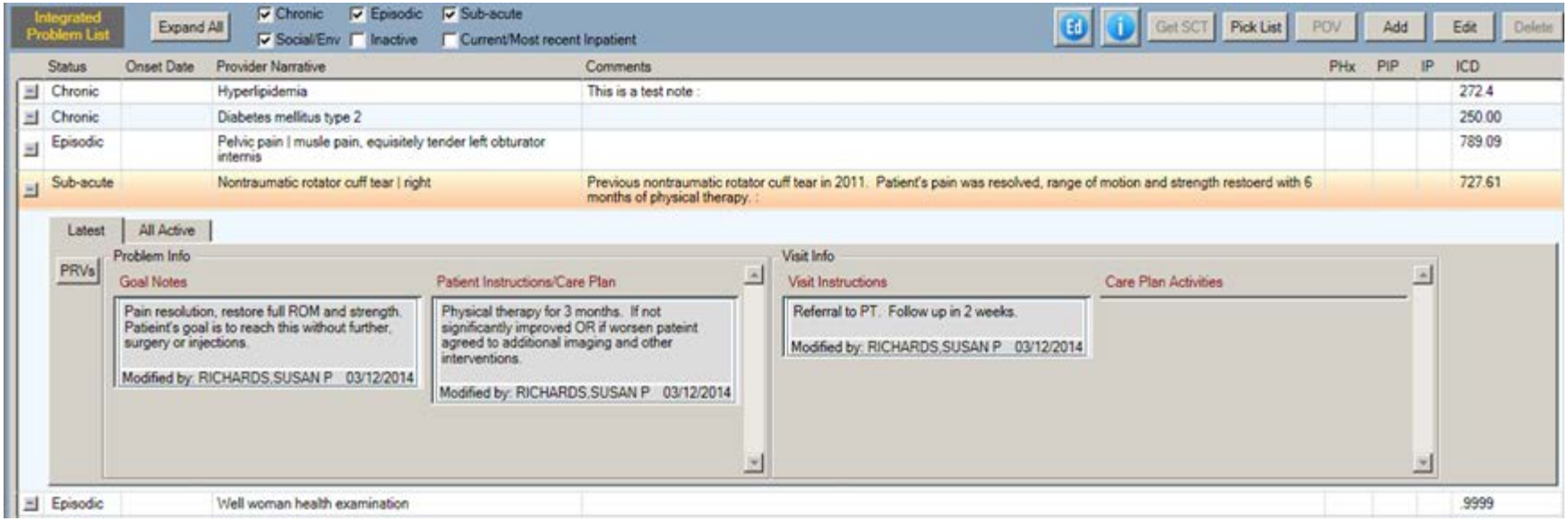
2014 Certification shifted this approach. “Problem List” simply describes problems that have been documented for the patient. This includes essentially all diagnoses (chronic, episodic, and problems requiring follow-up).

As a result:
IPL will represent all problems that have been documented, including episodic and administrative, and also incorporates care planning documentation.

Integrated Problem List (IPL): New Features

- Non-redundant SNOMED-based list
  - SNOMED maps to ICD or assigns un-coded in background
- POV selection from IPL
- Used for ALL problems– chronic, episodic, sub-acute, social/environmental
- Used by ALL clinicians who document care
- Nationally vetted and released Pick Lists
- Care Planning Documentation

Integrated Problem List Display



Data Migration to IPL

All data will be retained when moving data from the Problem List to the new Integrated Problem List.

The following data will change/move:

- Notes will be retained but are now called “Comments”
- Provider narratives will have leading * until the problem is updated with a SNOMED term

  ***Hypertension**

  ***Osteoarthritis right knee**
- Once problem are updated they will be displayed in SNOMED term|provider text format

  Essential Hypertension|

  Osteoarthritis of knee| right

Statuses will be migrated to new status (see following table)

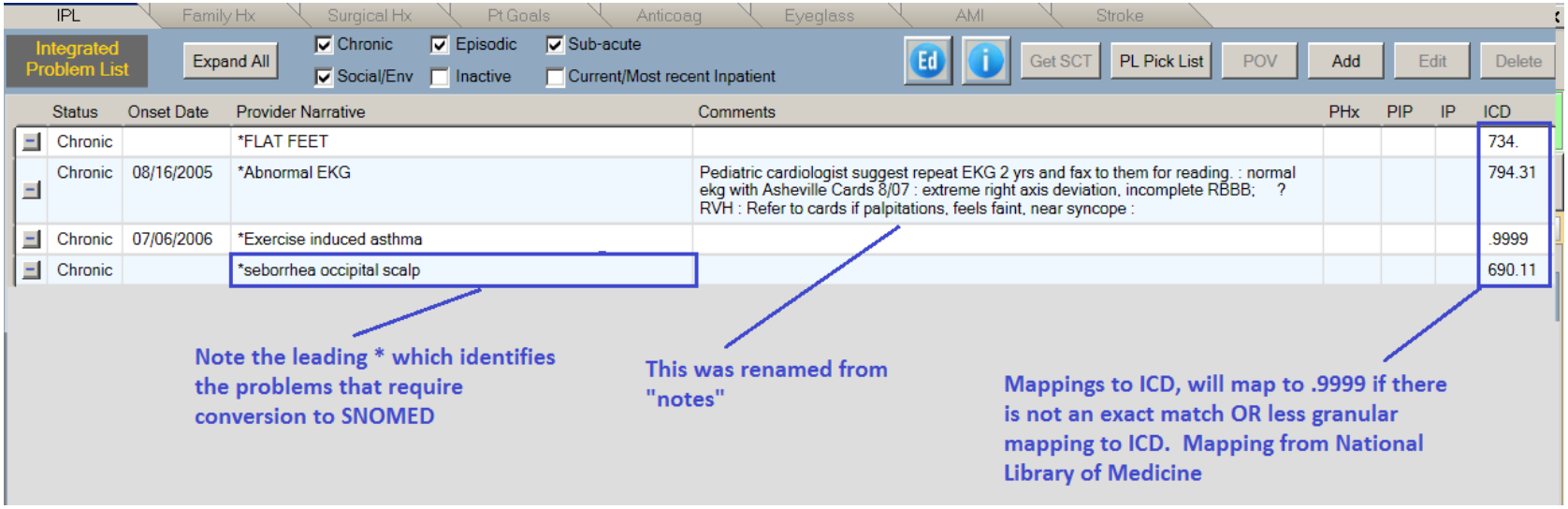
Problem Statuses

Current (EHRp12)	Migrate to (EHRp13)	Examples
Active	Chronic	Diabetes, Hypertension, Asthma
Personal History	Inactive	Inactive problem of Chicken Pox
Inactive	Inactive	

New Statuses	Examples
Sub-acute	Breast mass, ankle injury – something you are working up or that needs short-term follow up
Episodic	Cold, female UTI – disposition straightforward “follow up PRN or if not improving”
Social/Environmental	Homeless, lack of running water, alcoholic in home

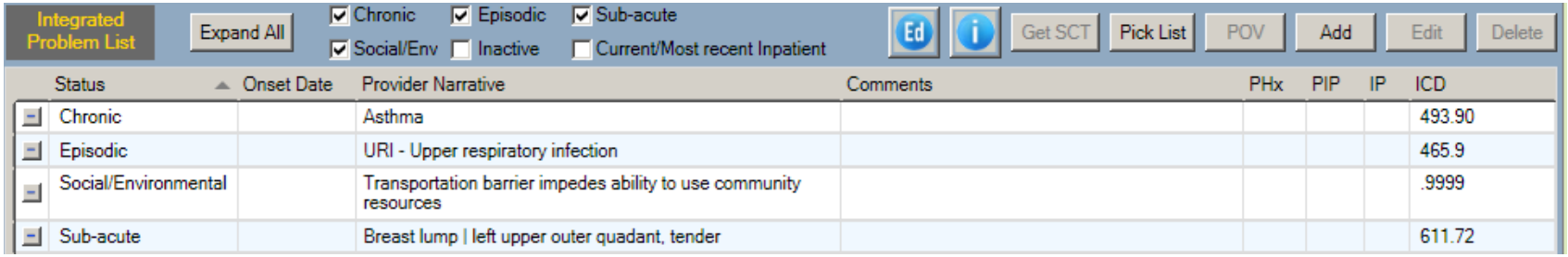
IPL Main Screen

Problem list prior to conversion to SNOMED



IPL Main Screen (cont.)

All problems after converting to SNOMED terms



Status	Onset Date	Provider Narrative	Comments	PHx	PIP	IP	ICD
Chronic		Asthma					493.90
Episodic		URI - Upper respiratory infection					465.9
Social/Environmental		Transportation barrier impedes ability to use community resources					.9999
Sub-acute		Breast lump | left upper outer quadant, tender					611.72

Essentials for IPL

The IPL has a wide range of functionality. Most of the functionality is optional for clinicians, however, enabling staged implementation.

