

Quick Start Guide Open Health Informatics John Chelsom, Stephanie Cabrera, Catriona Hopper, and Jennifer Ramirez Version: 1.0.0-SNAPSHOT Revision: 28th January 2025



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Introduction

This document describes the basic setup and features of the cityEHR starting from a standard, out-of-thebox installation.

If you don't have an installation of cityEHR yet you should refer to the cityEHR Installation Guide.

If you have a standard installation running under Tomcat on your local machine, you can access cityEHR at *localhost:8080/cityehr*. For remote servers, replace '*localhost*' with the server's IP address.

cityEHR is an XML-based application that uses only declarative programming languages, including XHTML, XML, XForms, XSLT, and XQuery, ensuring simplicity and flexibility in customization.

The source code is located at CATALINA_HOME/webapps/cityehr/WEB-INF/resources/apps/ehr. Here, CATALINA_HOME refers to the base directory of your Tomcat installation.

If you have cityEHR installed with a different application server or you have changed the locations of the standard installation then you will need to find where the *resources/apps/ehr* directory is located in your installation.

The remaining sections of this Guide cover;

- Registering Patients
- Entering and viewing clinical data
- Annotating patient records
- Viewing and plotting historical data
- Finding patients
- Creating cohorts of patients and exporting their data

This guide also introduces key administrative functions, such as accessing user resources, generating test data, managing users, and creating export data sets. Note that only a subset of administration functions is covered here.

cityEHR is fully configurable, enabling clinicians to design secure, enterprise-scale health record systems that meet international standards while supporting locally defined data sets.

Additionally, this Quick Start Guide demonstrates how to create a new EHR system from scratch, including building the information model, configuring patient labels, defining search criteria, and establishing cohort selection terms.

Verifying the installation

This chapter ensures cityEHR is correctly installed and accessible. It guides users through logging in with default credentials, building the default application, and navigating the Dashboard to confirm the setup. Additional steps include reloading the default application, enabling debug mode to explore cityEHR's underlying structures, and managing session timeouts.

Log On

If cityEHR is installed on Apache Tomcat, you can access the log-on page using the Firefox web browser. On a local machine, use the URL: *http://localhost:8080/cityehr*. If running on a remote server, replace 'localhost' with your server's IP address.

Note that cityEHR 1.7 must be accessed using Firefox only (IE 11, Edge, Chrome and Safari will be supported from version 2.0 onwards).

The base cityEHR installation has a single default user set up with the credentials;

username: admin

password: password



cityEHR Log-on Page

Upon your first log-on, cityEHR prompts you to build a default application. This process generates an example information model and configuration. Choose **'Build Default Application'** to proceed. Alternatively, you may start with an empty database, but note that some features (e.g., Dashboard elements) may not display without default information models.

	yEHR Administrator on successful.		cit	
	Initialize new cityEHR inst	allation EHI		
	Load the default configuration (reco	ommended) or sta Use Empty Data		latabase.
.3-2020 Joh	c Heath Record n Chelsom rmatics Research Programme			

Initialize New cityEHR Installation

cityEHR will now run through a sequence of steps to build the default application; while this is in progress the screen will look like the one displayed in the Figure below. It take a minute or so for this process to complete, so you will need to wait while before continuing.



Default Application Sequence Steps

After the default application has been built during your first log-on, and for every other time you log on, the screen will be as shown in the Figure below, after you have authenticated:

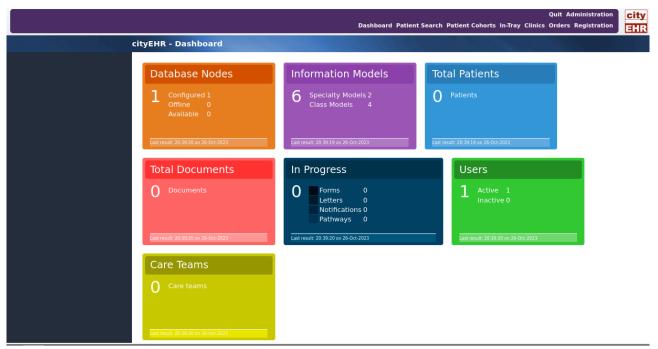


Post Authentication Page

Press the **Start** button to move to the default home page, which is pre-configured to be the dashboard page, as shown in the figure below

The Dashboard shows a summary of the overall status of the cityEHR application, which ships by default with the base installation. There is one user registered (the 'admin' user you logged in as) and no patients (so the total patients is zero, there are no clinical documents recorded and no documents in progress).

Note: The number of Information Models shown in the dashboard. If this number is zero (0) then the default application was not loaded properly when you ran cityEHR for the first time (probably because you selected to "Use Empty Database").



Default Home-page Dashboard

The Dashboard is your first glimpse of the pages in cityEHR, which can either be non-patient (like the Dashboard), cross-patient (ex. Patient Search page) or patient specific (view of the record for a patient, as identified in the Patient Label)

Whichever type, the general layout of all pages in the cityEHR system is the same, as shown in the figure below.

Patient Label		System Navigation	city
			EHR
EHR Navigation Type	EHR View Type Controls		
	EHR View Controls		
EHR Navigation			
, ,	EHR View Display		
,			
,			
Session Information			
System Page Layout			
Reloading the Defa	ult Application		

The default application can be reloaded from the information models shipped with the cityEHR system. You may need to do this if you selected to start with an empty database the first time you ran cityEHR (in which case the Dashboard will show the number of information models as 0) or if you changed the models and want to restore to the default.

To reload the default application;

- 1. Navigate to **Administration** in the system menu.
- 2. Select Information Model from the left navigation menu.
- Click Reload Shipped Models for This Application in the top-right corner.
 Note: If you are reloading the models because you started with an empty database, you will not see the summary of Information Models.

		Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration
Hid	cityEHR - Administration - Manage Informatio	n Model Show
▼ Information Model	Specialty: Summary - all specialties v Information M	odel: Summary - All Models 🗸 🗸
Manage Information Model		ormation Models (6)
Import Information Model	cityEHR Base (Common) Model (#ISO-13606:Folder:cityEHRBase)	#ISO-13606:Folder.cityEHRBase Specialty
Local Information Model		cityEHR Base (Common) Model /applications/ISO-13606-EHR_Extract-cityEHR/informationModel/cityEHR-Specialty-cityEHRBase-001.ods
Manage Media		#CityEHR:Class:Drugs
Manage Image Maps		Class Drugs /applications/ISO-13606-EHR Extract-cityEHR/informationModel/cityEHR-Class-CommonModel-Drugs-1.ods
► Directory		······································
Users and Care Teams	cityEHR Feature Demo (#ISO-13606:Folder:FeatureDemo)	#CityEHR:Class:Drugs
► Knowledge Sources		Class Drugs /applications/ISO-13606-EHR Extract-cityEHR/informationModel/cityEHR-Class-Drugs-2.ods
► Patient Records		#CityEHR:Class:Diagnosis
Manage Letters		Class Diagnosis
► Cohort Searches		/applications/ISO-13606-EHR_Extract-cityEHR/informationModel/cityEHR-Class-Diagnosis-21.ods
► Export Data Sets		#ISO-13606:Folder:FeatureDemo Speciality cit/EHR Feature Demo
CityEHR Version Number - V1.7-2023-10-26-03	Jser: cityEHR Administrator / cityEHR Feature Demo / en-gb Logged on: 19:15:47 Thursda	/applications/ISO-13606-EHR Extract-cityEHR/informationModel/cityEHR-Specialty-Feature-Demo-004.ods

Information Model Summary

- 4. In the Confirmation Dialog, select to **Reload**.
- 5. Now wait while the models are reloaded (which may take a few minutes) progress is displayed in the main view.

Once completed, the progress display will be cleared and you should see a summary of the models as shown in the Figure above.

Running in Debug Mode

cityEHR features a debug mode that allows the user access to additional features that expose some of the underlying information structures such as HL7 CDA documents. Debug mode can be activated in two ways:

Single session:

1. Add ?mode=debug to the URL (e.g., http://localhost:8080/cityehr/? mode=debug).

Persistent Setting:

- 1. Navigate to **Administration** in the system menu.
- 2. Select **System Parameters** from the left navigation menu.
- 3. Enable **Debug Mode** by checking the corresponding box and saving changes.

	Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration	city
Hid		EHR
▼ System		comi/s
Manage Application Parameters	Parameter Set Dynamic Parameters 💙 Base language: en-gb - English / en-gb - English 🗸	Edit 🔽
Manage System Parameters	Dynamic Parameters (dynamicParameters)	
Manage System Icons	Debugging Mode	
Import Language Pack	Record Audit Log 🔽	
Apply All Language Packs	Cache Forms Page load timeout PT10M	
View Audit Log	Check database node status (online/offline)	
New Application	Default application Id cityEHR	
Inspect Spreadsheet	Default application IRI prefix: #ISO-13606:EHR_Extract: value: #ISO-13606:EHR_Extract:cityEHR	
▶ Database	language code: en-GB displayName: English userSelection:	
► Information Model		
► Directory		
Users and Care Teams		

Edit system parameters to set Debug Mode

When operating in debug mode, cityEHR displays some additional action buttons and selections that allow you to explore the XML structures that underlie the configuration and clinical content (HL7 CDA).

You can now restart a new session in debug mode;

- 1. Press the **Quit** button in the system navigation.
- 2. Enter your credentials (admin / password) as usual and you should see an additional selection drop-down which you can use to view various cityEHR configuration parameters.



Note: the banner informing you that cityEHR will start in debug mode.

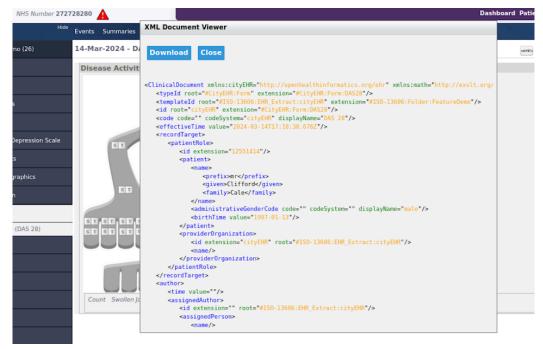
cityEHR start-up in Debugging mode

3. These are all represented as XML, so you can view directly in the system or select **Download** and view in a text editor, XML editor or any web browser.

On the Sign On page, as shown in the Figure above, various of the internal XML instances, built during the log on process, are available to view by selecting in the **Debug Info** drop-down and then pressing the **Debug** button.

Features of Debugging mode;

 On patient-specific data input pages (Forms, Letters, etc) pressing the XML button within the view controls will bring up a dialog box with a listing of the current HL7 CDA document associated with the data input form. This dialog also has a button to Download the HL7 CDA XML.



XML viewer open for DAS 28 Form

• On patient-specific data input pages are check boxes within the view controls to Display ISO 13606 structure.

PARSON, Posy (ms) Born: 25-Jul-19 Patient Id 78172756 NHS Number 1234		Dashboard Patient S	Search Patient Cohorts In-Tray Cli	Quit Administration hics Orders Registration	city EHR
In Progress New Hide	Events Summaries Forms Letters	Pathways Booking Ordering			Show
Fracture Record	05-Apr-2023 - Bone Mineral De	ensity * Page load time:	w ISO-13606 🗹 Show Ids 🗌 Highlight E	ntries None 🗸 🖬 💽	5 🔒
Medication Record	BMD Data				
Medication Record (Dual)	Date of Scan 05-4-2023	Age at scan 72 years			
Patient Images	BMD Data				
Body Mass Index		Lumbar Spine Femoral Neck	Total Hip	Comments	
Bone Mineral Density	× 05-4-2023 E	bar Spine Femoral Neck	Total Hip BMD		
BMD Data					- 1
Diet and Exercise Plan	t		t		
Diet and Strengthening Plan					
Book Services	z	Z	z		
Lifestyle Assessment					
Lifestyle Assessment and Schedule	U				
Blood Praceura History					

Showing ISO 13606 Structure in Debug Mode

View the Identifiers for the ISO 13606 components on the form by checking the **Show Ids** box within the view controls.

PARSON, Posy (ms) Born: 25-Jul-1 Patient Id 78172756 NHS Number 12:		Dashboard Patient Search Pa	Quit Administr tient Cohorts In-Tray Clinics Orders Registr	oney
In Progress New Hid	^{de} Events Summaries Forms Letters Pati	nways Booking Ordering		Show
Fracture Record	05-Apr-2023 - Bone Mineral Densit	y * Page load time: Show ISO-1360	06 🗌 Show Ids 🗹 Highlight Entries 🗔 None 👻	
Medication Record	#ISO-13606:Section:BMDData			
Medication Record (Dual)	BMD Data Date of Scan #ISO-13606:Entry:ScanDate of Scan #ISO-13606:Entry:Scan #ISO-	te		
Patient Images	#ISO-13606:Element:Date #ISO-1	3606:Element:AgeAtScan ccan 72 years		
Body Mass Index	#ISO-13606:Entry:BMDData BMD Data			
Bone Mineral Density	Scan date	Lumbar Spine	Femoral Neck	
BMD Data	x #ISO-13606:Element:ScanDate	#ISO-13606:Cluster:LumberSpine	#ISO-13606:Cluster:FemoralNeck	#ISO-13606:0
Diet and Exercise Plan	05-4-2023 💽	Lumbar Spine #ISO-13606:Element:BMDLumbar	Femoral Neck #ISO-13606:Element:BMDFemoral	Total Hip #ISO-13606
Diet and Strengthening Plan		BMD	BMD	BMD
Book Services		#ISO-13606:Element:TScoreLumbar	#ISO-13606:Element:TScoreFemoral	#ISO-13606 t
Lifestyle Assessment		#ISO-13606:Element:ZScoreLumbar	#ISO-13606:Element:ZScoreFemoral	#ISO-13606 z
Lifestyle Assessment and Schedule				
Blood Pressure History				
Lifestule Caste Questioneries				
Showing ISO 13606	6 Component Ids in Del	bug Mode		

Session Time Out

The cityEHR session is set to time out after a period on inactivity – this is controlled by the underlying session management of the Tomcat Application Server. If such a timeout occurs you will see an error dialogue which allows you to restart the application.

Got unexpected request sequence number	×
la contra cont	
Session has timed out or encountered an error.	
Press Resume to restart.	
Resume	
ISO-13606:Cluster:PatientIdentifiers	
ISO-13606:Cluster:BasicDemographics	
t - Title () /Mr/Mrs/Miss/Ms/Dr/Professor/notApplicable/	
t - Forename ()	
t - Surname ()	
#ISO-13606:Cluster:AgeAndGender	

Session Time Out Dialogue

In addition, there is a session page load time limit which restricts the ability to refresh pages using the browser **reload current page** button. This limit is set by default at 10 minutes, but can be changed in the Admin page (System Parameters) if necessary. A change from the duration P10M (10 minutes) to PT1M (1 minute) is shown in the figure below.

	Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration	city Elik
н	⁶⁶ cityEHR - Administration - Manage System Parameters	Show
▼ System		et onio
Manage Application Parameters	Parameter Set Dynamic Parameters 👻 Base language: en-gb - English / [en-gb - English 👻	Edit 🔽
Manage System Parameters	Dynamic Parameters (dynamicParameters)	
Manage System Icons	Debugging Mode 🗹	
Import Language Pack	Record Audit Log 🛂	
Apply All Language Packs View Audit Log	Cache Forms Page load timeout PTIM	
New Application	Check database node status (online/offline)	
Inspect Spreadsheet	Default application IRI prefix: #ISO-13606:EHR_Extract: value: #ISO-13606:EHR_Extract:cityEHR language code: [en-GB displayName: [English userSelection:]	
Show Wireframe	wuñawika rone: launa l'anahakusus: Euliana l'anatasiana l'anatasiana l'anatasiana l'anatasiana l'anatasiana l'a	

Changing the Page Load Timeout on the Administration Page

If the browser reload page button is pressed within this time limit, then the page will reload as requested; outside the time limit the session will simply return to the sign on page. This means that it is not possible to copy and paste the URL of a cityEHR session or to bookmark a page (the URL will be invalid once the session page load time limit has expired).