Required *entry is not overwhelming, so we will begin with the* ***three required steps*** *essential in the early transition period.*

Easing the Stress of the First Days

Scenario:

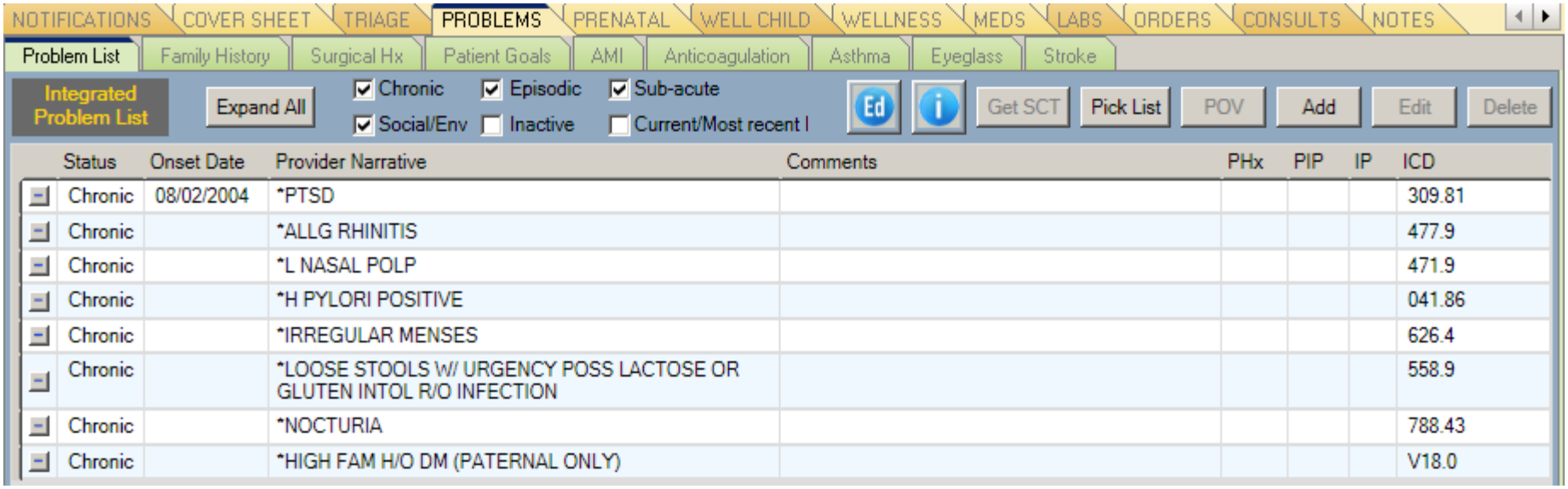
It is your first day of clinic after EHRp13 was installed. You have fewer patients scheduled in anticipation of the software changes.

Your first patient is here for a follow up and has a sore throat and cold symptoms.

Update Problems

Update the problems you are addressing with the patient today.

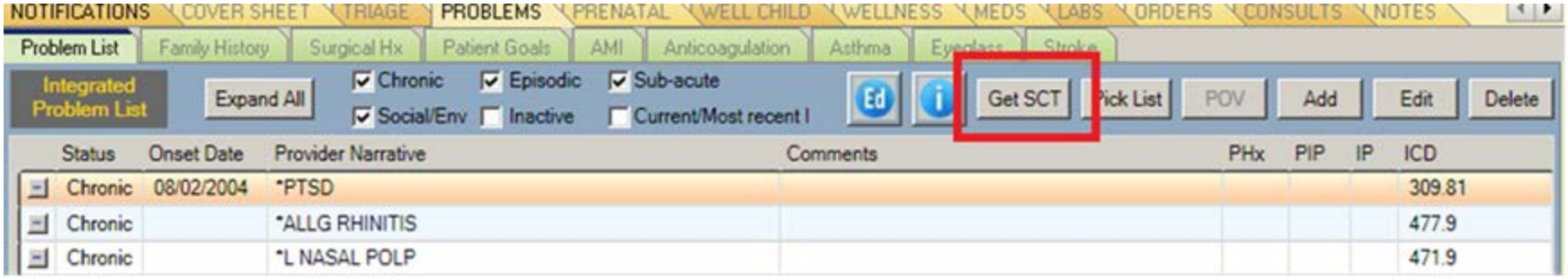
- Note that any problem with leading * in provider narrative needs update to SNOMED prior to use.



Step 1:
Update Problems to Address Today

This is why cleaning up problem lists and having data entry assist in coding un-coded problems is helpful.

1. Highlight problem for update and click **Get SCT**.

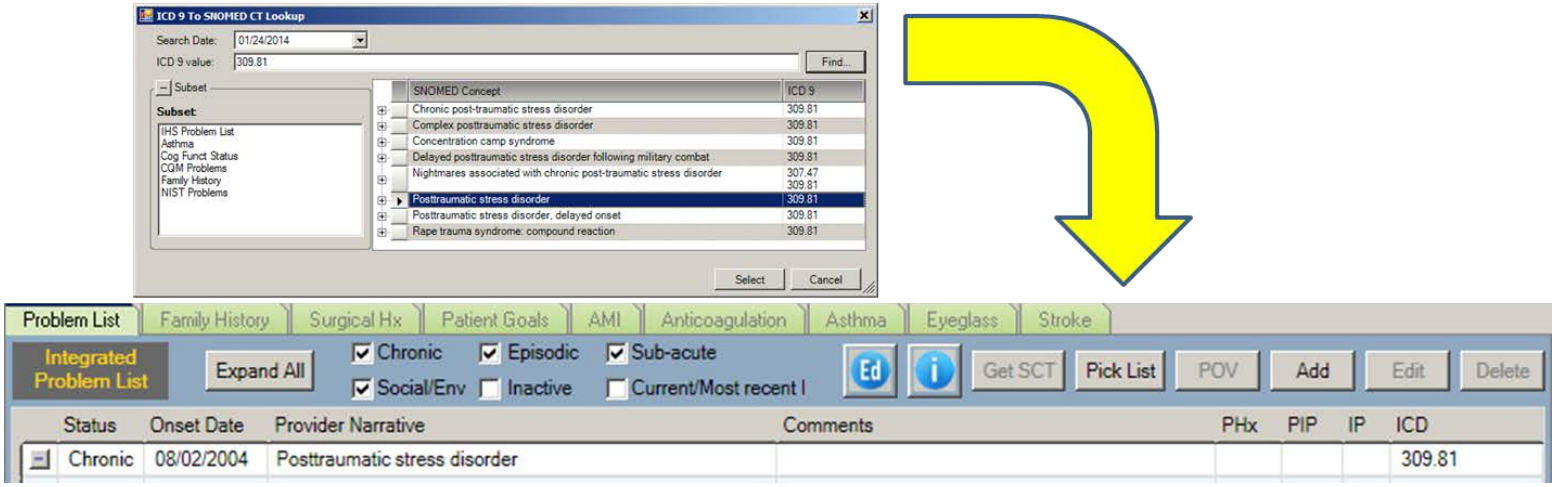


Step 1:
Update Problems to Address Today (cont.)

For most of your ICD coded problems, this will return a selection of SNOMED terms to choose.

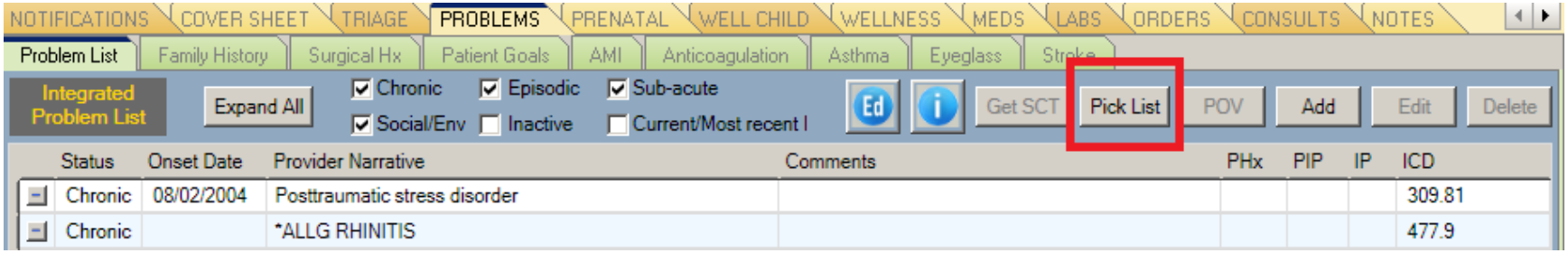
2. Highlight choice and click **Select** to update the entry.

If you have un-coded entries or codes, do not reverse map. You may use Pick List or SNOMED search to update the problem.



Step 2:
Add Any New Problems Addressed Today

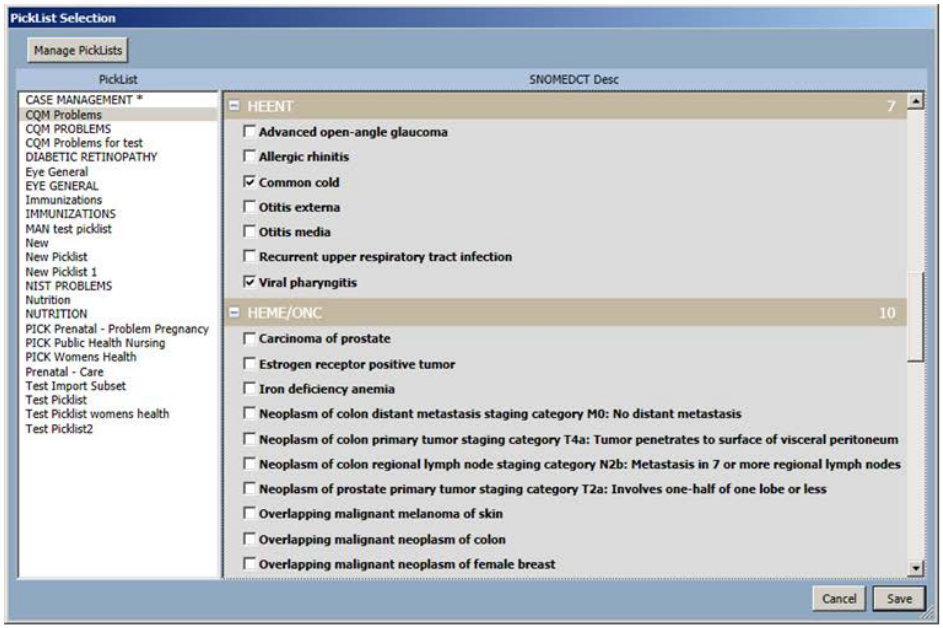
3. Click **Pick List**.



Step 2:

Add Any New Problems Addressed Today (cont.)

4. Select problem(s) and **Save**.

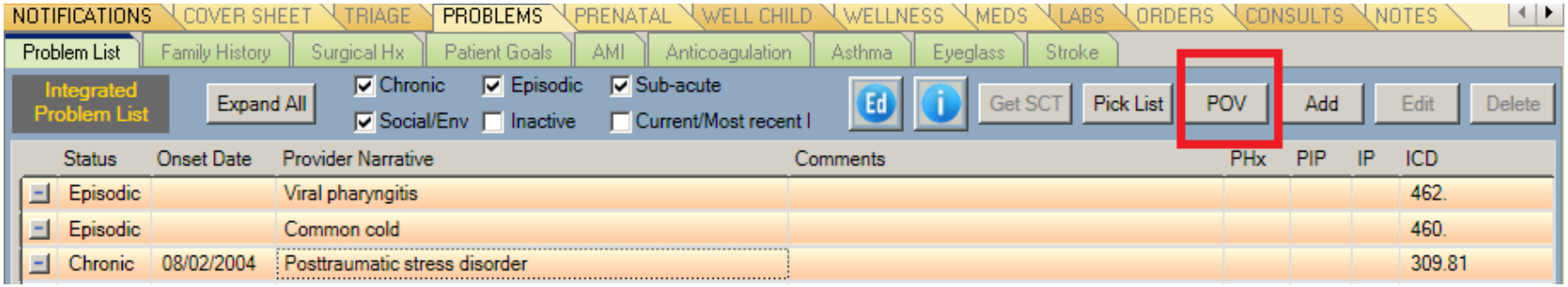


At this point, the problems you need to select as POV and use for Clinical Indications when placing orders are updated.

Only problems that have been updated to SNOMED are selectable on the Clinical Indication dropdown.

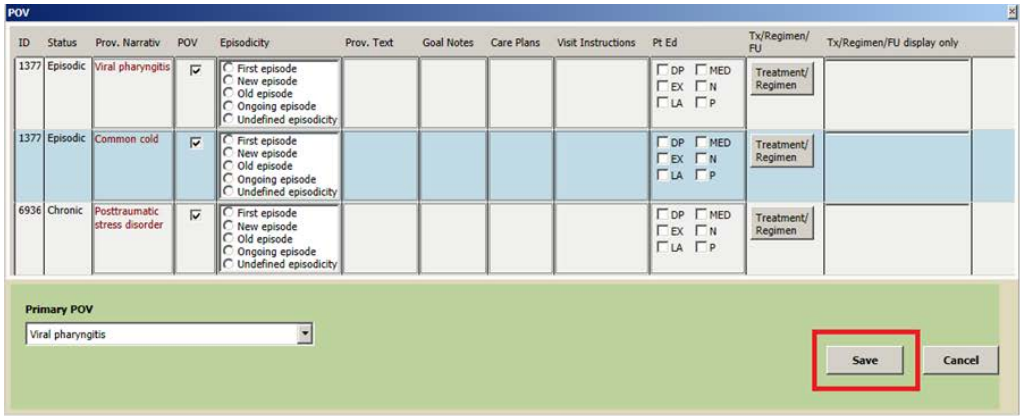
Step 3:
Select POV

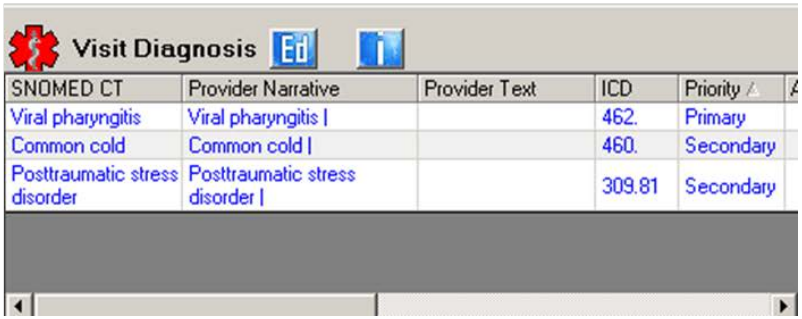
5. Highlight the problems you managed today.
6. Click the **POV** button.



Step 3:
Select POV (cont.)

7. Click **Save** to set as POVs.





Review of the Few Required Steps

For each existing problem you will address today:

1. Highlight problem for update and click **Get SCT**. If un-coded or if does not return a SNOMED choice, you may use a Pick List or Search for a SNOMED term.
2. Highlight choice and click **Select** to update entry.

For each new issue you will address today:

3. Click **Pick List**.
4. Select problem(s) and save.

Enter Orders if needed.

Select POVs:

5. Highlight the problems you managed today.
6. Click the **POV** button.
7. Save.

Add Problem

Adding a problem

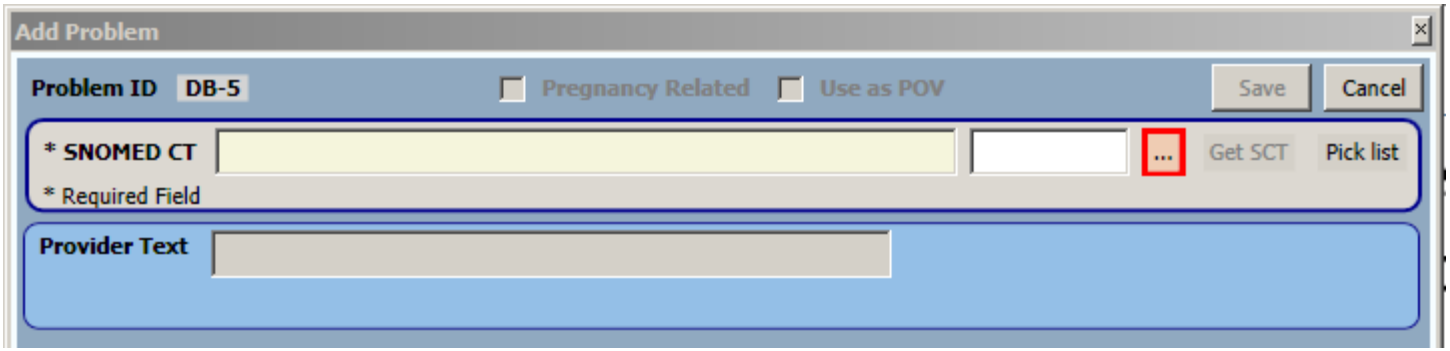
Only two fields are required to enter a problem:

- SNOMED CT
- Status – defaults to “episodic” unless it is defaulted differently in pick list

All other fields are optional.

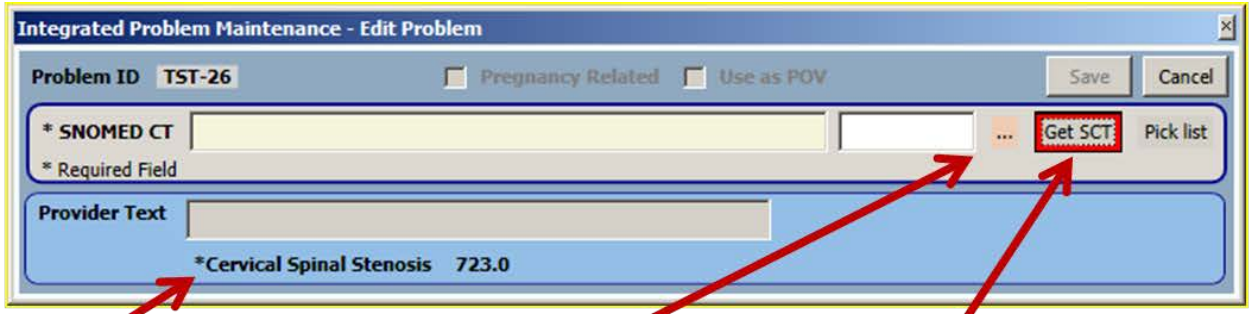
Add Problem (cont.)

- You may select from pick list by clicking **Pick list**.
- You may search for SNOMED by entering text and clicking ellipsis (**…**).



Edit Problem

- Edit prompts user for SNOMED if the problem has not yet been updated.
  - You have an additional option of using “Get SCT” option if the problem has an ICD-9 code.



You will see the existing Provider Narrative and ICD9.