Logging in after a session has expired (i.e. a session that was not Quit by the user) will prompt for the session to be resumed at the point the previous session timed out or was aborted.

Welcome cityEHR Admi	nistrator		-		
Authentication success	ful.		CĪ		
You can access more th	an one application.			LY	
cityEHR ~					
Debug Info:					
Startup Log	~				
Start Debug Test	Quit		Eŀ		
tyEHR Electronic Heath Recor 2013-2020 John Chelsom	Resume User Se	ssion <mark>city</mark>			
pen Health Informatics Resea	Your last session was n	ot terminated pro	perly.		
	Resume Session	Start New Sess	ion Quit		

Download User Resources

Throughout this Quick Start Guide, some features will require resources such as sample patient records or information models. These resources are included with cityEHR and can be downloaded for your use.

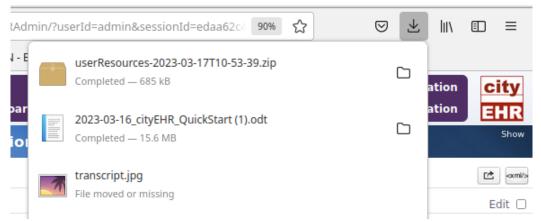
You can access and download these resources from the Administration page. To do this:

- 1. Click the **Administration** button in the System Navigation menu (top right of the page) to open the Administration page.
- 2. In the left-hand menu on the Administration page, select **Manage System Parameters** under the System menu.

	Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration
H	de cityEHR - Administration - Manage System Parameters
▼ System	
Manage Application Parameters	Download resources
Manage System Parameters	Version: V1.7-2023-02-26-01 Date: 2023-02-26T18:18:00.176Z
Manage System Icons	
Import Language Pack	
Apply All Language Packs	
View Audit Log	
New Application	
Inspect Spreadsheet	
▶ Database	
Information Model	

Download User Resources from Administration Page

- 3. At the top right of this view, click the **Download Resources** button as shown in the figure below.
- 4. A zip file containing the resources will download to your browser. Depending on your browser setup, this file will be saved in your default Downloads folder.



Zip Archive of User Resources Downloaded to Browser

- 5. Open the zip file to access the folders and files included as User Resources. These resources will be needed at various points throughout the Quick Start Guide.
- 6. The complete set of resources should resemble the list shown in the figure below. (This example uses the Linux Archive Manager; your interface may vary depending on your system's zip file handling settings.)

Extract +	userResources-2023-0)3-17T11-02-18.:	zip	Q	≡	-	ø	8
← → 📥 Location: 🛅 /								
Name	▼ S	ize	Туре	Modified	I			
defaultInformationModel	11	1.9 MB	Folder					
informationModelTemplates	82	21.9 kB	Folder					
> careTeams.xml	1.	.8 kB	XML document	17 March	2023,	11:02		
cityEHRAttachmentTemplate.docx	12	2.4 kB	Word 2007 do	17 March	2023,	11:02		
EHR_Extract-LauraAbernathy.xml	72	20.4 kB	XML document	17 March	2023,	11:02		
EHR_Extract-TimothyAbernathy.xml		21.6 kB	XML document	17 March	2023,	11:02		
myEHRFavicon.ico		11 bytes	Windows icon	17 March	2023,	11:02		
imyEHRLogoTall - Medium.png	7.	.1 kB	PNG image	17 March	2023,	11:02		
imyEHRLogoTall-Small.png	3.	.7 kB	PNG image	17 March	2023,	11:02		
PatientRecordImport.ods	12	2.7 kB	ODS spreadsh	17 March	2023,	11:02		
PatientRecordImport.xlsx	7.	.6 kB	Excel 2007 spr	17 March	2023,	11:02		
PatientRecordImport.xml	54	4.2 kB	XML document	17 March	2023,	11:02		
PatientRecordImport.xml.zip	1.	.6 kB	Zip archive	17 March	2023,	11:02		
README.txt	1.	.2 kB	plain text docu	17 March	2023,	11:02		
users.xml	14	4.5 kB	XML document	17 March	2023,	11:02		

User Resources Zip Archive

Exploring the Default cityEHR Application

This topic introduces the process of registering a new patient in the cityEHR application, guiding users through each step required to create a patient record. It explains how to access the registration form, complete required fields, and leverage features such as the demographics lookup service for auto-filling patient details. Additionally, the chapter covers options for entering GP details and addresses potential error messages. By the end, users will understand how to finalize patient registration and then search for them.

Registering a New Patient

On install, the database for the cityEHR application does not contain any patient records. To start using cityEHR, the first step is to create patient records via the patient registration page.

- 1. Log in using the default credentials:
 - Username: admin
 - **Password:** password
- 2. Click the **Registration** button in the System Navigation pane to access the registration form.

Dashboard Patient Search Patient Cohorts In-Tray	Quit Administration Clinics Orders Registration	city Elii
16-Mar-2024 - Patient Registration Page Load time:	Show ISO-13606 Show Is	ds 🗌 💷
Patient Demographics		
NHS Number Title - Select Value - ~ Sex Assigned at Birth Hospital Number Forename Gender Identity Overseas Patient Sumame Date of Birth	- Select Value - Select Value	
GP Details		
Code Address Dr Town City Practice Postcode Find GP		

Patient Registration Form

- 3. Enter a **Hospital Number**, which is a mandatory field (highlighted in pink) and serves as the unique patient identifier. All other fields are optional.
- 4. Fill in patient details (e.g., NHS Number, Title, Forename) manually or use the **Find Demographics** service:
 - Enter the NHS Number (simulating a national patient identifier).
 - Check the **Find Demographics** checkbox, which appears after entering the NHS Number.
 - The demographics service populates remaining fields with simulated data or, in live systems, pulls data from EPR or national services.

	Ouit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration
16-Mar-2024 - Patient Registration * Page load time	ones Show ISO-13606 □ Show Ids □ 5 II
Patient Demographics	
NHS Number 456 Hospital Number 46170247 Oversease Patient Find Demographics 2	Title Select Value - v Forename Gender Identity Jarcone Gender Identity Variance Hill Date of Birth 19-4-1973 Address 47 Acacla Gardens Town/City Lancaster Postoode LA4 6LO
GP Details	
Code Dr Practice Find GP	Address Town/City Postcode

Patient Registration "Find Demographics" Lookup Service

- 5. Similarly, Fill in GP details manually or use the **Find GP** service:
 - Enter Oxford in the Town/City field.
 - Check the Find GP checkbox to display two options. Select one to auto-fill GP details.

	Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration
16-Mar-2024 - Patient Registration * Page load time	Show ISO-13606 Show Ids 5
Patient Demographics	
NHS Number 456 Hospital Number 12121647 Overseas Patient □ Find Demographics ♥	Title - Select Value - √ Sex Assigned at Birth - Select Value - √ Forename Corin Gender Identity - Select Value - √ Surrame Cale Date of Birth 13-1-1997 20 Address 13 Sandy Lane - TownCity Colchester - Postcode C01 9DW -
GP Details	
Code Dr Practice Find GP Oxford V - Select Match- 101 Oxford 102 Oxford	Address TownChy Oxford Postcode

Find GP Service

6. Once all the details are entered (either by typing in the fields or by using the lookup services). Click the **Register** button (hover over it to see the label).