Search SNOMED

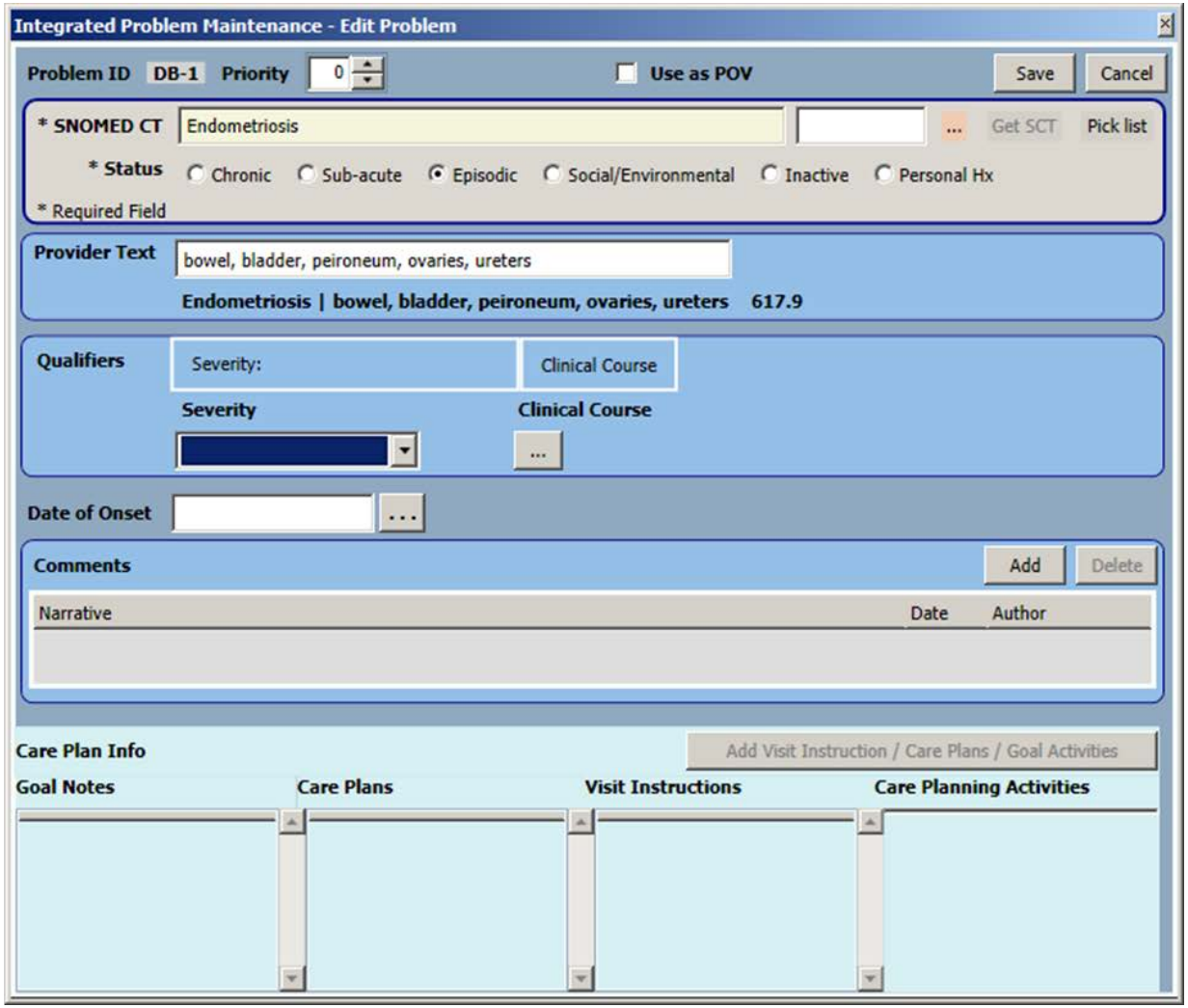
ICD-9 to SNOMED reverse mapping tool

Add/Edit Problem – Optional Fields

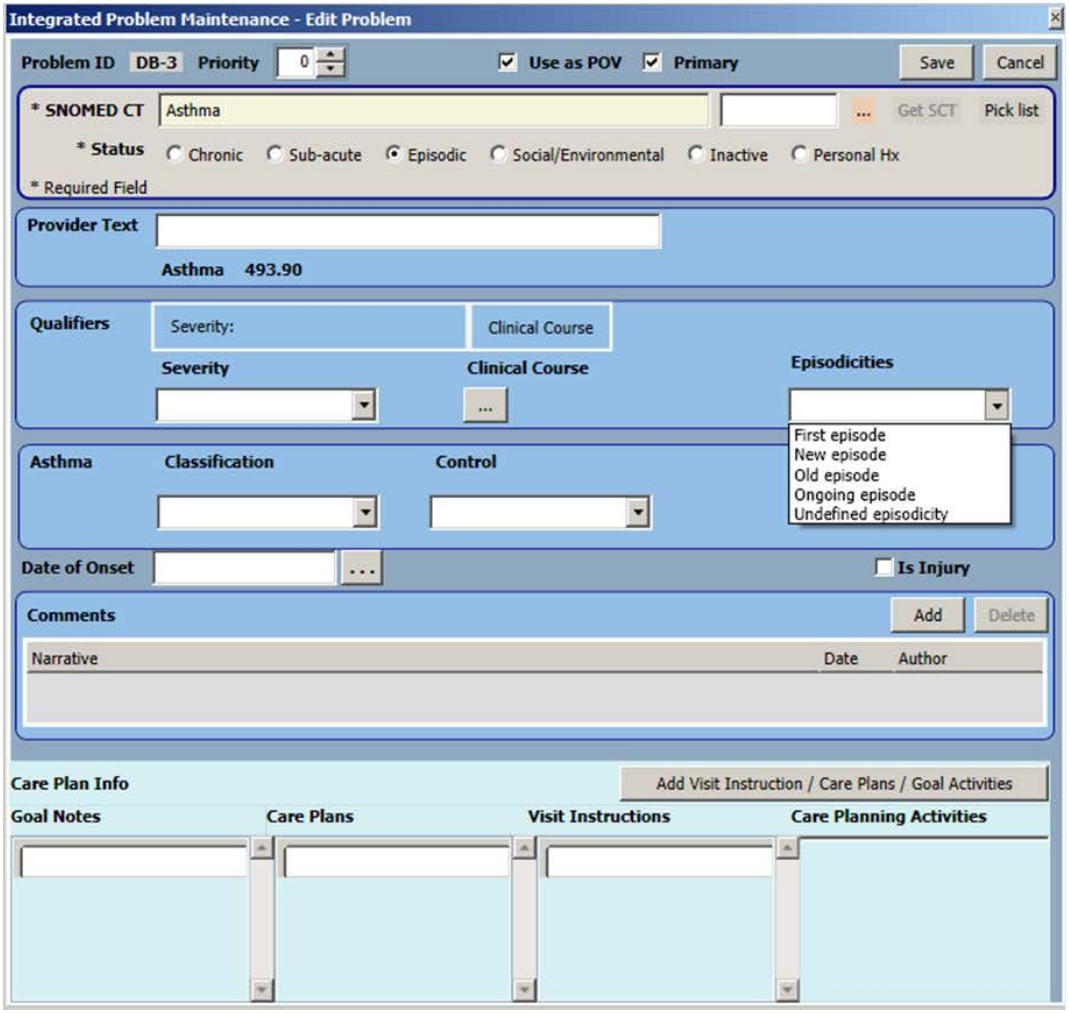
Only SNOMED Term and Status are required fields.

These optional fields may be used to add information.

Care planning is only editable if selected as POV.



Add/Edit Problem – Optional Fields (cont.)



Optional, encounter related

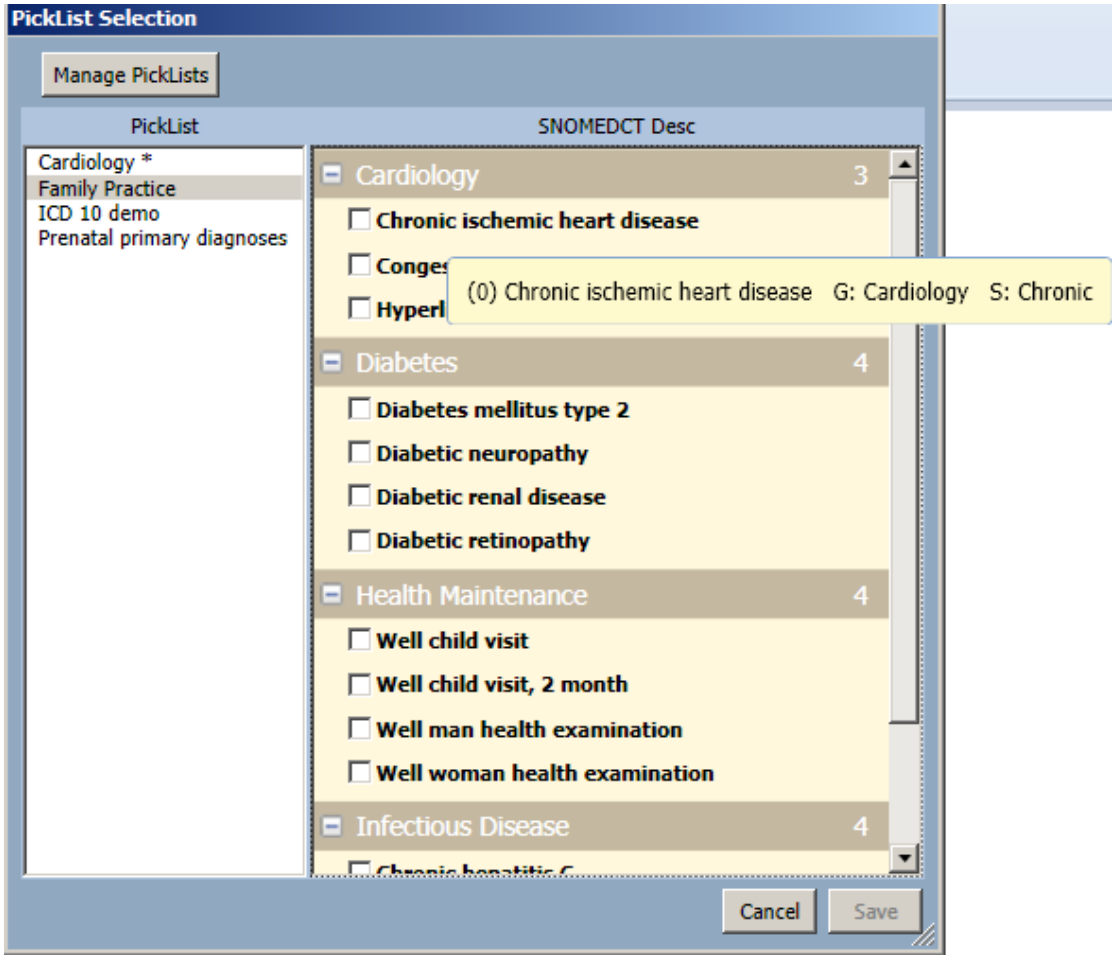
Asthma prompts only exposed for Asthma problems