VancouverEHR	× +	
€ → ୯ û	0 O localhost: 8080/cityehr/ehr/cityEHRRegistration/?userId=admin&sessionId=cf9d9a60c7ef4d4a84962e8dfb7a914f	
		Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Registration
	22-Mar-2022 - Patient Registration *	
	Patient Demographics Nod Kimber 123 Hospital Number 1976 Oversean Patient Find Demographics Title Mr Provision 100 Sumante 100 Find Demographics Oversean Patient Sumante 100 Sumante 100 Find Demographics Oversean Patient Sumante 100 Sumante 100 Find Demographics Oversean Patient Sumante 100 Sumante 100 Find Demographics Address 2765 Oxford st Tenn/Oly Oxford Postcoler 00X 0x2	
	GP Details Code 8989 D* Applesauce Practice Family Find GP Address IIIILandon St TowyCVy Landon Practice Over 728	Click Register

Register Button

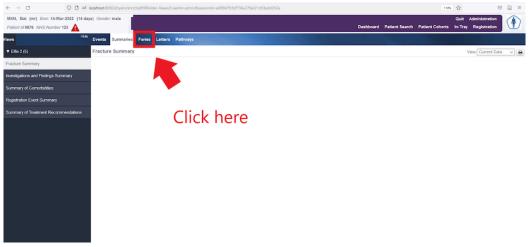
- 7. If successful, confirm the action in the dialogue box and choose the next navigation step (default: *Hospital Anxiety and Depression Scale form*).
- 8. If the Hospital Number is missing or already exists, an error message will appear. Dismiss it, update the field, and try again.
- 9. Once registered, a confirmation message is displayed, completing the patient registration process.

	city HR
17-Mar-2023 - Patient Registration *	5 💷
17-Mar-2023 - Patient Registration * Patient Demographics WHS Number 1423 Her Ser. Assigned at Birth Male GB Details Code Address To research Web Number If Ser. Assigned at Birth Male GB Details Register New Patient Code A new record will be created for this patient - data cannot be modified once committed. Atter registration: O Show patient record Weispital Anviety and Depression Scale OAS 28	
cty/CHR Weston Number - V1.7-2022-12-11-02 Uber: cty/CHR Administrator / cty/CHR Feature Demo / en.gb Logged on: 12-33.10 Wednesday, 15th March 2023 First log on for this user.	

Confirmation of Patient Registration



1. After registration, navigate to the **Forms** tab to access patient data entry forms. If the page does not load automatically, click the **Forms** tab.





2. You will be presented with a list of new forms that can be entered for this patient. The forms are listed in various 'contexts of care' with the top category 'cityEHR Feature Demo' containing all the forms available and the others containing smaller sets of forms for Administration and for Clinical Care.

Form with Enumerated Values and Calculated Data

1. Forms can now be selected to enter new patient data. For this example the **Hospital Anxiety and Depression Scale (HADS)** will be used. Select the Form from the left navigation menu.

CALE, Corin (mr) Born: 13-Jan-1997 (2) Patient Id 12121647 NHS Number 456		Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration
In Progress New Hid	Events Summaries Forms Letters Pathways Booking Ordening	Shor
▼ cityEHR Feature Demo (26)	16-Mar-2024 - Hospital Anxiety and Depression Scale Page load time:	🛲 Show ISO-13606 🗋 Show Ids 🗋 Highlight Entries - None - 🗸 🖨
Current Observations	Anxiety Score	
Acid Base Disorders	Depression Score I feel tense or 'wound up'	Select Value v
Allergies and Warnings	I still enjoy the things I used to	Select Value
Bone Chemistry	I get a sort of frightened feeling as if something awful is about to happen	Select Value v
Hospital Anxiety and Depression Scale	I can laugh and see the furny side of things Worrying thoughts go through my mind	Select Value v
Laboratory Test Results	I feel cheerful	Select Value V
Update Patient Demographics	I can sit at ease and feel relaxed	Select Value v
Feature Demonstration	I feel as if I am slowed down I get a sort of frightened feeling like 'butterflies' in the stomach	Select Value v
DAS 28	I have lost interest in my appearance	Select Value v
DAS 68	I feel restless as if I have to be on the move	Select Value v
	I look forward with enjoyment to things	Select Value v
Diagnosis	I get sudden feelings of panic	Select Value v
Family History	I can enjoy a good book or radio or TV program	Select Value v
Fracture History		

Hospital Anxiety and Depression Scale Form

- 2. The form will load and you can now enter data into the fields by answering each question using the drop down menu selections. For this test, it doesn't really matter how you answer the questions ensure you continue to the bottom of the page and select an answer for every question.
- 3. At the top of the HADS form are two calculated entries for Anxiety Score and Depression Score. These will be calculated when all the questions have been answered.

CALE, Corin (mr) Born: 13-Jan-1997 (27 Patient Id 12121647 NHS Number 456	
In Progress New Hide	Events Summaries <mark>Forms</mark> Letters Pathways Booking Ordering Stre
▼ cityEHR Feature Demo (26)	16-Mar-2024 - Hospital Anxiety and Depression Scale * Page load time: and Show ISO-13606 Show Ids . Highlight Entries - None - V R B S
Current Observations	Anxiety Score 16 Severe
Acid Base Disorders	Depression Score 11 Moderate I feel fense or Wound up' Most of the time
Allergies and Warnings	I still enjoy the things I used to Not quite as much v
Bone Chemistry	I get a sort of frightened feeling as if something awful is about to happen Yes, but not too badiy
Hospital Anxiety and Depression Scale	I can laugh and see the funny side of things Not quite so much now Worrying thoughts go through my mind A great deal of the time
Laboratory Test Results	I feel cheerful Not at all
Update Patient Demographics	I can sit at ease and feel relaxed Definitely ~
Feature Demonstration	I feel as if I am slowed down Very often v I get a sort of frightened feeling like 'butterflies' in the stomach Very often v
DAS 28	I have lost interest in my appearance Definitely
DAS 68	I feet restless as if I have to be on the move Very much Indeed ~
Diagnosis	I fook forward with enjoyment to things Rather less than I used to I gat sudden feelings of panic Quite often Quite often
Family History	I can enjoy a good book or radio or TV program Often v
Fracture History	

HADS Form: Anxiety and Depression Scores

4. Once you have finished entering data you can **Publish** the form to the patient record by clicking Publish in the EHR view controls.

CALE, Corin (mr) Born: 13-Jan-1997 (27) Patient Id 12121647 NHS Number 456		Quit Administration In-Tray Clinics Orders Registration
In Progress New Hide	Events Summaries Forms Letters Pathways Booking Ordering	Show
▼ cityEHR Feature Demo (26)	16-Mar-2024 - Hospital Anxiety and Depression Scale * Page ked time:	Highlight Entries None 🗸 🔲 🌢 🖨
Current Observations	Anxiety Score 16 Severe	↑
Acid Base Disorders	Depression Score 11 Moderate	
	I feel tense or 'wound up' Most of the time	✓
Allergies and Warnings	I still enjoy the things I used to Not quite as much ~	
Bone Chemistry	I get a sort of frightened feeling as if something awful is about to happen Yes, but not too badly	v
Hospital Anxiety and Depression Scale	I can laugh and see the funny side of things Not quite so much now V	
Hospital Anxiety and Depression Scale	Worrying thoughts go through my mind A great deal of the time	~
Laboratory Test Results	I feel cheerful Not at all	
Update Patient Demographics	I can sit at ease and feel relaxed Definitely ~	
	I feel as if I am slowed down Very often v	
Feature Demonstration	I get a sort of frightened feeling like 'butterflies' in the stomach Very often v	
DAS 28	I have lost interest in my appearance Definitely	~
DAS 68	I feel restless as if I have to be on the move Very much indeed v	
570 00	I look forward with enjoyment to things Rather less than I used to v	
Diagnosis	I get sudden feelings of panic Quite often v	
Family History	I can enjoy a good book or radio or TV program Often v	
Fracture History		

Publishing Completed HADS Form to the Patient Record

- 5. Select the **Commit Form** button with the radio button **Show patient record** selected.
- 6. Once the data have been committed to the patient record you will be moved back to the patient record folder displaying a list of all data in the record for your patient, including the HADS data just completed.