Care planning now editable

Search Tools - Pick Lists

- Over 50 vetted SNOMED pick lists are available for import.
- Pick lists may be used as imported or customized by CAC.
- Available customizations:
  - Default status
  - Group similar pick list items together for display
  - Add/Delete terms

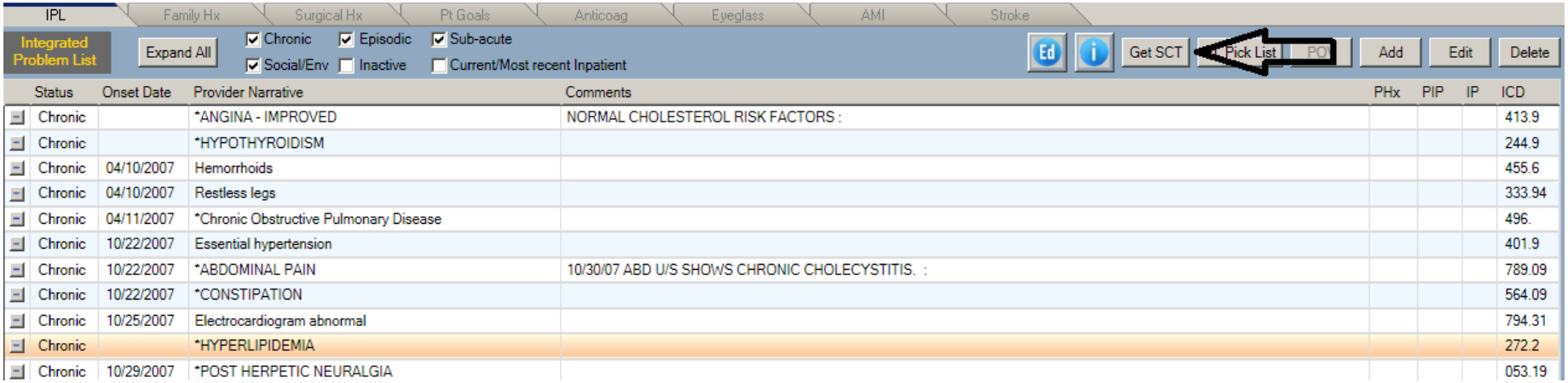
Pick List Example



Search Tools:
"Get SCT" Reverse Mapping Tool

Allows for quick conversion from ICD9-encoded problem to SNOMED.

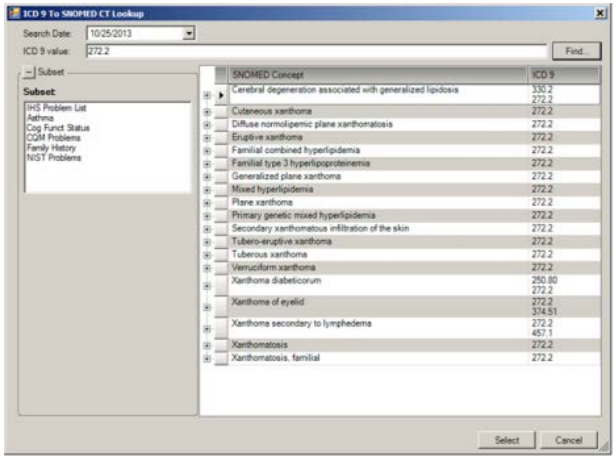
- Highlight problem and click **Get SCT.**

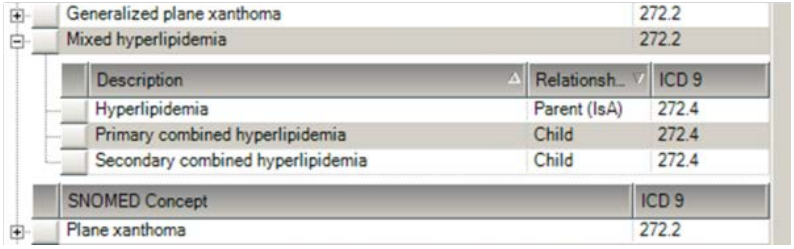


Status	Onset Date	Provider Narrative	Comments	PHx	PIP	IP	ICD
Chronic		*ANGINA - IMPROVED	NORMAL CHOLESTEROL RISK FACTORS :				413.9
Chronic		*HYPOTHYROIDISM					244.9
Chronic	04/10/2007	Hemorrhoids					455.6
Chronic	04/10/2007	Restless legs					333.94
Chronic	04/11/2007	*Chronic Obstructive Pulmonary Disease					496.
Chronic	10/22/2007	Essential hypertension					401.9
Chronic	10/22/2007	*ABDOMINAL PAIN	10/30/07 ABD U/S SHOWS CHRONIC CHOLECYSTITIS. :				789.09
Chronic	10/22/2007	*CONSTIPATION					564.09
Chronic	10/25/2007	Electrocardiogram abnormal					794.31
Chronic		*HYPERLIPIDEMIA					272.2
Chronic	10/29/2007	*POST HERPETIC NEURALGIA					053.19

Return of “Get SCT”

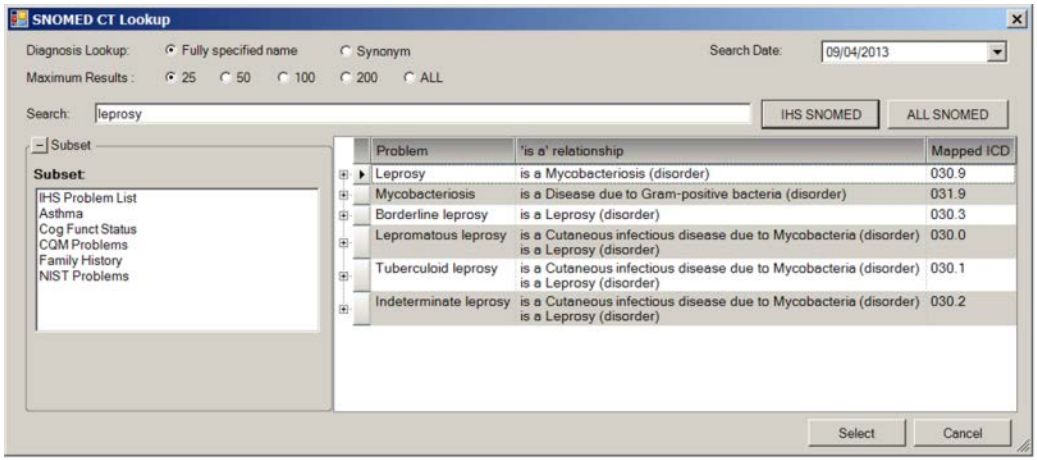
Returns ICD9 to SNOMED matches. Also returns the parent (less granular) and children (more granular) of the matches from which clinicians can choose. ***This does not work for un-coded diagnoses, which is why problem list cleanup is so important . . .***

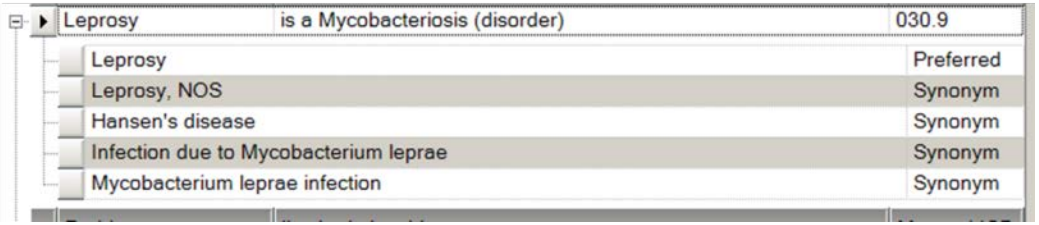




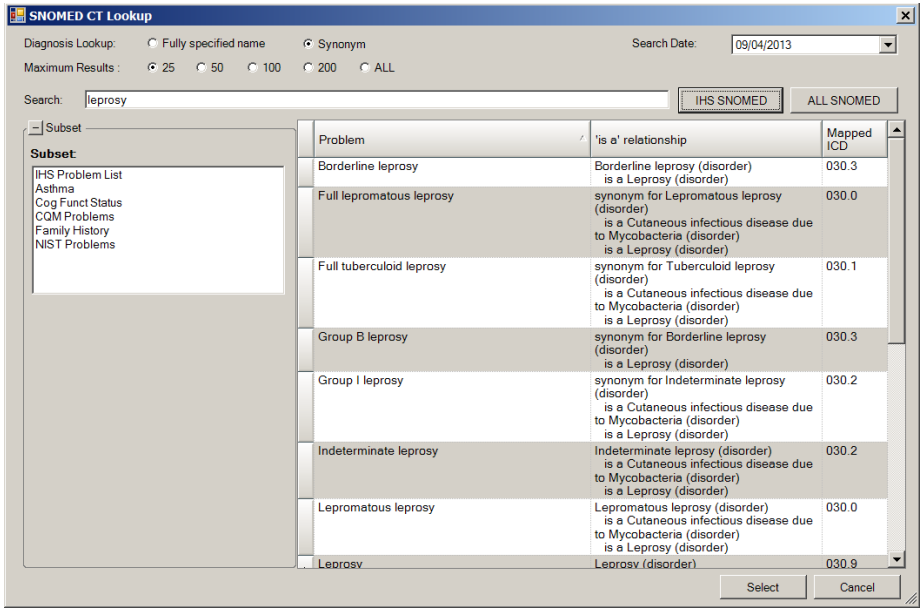
SNOMED Lookup

- If you select the Fully Specified Name, it will store the preferred term. Clicking the plus sign (+) allows the use to view synonyms from which to choose.