CALE, Corin (mr) Born: 13-Jan-1997 (27 yes Patient Id 12121647 NHS Number 456	ars) Gondor: male	Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration
Events Annotations LifeLine Hide	Events Summaries Forms Letters Pathways Booking Ordering	Show
▼ All Events (2)	16-Mar-2024 - Hospital Anxiety and Depression Scale Page load time:	
16-Mar-2024 Hospital Anxiety and Depression Scale	Anxiety Score 16 Severe Depression Score 11 Moderate	
16-Mar-2024 Patient Registration	I feel tense or 'wound up'	Most of the time
	I still enjoy the things I used to	Not quite as much
Patient Registration (1)	I get a sort of frightened feeling as if something awful is about to happen	Yes, but not too badly
Hospital Anxiety and Depression Scale (1)	I can laugh and see the funny side of things	Not quite so much now
P Hospital Analety and Depression Scale (1)	Worrying thoughts go through my mind	A great deal of the time
	I feel cheerful	Not at all
	I can sit at ease and feel relaxed	Definitely
	I feel as if I am slowed down	Very often
	I get a sort of frigthened feeling like 'butterflies' in the stomach	Very often
	I have lost interest in my appearance	Definitely
	I feel restless as if I have to be on the move	Very much indeed
	I look forward with enjoyment to things	Rather less than I used to
	I get sudden feelings of panic	Quite often
	I can enjoy a good book or radio or TV program	Often

Patient Record Folder with Completed Hospital Anxiety and Depression Scale Form

Form with Graphical Data Input

1. Return to the **Forms** tab and select the form for **DAS 28.** This form records the Disease Activity Score for the patient, by selecting joints that are either tender or swollen. The input of tender or swollen joints is made by clicking on the appropriate area in the homunculus image.

LADD, Janet (ms) Born: 21-Jun-1964 Patient Id 60083743 NHS Number 1515		Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration	city Elii
In Progress New Hide	Events Summaries Forms Letters Pathways Booking Ordering		Show
▼ cityEHR Feature Demo (26)	05-Aug-2024 - DAS 28 * Page load time:	Show ISO-13606 🗋 Show Ids 🗋 Highlight Entries None 🗸 🕼 📧	5 🔒
Current Observations	Disease Activity Score (DAS 28)		
Acid Base Disorders	S Swollen	Count Swollen Joints 4 Tender Joints 4 ESR 2.3	
Allergies and Warnings	Tender	Visual Analogue Scale 4	
Bone Chemistry	5 1 5 1	DAS Score 2.82	
Hospital Anxiety and Depression Scale			
Laboratory Test Results	Right		
Update Patient Demographics			
Feature Demonstration			
DAS 28			
Disease Activity Score (DAS 28)			
DAS 68			
Diagnosis			
Family History			
Fracture History			
Fracture Record			
Medication Record			
cityEHR Version Number - V1.7-2024-07-22-01 Us	ser: cityEHR Administrator / cityEHR Feature Demo / en-gb Logged on: 03:07:15 Monday, 5th A	ugust 2024 Last logged on: 02:59:07 Monday, 5th August 2024	

Disease Activity Score (DAS) 28 Form

- 2. As you click to select the tender and swollen joints you will see the counts changing. Enter values for ESR (e.g. 2.3) and Visual Analogue Score (e.g. 4) and the DAS Score will calculate.
- 3. The DAS Score will be recalculated each time you select a tender or swollen joint or change either the ESR or Visual Analogue Score.
- 4. Once you have finished entering data you can **Publish** the form to the patient record by clicking the Publish button as before. Confirm the action and the DAS 28 data stored in the patient record.
- 5. Select **Commit Form** on the Dialogue Box that appears after clicking Publish.

LADD, Janet (ms) Born: 21-Jun-1964 Patient Id 60083743 NHS Number 1515		Dashboard Patie	ent Search Patient Coh	Quit orts In-Tray Clinics Orde	Administration rs Registration	city Elix
In Progress New Hide	Events Summaries Forms Letters Pathways	Booking Ordering				Show
▼ cityEHR Feature Demo (26)	05-Aug-2024 - DAS 28 * Page load time:	-comit	Show ISO-13606 🔲 Show	v Ids 🗌 Highlight Entries 🕂	None 🗸 🖬 🔳	5 8
	Disease Activity Score (DAS 28)					
		S Swollen	Count ESR	Swollen Joints 4 Tender ,	Joints 4	
Allergies and Warnings		Tender	Visual Analogue Scale	4		
			DAS Score	2.82		
Hospital Anxiety and Depression Scale	Publishing Form					
Laboratory Test Results						
Update Patient Demographics	Form will be committed to the patient Show patient record O Hospital A					
	Commit Form Cancel	inviety and Depression Sca	one Orlacture Record			
DAS 28						
Disease Activity Score (DAS 28)	51 51 51 51 51 51 51 51 51 51 51					
Diagnosis						
Fracture Record						
cityEHR Version Number - V1.7-2024-07-22-01 Us	ser: cityEHR Administrator / cityEHR Feature Demo / en-gb Logge	d on: 03:07:15 Monday, 5th Augu	st 2024 Last logged on: 02:5	9:07 Monday, 5th August 2024		

Committing Completed Disease Activity Score (DAS) 28 Form

The patient record now displays the event, with the data you recorded.
 Note: This does not include the homunculus graphics that was used for data entry.

ivents Annotations LifeLine	^{Ide} Events Summaries Forms Letter	rs Pathways Booking	Ordering			Sho
▼ All Events (2)	05-Aug-2024 - DAS 28 Page load	time:				
05-Aug-2024 DAS 28	Disease Activity Score (DA	S 28)				
Disease Activity Score (DAS 28)	1st MCP (hand) left swollen 2nd PIP (hand) left swollen	Count	Swollen Joints 4	Tender Joints 4		
29-Feb-2024 Patient Registration	2nd PIP (hand) right swollen	ESR Visual Analogue Scale	2.3			
 Patient Registration (1) 	4th MCP (hand) right swollen 4th PIP (hand) left tender Elbow left tender	DAS Score	2.82			
► DAS 28 (1)	Elbow right tender Knee right tender					

Event Displayed in the Patient Record

7. Return to the **Forms** tab and select the **Family History** form from the left navigation menu.

Note: You may need to reduce the resolution of the page to fit the display of the form shown below, or you can press the small Hide button to collapse the left hand navigation pane and give more room for the form.

LADD, Janet (ms) Born: 21-Jun-1964 Patient Id 60083743 NHS Number 1515			Dashboard Patient Search Patien	Quit Administratio t Cohorts In-Tray Clinics Orders Registratio	
In Progress New Hide	Events Summaries Forms Letters Pathways Book	ing Ordering			Show
▼ cityEHR Feature Demo (26)	05-Aug-2024 - Family History * Page load time:		Show ISO-13606] Show Ids 🗌 Highlight Entries None 🗸 📓	
Current Observations	Family History				
Acid Base Disorders		Family history Year of Diagnosis	Relation	General Diagnosis	
Allergies and Warnings	க்ள் க்ள்	×	Maternal Aunt	Malaria	
Bone Chemistry		×	Son v		
Hospital Anxiety and Depression Scale					
Laboratory Test Results	▎ <mark>▁</mark> ▋┌─╨╷╹─┐╨╨╷				
Update Patient Demographics					
Feature Demonstration	│ 希 怀 希怀 ₳ ~~~ �� 希 ♥ 希 ♥	n			
DAS 28					
DAS 68	🛉 🛉 🛉 🛉 🛉				
Diagnosis					
Family History	· • • • • • • • • • • • • • • • • • • •				
Family History					
Fracture History					
Fracture Record					
cityEHR Version Number - V1.7-2024-07-22-01 Us	er: cityEHR Administrator / cityEHR Feature Demo / en-gb Logged on: 03:	07:15 Monday, 5th August 2024	Last logged on: 02:59:07 Monday, 5th August 2024		

Family History Form

- 8. This form has a representation of the family tree for the patient. Click on people icons in the image to select a family member this will then add a new line to the list of family members where you can fill out the date and details of a general diagnosis for that person.
- 9. To enter the diagnosis you can either press the '...' button to the right of the empty field, or begin typing for an auto-complete of the diagnosis.
- 10. You can also add family members by clicking the small **'+'** button at the top of the family history list, or remove a family member by pressing the **'x'** button next to the family member.
- 11. Once again, publish the form to the patient record when you are done.