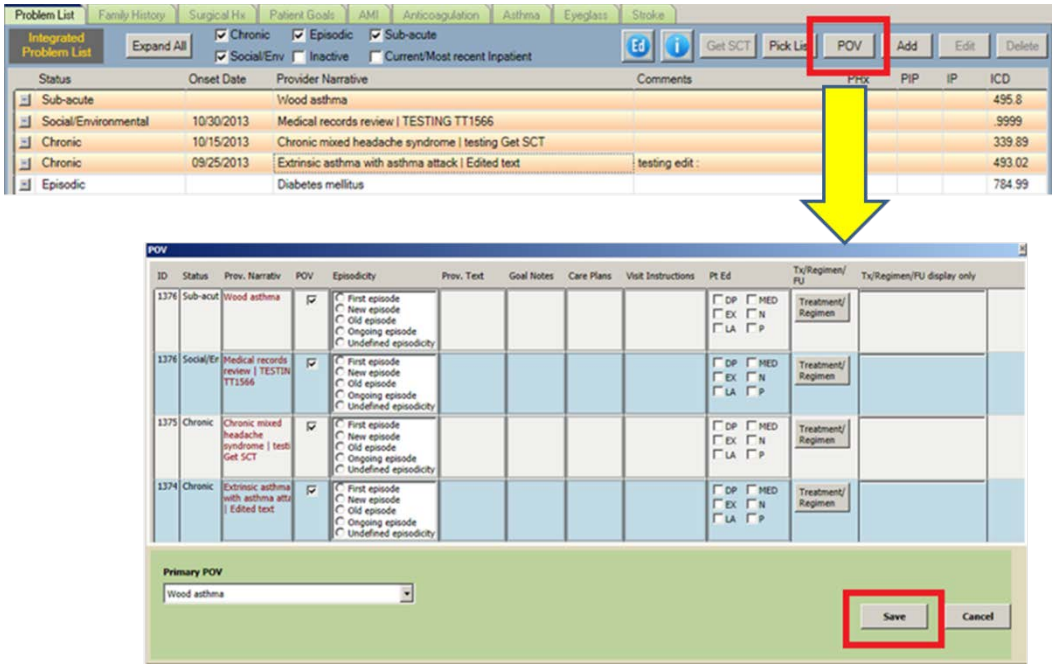
SNOMED Lookup by Synonym



- Option to search/display by synonym – also displays the fully specified name and “is a ”relationship.

POV Selection Tool

- Allows for quick selection of one or more SNOMED encoded problems
- Highlight >>**POV** button



POV Selection Tool (cont.)

From this tool, you may simply click save and store items as POV or use any optional fields:

- Add Episodicity
- Enter Provider Text specific to this encounter (does not store back to problem)
- Goal Notes
- Care Plan notes
- Visit Instructions
- Patient Education
- Treatment/Regimen terms
- Change primary POV
- Last column is display only

Changes for Data Entry/Coding Staff

- Much of the process is unchanged
- No longer need to code un-coded problems
- Will still validate and assign appropriate POV ICD codes
- Provider narrative will be more consistent:
  - Format: SNOMED term|provider text
  - Example: Essential Hypertension|uncontrolled

IPL – Projected Progression of Usage

Timeframe	Feature	Rationale
Phase 1 – transition and updating IPL	Get SCT reverse mapping and pick lists	Updating IPL
Phase 1 – transition and updating IPL	POV dialog	Quick way to add POVs

Phase 1: “Surviving the tsunami of software”

- These quick tools allow clinicians to get through their clinical encounters with relative ease.

IPL – Projected Progression of Usage (cont.)

Timeframe	Feature	Rationale
Phase 2 – getting comfortable	Visit instructions on POV dialog	Quick way to add visit instructions. Enter once, display in PHR, print on CS, and drop into TIU note.
Phase 2 – getting comfortable	Patient education on POV dialog	Quick way to add Pt Ed
Phase 3 – optimizing documentation	Goal notes, care plan notes	Therapeutic goals and plans of care from various team members enhances communication. Displays on Clinical Summary, PHR.
Phase 3 – optimizing documentation	Treatment/regimen	Can enhance documentation of follow-up instructions, case management, protocol driven care, and nursing care

*** Visit instructions, goals, and care planning notes display on the Clinical Summary and Transition of Care Summary and can drop into encounter documentation.*

It Takes a Village to Migrate to IPL

Recommend leveraging ***all clinicians*** to participate as they encounter opportunities to update in their workflow:

- Nursing - Example: ordering standing order labs can update problems prior to selecting as Clinical Indication.
- Pharmacy - Example: update problems and select as POVs for medication refills.

It Takes a Village to Migrate to IPL (cont.)

Who will assist in Problem List migration?

- It is NOT appropriate to engage non-clinician staff (clerks, coders, medical records) in the migration of the problem lists from ICD-9 to SNOMED.

Summary

- ***Clean up problems now.***
- ***Plan approach to problem list migration.***
- No data is lost in the migration to SNOMED.
- Problems can be updated and selected as POVs in three steps.
- Only 2 fields are mandatory for new problems .
- Transition tools: "Get SCT" reverse mapper and Pick Lists.
- SNOMED with mapping tools stabilizes front end eases the impact to clinicians with transition to ICD-10.
- Minimal change for Coding. Coders will have have more controlled, cleaner narratives from which to code.
- Map advice will aid coders with the ICD-10 transition.
- New TIU objects allow data entered on IPL to drop into encounter notes [requires CAC configuration].

Resources

Care Planning information at end of slide set for your review.

SNOMED issues – select “SNOMED (DTS) for application

http://www.ihs.gov/rpms/index.cfm?module=Feedback

Enhancement requests – select “Electronic Health Record (EHR)” for application

http://www.ihs.gov/rpms/index.cfm?module=Feedback

ICD 10 Documentation examples

http://www.crozerkeystone.org/healthcare-professionals/icd-10-update/icd-10-documentation/

Questions?

It won't make EHR work any better, but if it makes you feel good "GO FOR IT!"

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Even good change is stressful...

SUPPLEMENTAL INFO ON CARE PLANNING

Care Planning

Optional documentation

- Goal notes
- Care Plan notes
- Visit Instructions
- Patient Education
- Treatment/Regimen/Follow up

Care Planning (cont.)

May be accessed:

- From Add/Edit Problem dialog
- From POV selection dialog

Content populated by:

- Free text
- Site developed templates (like used in note)

Documentation can be dropped into your encounter notes using TIU objects.

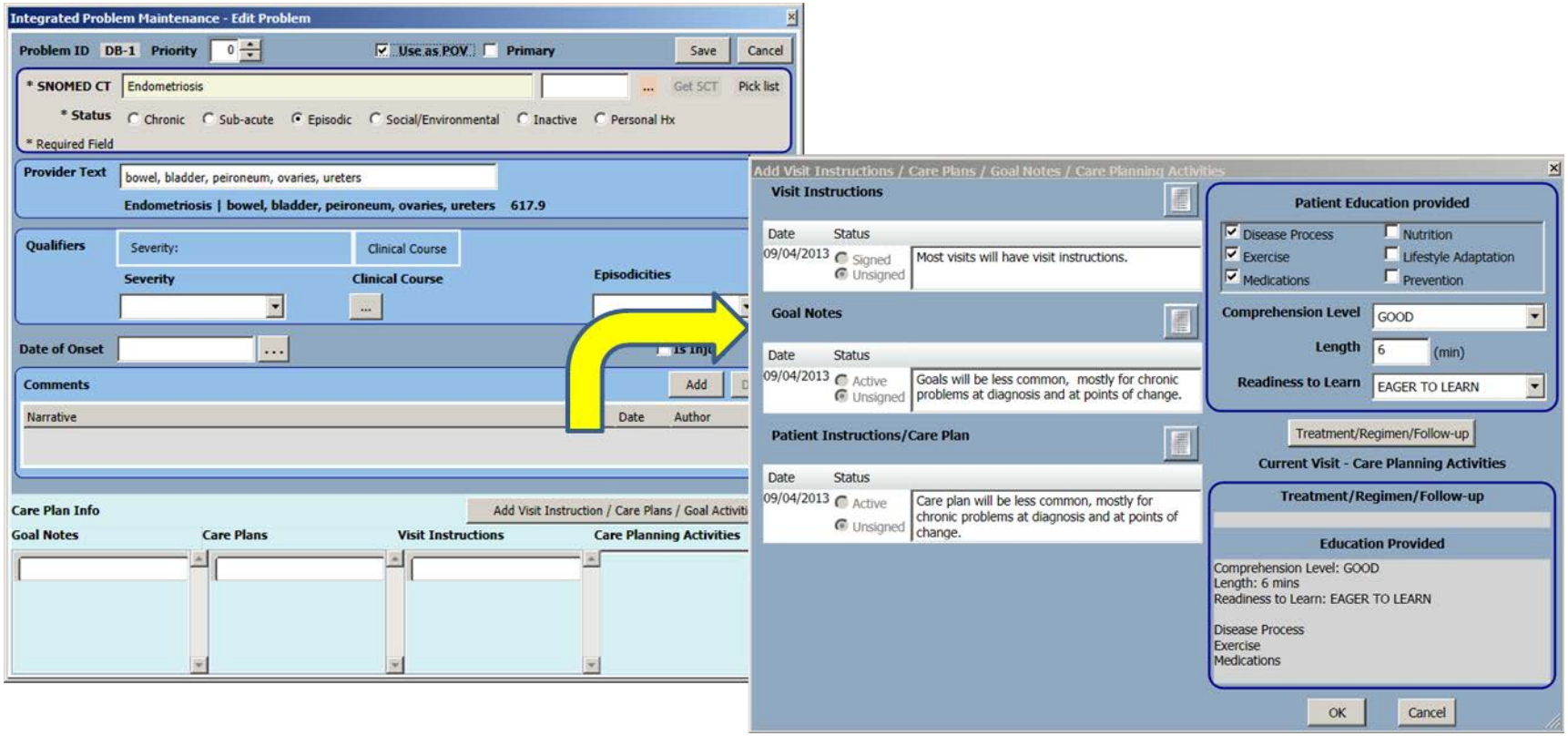
Care Planning (more)

Field	Common Usage
Visit Instructions	Used for any problems managed during visit. ***Example***: A1C elevated. Increase metformin. Eliminate soda and juice, opt for water. Increase walks to 30 min/day. Refer to diabetic education.
Goal Note	Entered when diagnose chronic, subacute, or social environmental problem and updated periodically. ***Example***: A1C less than (<) 7
Care Plan Note	Entered when diagnose chronic, subacute or social/environmental problem. ***Example***: A1C every 3 months until reach goal, then every 6 months. Yearly dilated eye exam. Lipid, nephropathy screening yearly (etc.).