LADD, Janet (ms) Born: 21-Jun-196 Patient Id 60083743 NHS Number 151			Dashboard Patient Search P	Quit Administratic atient Cohorts In-Tray Clinics Orders Registratic	
In Progress New Hide	Events Summaries Forms Letters Pathways Bookir	ng Ordering			Show
▼ cityEHR Feature Demo (26)	05-Aug-2024 - Family History * Page load time:		Show ISO-13	606 🗌 Show Ids 🗌 Highlight Entries None 🗸 🗟	
Current Observations	Family History				
Acid Base Disorders		Family history			
Allergies and Warnings	杰前 杰前	Year of Diagnosis	Relation Maternal Aunt	General Diagnosis	
Bone Chemistry	# T # T	×	Son	v General Diagnosis	
Hospital Anxiety and Depression Scale				Close Select Malaria	
Laboratory Test Results				Trauma Infection	
Update Patient Demographics	תי תירים ים ו			Viral Infection Fungal Infection	
Feature Demonstration	 #T #T #T # T #T #T			Parasitic Infection Malaria	
DAS 28				Scables	
DAS 68	1 * † * † * †			Blastomycosis Bacterial Infection	
Diagnosis				Prion Infection	
Family History	* * * * * *				
Family History					
Fracture History					
Fracture Record					
cityEHR Version Number - V1.7-2024-07-22-01 U	ker: citvEHR Administrator / citvEHR Feature Demo / en-ob Logged on: 03-0	7:15 Monday, 5th August 2024	Last logged on: 02:59:07 Monday, 5th August	2024	

Selecting the Diagnosis from a Drop-down

Form with Sorting of Entries and Conditional Elements

- 1. Within the **Medication Record** Form, you can enter data for either Current Medications or Previous Medications by pressing the appropriate **'+'** button.
- 2. To enter the name of the medication you can either start typing in the input box, or select '...' to the right of the empty field, which will bring up an expandable list of medications from which you can select.

CALE, Corin (mr) Born: 13-Jan-1997 (2 Patient Id 12121647 NHS Number 456		Quit Administration
In Progress New Hi	de Events Summaries Forms Letters Pathways Booking	Ordening Show
▼ cityEHR Feature Demo (26)	16-Mar-2024 - Medication Record * Page load time: Drug name	ore Show ISO-13606 🗋 Show Ids 🗋 Highlight Entries - None 🗸 💽 🔊 🖨
Current Observations	Medications	
Acid Base Disorders	Current Medication Close Select	
Allergies and Warnings	Stopped Osteoporosis Drugs ame	Start date 16-3-2024 🗷
Bone Chemistry	Previous Medicatio Humira. Prednisolone	
Hospital Anxiety and Depression Scale	Current drugs 1 Cyclophosphamide -Hydroxychloroquine	
Laboratory Test Results	- Leftunomide - Enbrel	
Update Patient Demographics	Humira Prednisolone	
Feature Demonstration	- Cyclophosphamide - Alendronate	
DAS 28	Risedronate	
DAS 68		
Diagnosis	-Zoledronate -Diciofenac	
Family History	- Ibuprofen - Bendroflumethazide	
Fracture History	- Omeprazole - Lansoprazole	
P	-Aspirin	

Medication Form's Expandable List of Medications

- 3. When typing the name of the medication you will either get a single medication filled out automatically as soon as your input matches it uniquely, or a drop-down selection of matching medications.
- 4. Once you've added a collection of medications, try checking or unchecking the **Stopped** button. When you do this, the medication will be moved between the lists for Current or Previous Medications.
- 5. Publish the form to the patient record when you are done.

LADD, Janet (ms) Born: 21-Jun-196 Patient Id 60083743 NHS Number 151	
In Progress New Hide	Events Summaries Forms Letters Pathways Booking Ordering Show
▼ cityEHR Feature Demo (26)	05-Aug-2024 - Medication Record * Auge load time: Show ISO-13606 Show Ids Highlight Entries - None
Current Observations	Medications
Acid Base Disorders	Current Medication Stopped Drug name Start date
Allergies and Warnings	X Leftunomide 05-0-2024
Bone Chemistry	Previous Medication 🔶
Hospital Anxiety and Depression Scale	Stopped Drug name Start date Stop date Reason for stopping X Alendronate 05-0-2023 0 04-0-2024 2
Laboratory Test Results	Current drugs 1 Stopped drugs 1 Total 2
Update Patient Demographics	
Feature Demonstration	

Categorization of Current and Stopped Medications

Form with Multiple Entries, Calculations and Pre-Filled Data

- 1. Navigate to the **Body Mass Index** Form.
- 2. On this form you can enter a set of measurements for height and weight of the patient on various dates the Body Mass Index (BMI) will be calculated, along with the average height and weight for the patient.
- 3. Publish the form.
- 4. Now return to the **Forms** tab and select the **Body Mass Index** form again.
- 5. The form will be pre-filled with the entries added in the previous step.
- 6. New entries can be added, however published ones cannot be removed or edited.

Note: The information model defining this behaviour can be set up to allow previous entries to be updated and/or deleted.

Patient Id K1992183 NHS Number 756	iom: 30-Sep-1959 (60 years) 63628274	Gender, mare			Dashboard	Patient Search	Patient Cohorts		Quit Admin Registration	cit E
Progress New	Hide Events Summaries	Forms Letters Pathwa	ys Care Setting: cityEHI	R Feature Demo 🗸						
cityEHR Feature Demo (22)	25-Aug-2020 - Bo	dy Mass Index * Page load tim	e: PT2.607S				www Highlight Entrie	s – None		5
urrent Observations	Body Mass Inde	ex								
lergies and Warnings	Body Mass Index	•								
	Measurem			BMI (kg/m [*])						
ne Chemistry	X 28-Aug	-20 Height 173	(cm) Weight 87	29.07	Overweight					
boratory Test Results	¥ 27-Aug	-20 Height 173	(cm) Weight 82	g) 27.4	Overweight					
pdate Patient Demographics	X 07-Aug	-20 Height 173	(cm) Weight 85	3) 28.4	Overweight					
ature Demonstration	Height	Minimum 173		Average 173 (cm)						
ospital Anxiety and Depression Scale	Weight	Minimum 82 ((kg) Maximum 87 (kg)	Average 84.6666666	6666667 (Kg)					
AS 28										
IAS 68										
AAS 28 AAS 68 Nagnosia 'amily History										
AS 88 lagnosis amily History										
AS 68 lagnosis										
AS 88 agnosia unity History acture History acture Record										
kS 66 agnosis umity History acture History acture Record scication										
kS 66 agnosis mily History acture History acture Record dication tient Images										
AS 88 lagnosis amily History racture History										

Body Mass Index Form with Calculations

Form with Enumerated Class and Supplementary Data

- 1. Navigate to the **Diagnosis** Form.
- 2. Press the **'+'** button to add a new diagnosis.

- 3. Select '...' to browse available diagnoses or use the auto-complete (e.g. type sw...)
- 4. Depending on the diagnosis you select, you may see an additional **SDS** to the right of the diagnosis once it is selected.
- 5. Select this button to see the Supplementation Data Set dialogue.

LADD, Janet (ms) Born: 21-Jun-1964 Patient Id 60083743 NHS Number 1515		Dashboard Patient S	Quit Administration earch Patient Cohorts In-Tray Clinics Orders Registration
In Progress New Hide	Events Summaries Forms Le	etters Pathways Booking Ordering	Show
▼ cityEHR Feature Demo (26)	05-Aug-2024 - Diagnosis	* Page load time: Sho	w ISO-13606 Show Ids Highlight Entries - None V 😧 🗈 🖨
	Diagnosis		
Acid Base Disorders	Diagnosis - Infection	neral Diagnosis Bacterial Infection	
Allergies and Warnings	X Swine Flu	555	
Bone Chemistry	Co-morbidities	Supplementary Data Set -	
Hospital Anxiety and Depression Scale	Diagnostic Image	OK	
Laboratory Test Results		Viral Infection Type of infection	
Update Patient Demographics		Onset Episode Select Value v	
Feature Demonstration		Clinical Course Select Value v Select Value v	
DAS 28		Status Select Value v	
DAS 68			
Diagnosis			
Diagnosis			
Family History			

Entering a Supplementary Data Set

6. Complete the required data for the dialogue box and select **OK** when completed.

The supplementary data is displayed next to the diagnosis it is associated with.