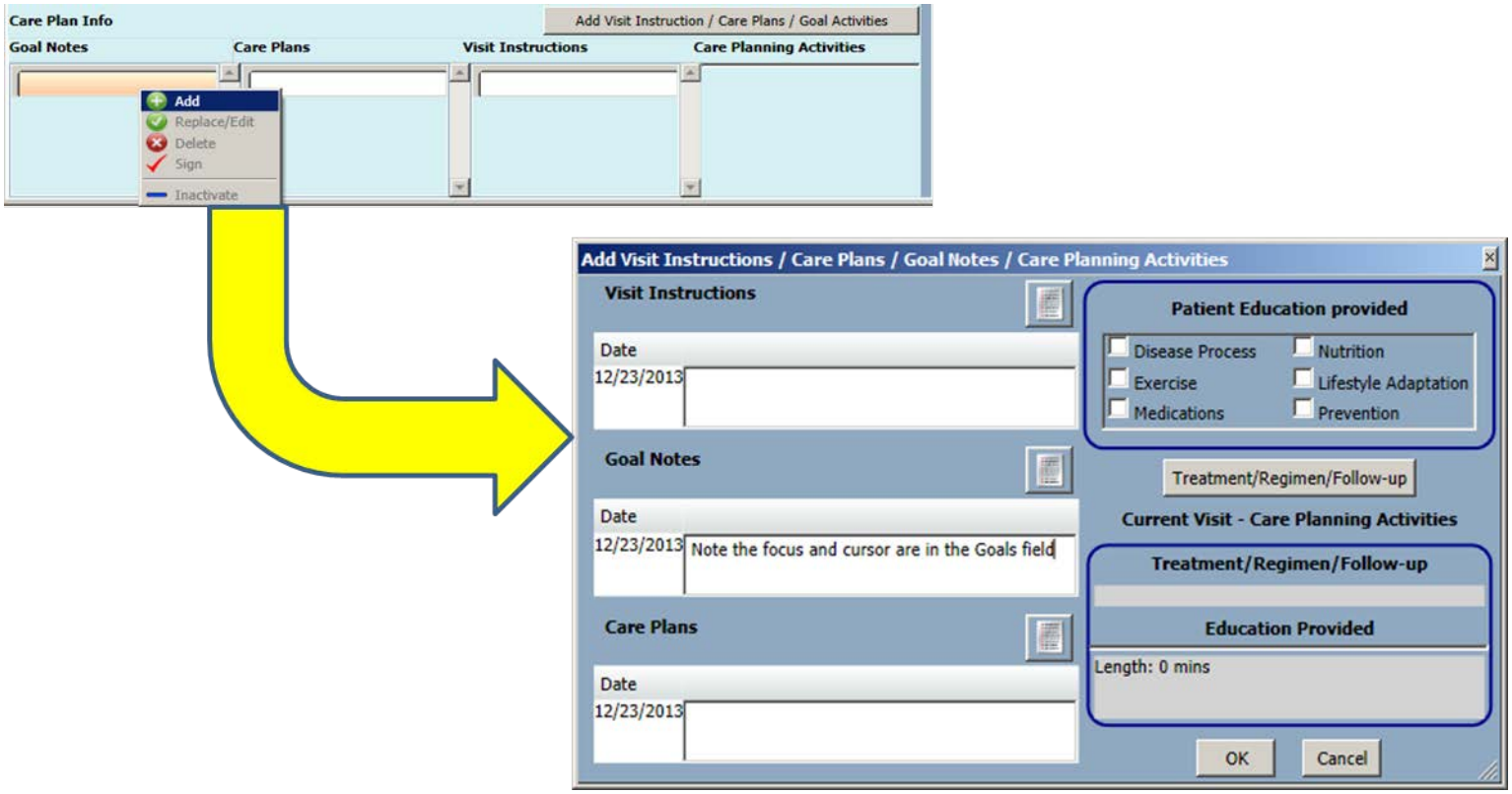
Care Planning

Field	Common Usage
Treatment/Regimen/ Follow up	Interventions, treatments, follow up that may be selected ***Examples***: Follow up in 3 weeks, treatment adjusted per protocol
Patient Education	May store subtopics for problem: • Disease Process • Exercise • Lifestyle Adaptation • Medications • Nutrition • Prevention

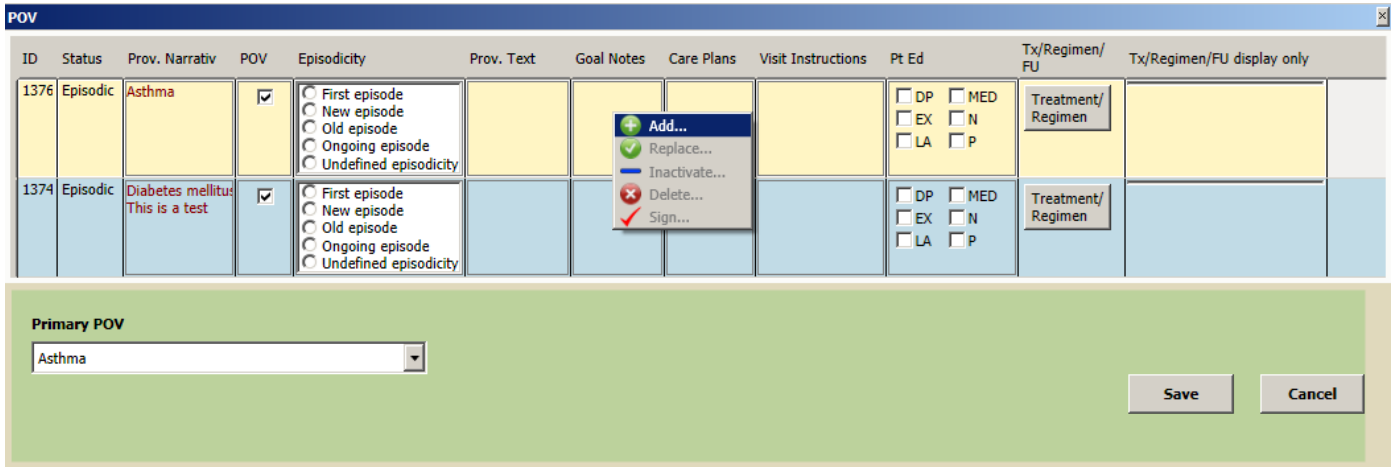
Care Planning
- From Add/Edit Dialog

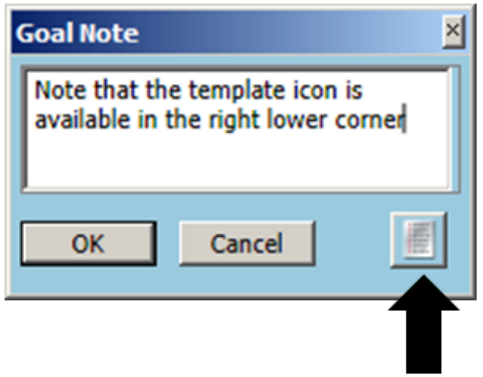


Care Planning
- From Add/Edit Dialog (cont.)