LADD, Janet (ms) Born: 21-Jun-1964					Quit Administration	city
Patient Id 60083743 NHS Number 1515	5151 🛕			Dashboard Patient Search Pat	ient Cohorts In-Tray Clinics Orders Registration	EHR
In Progress New Hide	Events Summaries Forms					Show
▼ cityEHR Feature Demo (26)	05-Aug-2024 - Diagnosis	s * Page load time:		Show ISO-1360	6 🗋 Show Ids 🗋 Highlight Entries - None - 👻 💽	5 8
Current Observations	Diagnosis					
Acid Base Disorders	Diagnosis - Infection 🔶		Seneral Dia	innele	Bacterial Infection	
Allergies and Warnings	X Swine Flu		505	Onset 21-Aug-2024 Episode New episode		
Bone Chemistry				Clinical Course Chronic Severity Moderate Status Suspected		
Hospital Anxiety and Depression Scale	Co-morbidities +					
Laboratory Test Results	Diagnostic Image	Browse No fil	e selected.	For information see		
Update Patient Demographics						
Feature Demonstration						
DAS 28						

Display of Supplementary Data Set

- 7. Now add a diagnostics image by selecting the **Browse** button from Diagnostic Image.
- 8. Navigate to a file on the file system to upload that image to the record.

Note: The image is stored directly in the current composition when it is committed to the patient record – this feature is designed for informal images as the type that might be capture in a mobile phone, not full diagnostic images capture using some imaging modality – any such images would be managed in the PACS, not the EHR.

9. Once the image has been uploaded it is displayed inline on the form.

LADD, Janet (ms) Born: 21-Jun-1964 Patient Id 60083743 NHS Number 1515		
1944		ihow
▼ cityEHR Feature Demo (26)	D5-Aug-2024 - Diagnosis * Page tood time: Show ISO-13606 Show Ids Highlight Entries - None	8
Current Observations	Diagnosis	
Acid Base Disorders	Diagnosis - Infection General Diagnosis Bacterial Infection	
Allergies and Warnings	Swine Flu sos Lyme disease sos	
Bone Chemistry	Co-morbidities 🔶	
Hospital Anxiety and Depression Scale	Diagnostic Image For information see	
Laboratory Test Results		
Update Patient Demographics		
Feature Demonstration	The second second	
DAS 28		
DAS 68		
Diagnosis		
Diagnosis		
Family History		
Fracture History		
Fracture Record		

Diagnostic Image Uploaded from the File system

- 10. Select the **Publish** to commit the form to the record and navigate to the patient **Events.**
- 11. The data recorded in now saved and displayed in the patient record, including the uploaded image.

Finding Patients

Once patients are recorded in your database, you can search for them and select the desired patient to view their record or input data.

1. Click the **Patient Search** button in the purple system navigation pane at the top of the page to open the search form, as shown below.

		Dashboard	Patient Search	Patient Cohorts	In-Tray		Quit Admin Registration	city EffR
Recent In-patients								
	Patient Search			Inpatients Only	Order by	Surname •		515
	Patient Id	Surname	Forename					
	Gender - Select Value - Day of Birth - Select Value -	Month Select Value •	Year		Date			
	ConsultantEnter search criteria to find patient.							
dtyEHR V0.98 User: dtyEHR User Logger	d on: 14:38:09 on Thursday, 3rd October 2013 La	st logged on: 0000-00-00T00:00:00.00+00:00						1

Patient Search Form

- 2. Enter your search criteria and click the **Search** button at the top of the form. You can also press **Enter** after typing in any text input field. Hovering your mouse over the button will display its name.
- 3. For test patient data, try searching using a common letter in the surname or a patient identifier. For example, entering "K" may return results if the default format for patient identifiers was used when generating the test data.

25737 - Winston	Patient Search K: Search time:	PT0.7335 / PT0.4185			Order bj	Hospital Number 🗸 I 🔍
	Patient Id 10	Sumame Forename	*			
	Gender - Select Value -					
	Day of Birth - Select Value -	✓ Month - Select Value - ✓ Yea	r Date 🗷			
	Consultant					
	Displaying 1 to 10 of 20 patients	s Page 1 of 2 🕨 📦				
	Patient Id	Sumame	Forename	Gender	Date of Birth	
	K9954501	Walters	Zak	Male	03-Sep-1986	
	K9897575	Borras	Angela	Female	15-Nov-1944	
	K9757100	Borras	Hlary	Female	15-Nov-1944	
	K9749102	Norton	Wallace	Male	15-Nov-1972	
	K5654509	Woods	Alfred	Male	11-Sep-1987	
	K5550102	Trimble	Sigmund	Male	23-Jun-1982	
	K5499100	Grant	Corey	Male	15-Jan-1953	
	K5497515	Walters	Amber	Female	12-Jul-1986	
	K5453100	Neale	Heston	Male	08-Mar-1973	
	K5397545	Collymore	Bridget	Female	23-Apr-1946	

Searching Patients with Patient ID using "K" as a Patient Identifier

- 4. The search results will display basic demographic details of matching patients:
 - If no results are found, a notification will appear.
 - If too many patients match your criteria (e.g., searching for "Male"), you'll be prompted to enter more specific search criteria.
- 5. When patients are found, the list will display even if only one result matches. This allows you to confirm the correct patient before viewing their record.

Patter Sacrity (* loss one PDE 202/PS dE) (Ode by Respect to the origination of the origination	Recent Care Team						
Order Outer War Nor Date Day diffe	95325737 - Winston	Patient Search K: Search time	PT0.7335 / PT0.4185			Order by Hospital	Number v Q 5
Day of theSelect Value - v Mor Date If Construer		Patient Id 10	Sumame Forenar	me			
Dataset Page 1 of 2 Dataset Page 1 of 2 Patter Summer Patter Summer <td></td> <td>Gender - Select Value -</td> <td></td> <td></td> <td></td> <td></td> <td></td>		Gender - Select Value -					
Dataset Page 1 of 2 Dataset Page 1 of 2 Patter Summer Patter Summer <td></td> <td>Day of Birth - Select Value -</td> <td>V Month - Select Value - V</td> <td>Date 🖉</td> <td></td> <td></td> <td></td>		Day of Birth - Select Value -	V Month - Select Value - V	Date 🖉			
Dialoging Its 10 420 patients Apple 102 Apple Concernent Gandor Data of Dialoging Patient M Stratumer Lowenant Apple							
Potent M Summer Conder Date of Birth KV94501 Waters 2.8k Main 6.55e+106 KV94501 Waters 2.8k Main 6.55e+106 KV94501 Brons Appria Fernale 6.5ke+106 KV95175 Brons Appria Fernale 15-ke+154 KV95170 Brons Main Main 15-ke+154 KV94192 Notion Watline Main 15-ke+154 KV84192 Notion Watline Main 15-ke+154 KV64091 Woofn Afted Main 15-ke+154 KV64092 Trouble Sigmand Main 15-ke+152 KV649100 Grad Corey Main 15-ke+152 KV649101 Nainer Anber Fernale 15-ke+152 KV5102 Waters Anber Fernale 15-ke+152		Constantion					
Ordelation Watern Zak Main D350000 D0014021 Densis Appla Frender 15400-1964 X075100 Densis Halary Frender 15400-1964 X075102 Densis Halary Frender 15400-1964 X050102 Notein Wattee Main 15400-1964 X050102 Tember Signandi Main 233-1982 X050102 Tember Corry Main 13-00-1933 X050102 Natern Anber Frender 13-00-1933 X050102 Natern Anber Frender 13-00-1933		Displaying 1 to 10 of 20 patients	Page 1 of 2 + +				
Bitrast Applia Female 15400-1544 KSIS7100 Bitrast Hilary Female 15400-1544 KSIS7102 Noton Walke Maile 15400-1534 KSIG4102 Noton Walke Maile 11560-1972 KSIG402 Tomba Sigmand Maile 123-06-1972 KSIG502 Tomba Sigmand Maile 15-06-1972 KSIG510 Gatt Compt Maile 15-06-1972 KSIG510 Nailer Ander Female 12-06-1982			Sumame	Forename	Gender	Date of Birth	
HSIRT190 Bonas Harry Finada 1550-1964 HSIRT1902 Motine Valines Mail 11-Nine 1972 K656103 Woodn Albed Mail 11-Sing-1987 K656103 Woodn Albed Mail 23-Jul 182 K656103 Grant Corey Mail 13-Jul 183 K5401910 Grant Corey Mail 13-Jul 183 K5401915 Wathers Anber Fennale 12-Jul 183 K5401916 Nation Maile 13-Jul 183							
Notion Values Main 15-Nov-1972 KK04X95 Woods Albrd Main 115-00-1972 KK04X95 Trollo Sigmand Main 115-00-1972 KK04190 Orant Sigmand Main 53-00-1972 KK041900 Orant Corey Main 53-00-1972 KK041900 Walters Ander Female 12Au-1986 KK041900 Naria Helsin Main 6Main*37							
4X64009 Woofs After Main 11500197 4X650102 Timale Sigmand Main 23June 1982 4X650103 Grant Conyr Main 15June 1983 4X6501515 Watters Ander Female 15June 1933 4X6501515 Watters Ander Female 15Jule 1937							
K555102 Temble Sigmund Male 23 June 1932 K559100 Grant Corey Male 15 June 1932 K559150 Watters Anther Female 12 Jule 1986 K5453150 Watters Helsin Male 6 Mare 197							
KK49100 Grant Comp Main HSJ KK491515 Waters Ander Femain 152-411966 KK51510 Niele Heaton Main 65 Main 173							
K5407515 Waters Ander Female 12-Jul 1980 K545100 Neale Histori Male 08/Mar 1973							
K5453100 Neale Heston Male 08-Mar-1973							
K331545 Colymore Broget Female 23-Apr-1346							
		K5397545	Collymore	Bridget	Female	23-Apr-1946	
		K5397545	Collymore	Bridget	Female	23-Apr-1946	
		<u> </u>	εςι α γαι	ent			
Select a Patient							
Select a Patient							