Care Planning
- From POV Dialog

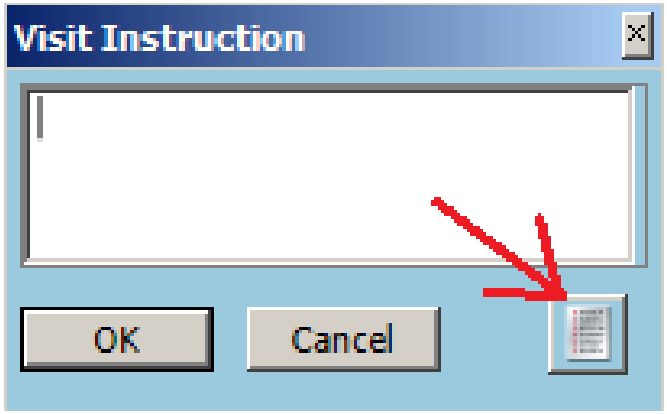




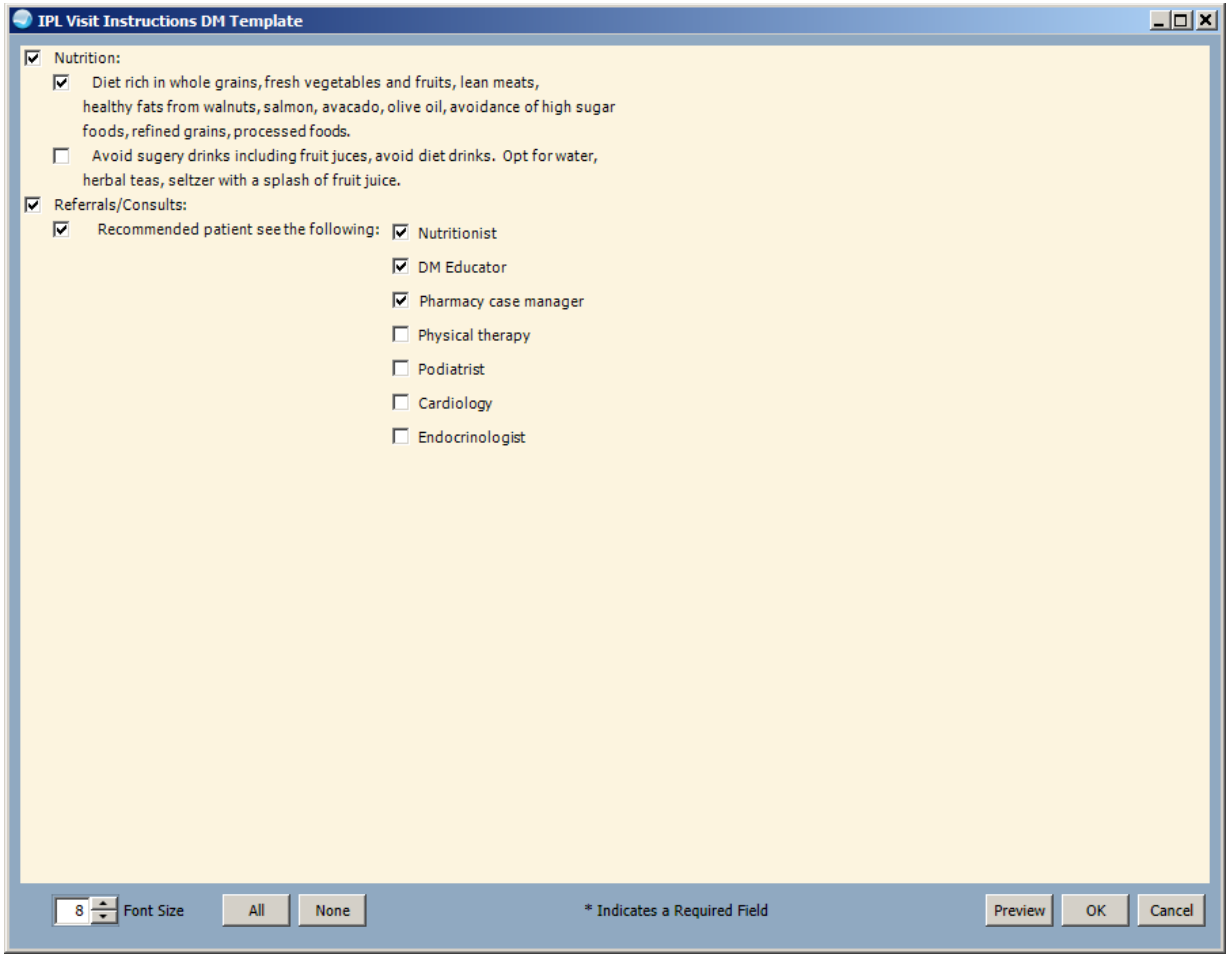
Click here for templates

Templates for Goals, Care Planning, and Visit Instructions

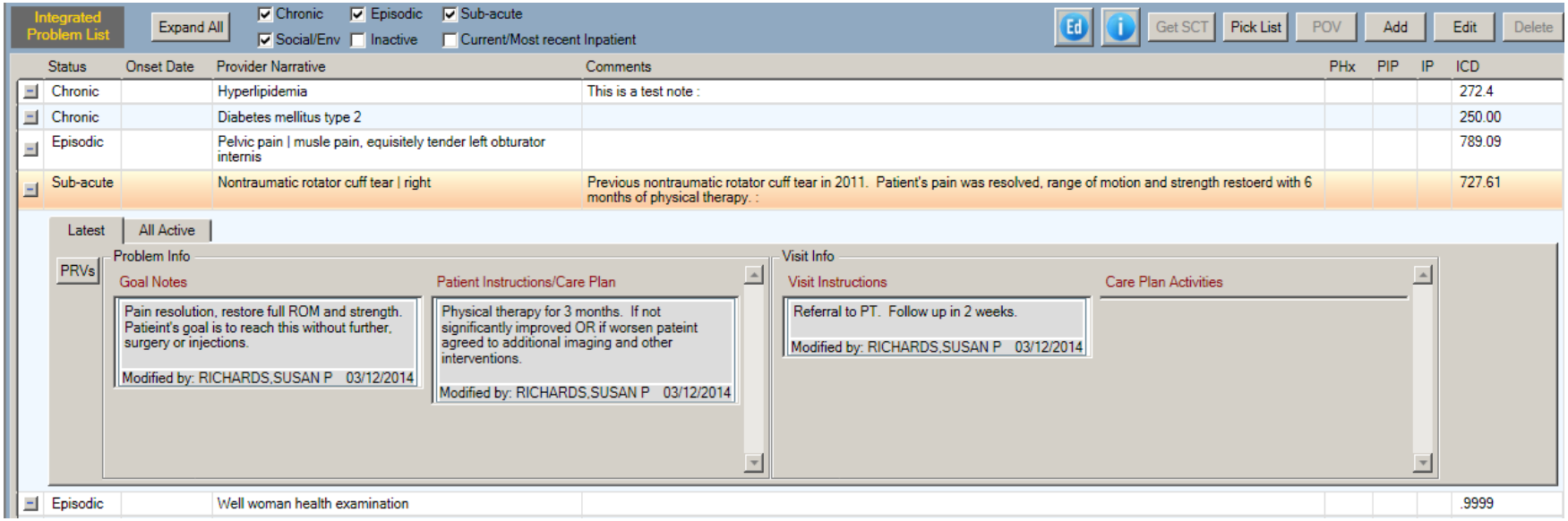
Note template icon in lower-right corner. Click to expose template option.



Template Option



Care Plan View

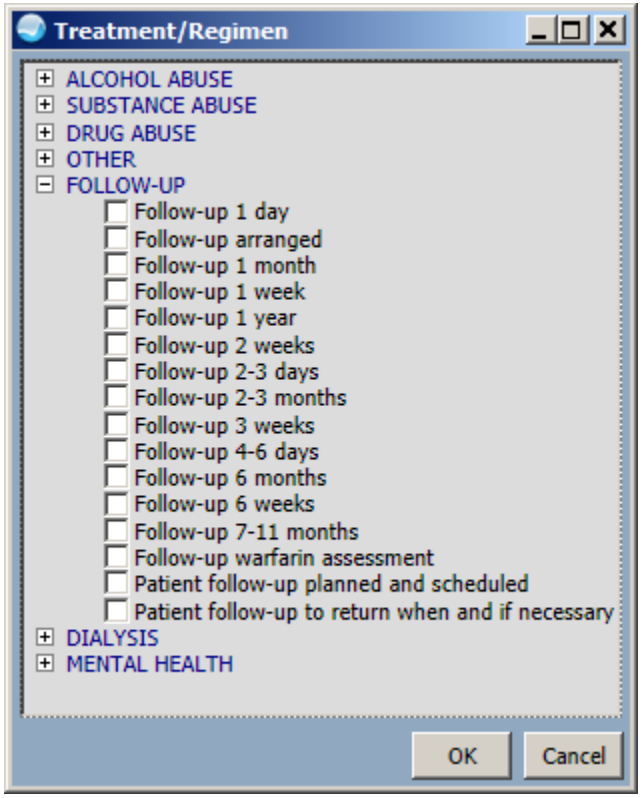


Care Planning

- Care Planning is signed and secure.
- Care planning notes are logically deleted leaving an audit trail.
- Problems with care planning documentation cannot be deleted, only inactivated.

Treatment/Regimen

- Currently contains some data points for clinical quality measures
- Will be pared down for release
- Will welcome some field input through RPMS feedback for relevant additions



IPL – Care Planning Considerations

Use of Goal Notes, Care Plan Notes, Visit Instructions enhanced by TIU Templates

- Consider local committee to work with CAC on development of these.

Review tools and consider drafting some guidance around care planning documentation.

- Who should document?
- Appropriateness of content
- When to delete notes
- When to inactivate notes

TIU Object “Active Problems w/o Dates”

Displays problems marked as “Chronic”

```
Chronic Problems:
  Obesity | Can add clarification

  Chronic otitis externa | right

  Diabetes mellitus type 2 |

  Asthma |

  Lactocele | This is a test

  Abnormal findings diagnostic imaging heart+coronary circulat |

  Closed fracture of proximal ulna, comminuted | left, traumatic acute, swell
     ing and hematoma at site
```

TIU Object “V Problem List”

Displays the problems selected as POV for current visit and visit instructions

```
Problem: PCOS - Polycystic ovarian syndrome |
 Mapped ICD:256.4 Status: CHRONIC
 -Instruction Date: 3/12/2014@12:51:21
 -Signed by:
  -INSTRUCTIONS:
   Test instruction


Problem: Well woman health examination |
 Mapped ICD:.9999 Status: EPISODIC

Problem: Nontraumatic rotator cuff tear | right
 Mapped ICD:727.61 Status: SUB-ACUTE

Problem: Pelvic pain | musle pain, equisitely tender left obturator internis
 Mapped ICD:789.09 Status: EPISODIC
 -Instruction Date: 3/12/2014@17:53:40
 -Signed by: RICHARDS,SUSAN P
  -INSTRUCTIONS:
   Referral to pelvic PT.  Use vaginal muscle relaxers at night as needed.
```