List of Patients Found Using Patient Search

6. Click a patient from the list to access their default summary view. This view includes features for reviewing, charting, and annotating the record. The next exercise will guide you through these functionalities.

Creating Test Patients

To explore cityEHR further, you will need a larger sample of test patients. These can be generated using the functions available on the **Administration** page, which is accessed by clicking the **Administration** button in the main system menu (top right of the page).

- 1. On the **Administration** page, select the **Database** option from the left-hand menu, and then click **Generate Test Data**.
- 2. Click the **Browse** button to load a file containing a sample patient record.

		Dashboard	Patient Search	Patient Cohorts	In-Tray	Quit Admin Registration	city EHR
	Hole cityEHR / ISO-13606-Folder-FeatureDemo - Administration - Generate Test Data					States 1	Show
Information Model	XML file, or zip of XML file, containing a template record. Files created by the patient export function can be loaded directly.						
Directory	The file must contain a single iso-13808:EHR_Extract containing a set of oda:ClinicalDocument elements Every oda:ClinicalDocument must be for the same patient as defined by the iso-13808:EHR_Extract						
► System	Template CDA documents: Browse No file selected.						
▼ Database							
Run XQuery							
Load Document to XML Store							
Generate Test Data							
Browse Databases							
 Users and Care Teams 							
 Knowledge Sources 							
Patient Records							
Cohort Searches							
Export Data Sets							
Redirect Notifications							
My User Account							
Manage Patient Access							
Test Web Service							
cityEHR Version Number - V1.7-2020-07-02-5 U	ser: cityEHR Administrator / No specialty loaded. Logged on: 09:54:10 on Thursday, 27th August 2020 Last logged on: 00:52:34 on Thursd	ay, 27th August 2020					

Generating Test Data

3. Navigate to your downloaded **User Resources** folder and select the file named *EHR_Extract-TimothyAbernathy.xml*. (You can open this file separately using a text editor if you wish to view its contents.)

		F	ile Upload			8
📥 Home	🖣 📥 john 🛛 Documer	s cityEHR	user resources	×		
Desktop	Name				Size	Modified
Documents	informationModelTemp	ates				10 Nov 2021
👃 Downloads	defaultInformationMod	I				10 Nov 2021
🞵 Music	🐠 users.xml				14.5 kB	10 Nov 2021
	README.txt				1.2 kB	10 Nov 2021
Pictures	PatientRecordImport.od				12.8 kB	10 Nov 2021
🕂 Videos	EHR_Extract-TimothyAb	rnathy.xml			722.6 kB	10 Nov 2021
	EHR_Extract-LauraAber	athy.xml			721.4 kB	10 Nov 2021
🔲 Jelly2 🛛 📥	cityEHRAttachmentTem	late.docx			12.4 kB	10 Nov 2021
	careTeams.xml				1.8 kB	10 Nov 2021
🛅 tomcat						
💼 images						
- Other Locations						
						All Files 🔻
					Cancel	Open

Locating "EHR_Extract-TimothyAbernathy.xml" in User Resources Folder

4. The **User Resources** folder was created when you downloaded resources in the *verifying the Installation* section.

5. After uploading the *EHR_Extract-TimothyAbernathy.xml* file, you will see a range of options for generating test data, as shown below:

									Quit Administration	on city
					Dashboard	Patient Search	h Patient Cohorts	In-Tray Clinic	s Orders Registratio	
Hide	cityEHR - Admini	stration - Ger	erate Test Da	ta						Show
	XML file, or zip of XML fi Files created by the patie The file must contain a s Every cda:ClinicalDocurr Template CDA documen Report Progress	ent export function c ingle iso-13606:EHF ient must be for the ts: EHR_Extract-Tim Number of records	an be loaded directly B_Extract containing same patient as defined tothyAbernathy.xml	a set of cda:ClinicalD ned by the iso-13606:		nents				5
	Processed records 0 / 10 Gender Step time Average step time	Value Percentage Number of records Forename Patient identifier pr	No forename	Male 20 0 V No forename identifier length 8 rs) 18 Maximum	Female 20 0 V No foren (7 - 23) n age 65	20		Intersex 20 0 No forename	Unknown 20 0 v No forename	×.

Generate Test Data Parameters, Following File Upload

- 6. By default, the system generates 10 test records evenly split between male, female, and other gender categories, aged between 18 and 65.
- 7. To customize, adjust the percentages in the gender columns (e.g., set **Male** and **Female** to 50% each and the others to 0%). Ensure the percentages total 100%; otherwise, an error message will appear. Optionally, generate 100 records instead of 10, but note that it may take up to 5 seconds per record, potentially exceeding 5 minutes for 100 records.

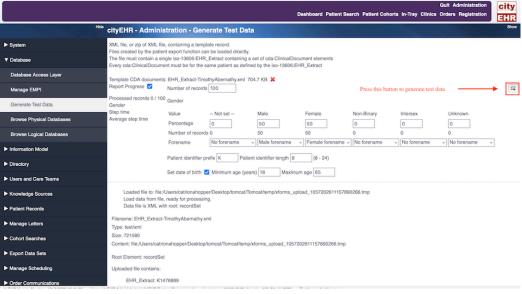
Note: The Generate button will only be active when the percentages across all categories add up to 100%

8. Set the **Forename** selection to **Male Forename** and **Female Forename** in their respective columns.

		il R
Hide		Show
► System	XML file, or zip of XML file, containing a template record. Files created by the patient export function can be loaded directly. The file must contain a single iso Single-EHR, Extract containing a set of cda.ClinicalDocument elements	
Database Access Layer Manage EMPI	Every cda.ClinicalDocument must be for the same patient as defined by the iso-13606.EHR_Extract Template CDA documents: EHR_Extract TimothyAbernathyxmi 704.7 KB X Report Progress Number of records 100	5
Generate Test Data Browse Physical Databases	Processed records 0 / 100 Gender Step time Value Not set <u>Male Female</u> Kon-Binary Intersex Unknown Average step time Percentage 0 50 50 0 0 0	
Browse Logical Databases	Number of records 0 50 50 0 0 0 Forename No forename v Male forename v Penale forename v No forename v No forename v	
Directory Users and Care Teams	Patient identifier prefix. K Patient identifier length 8 (8 - 24) Set date of birth ♥ Minimum age (years) 18 Maximum age 86	
Knowledge Sources	Loaded file to: file:/Users/catrionahopper/Desktop/tomcat/Tomcat/temp/xforms_upload_1057202611157880266.tmp Load data from file: ready for processing. Data file is XML with not: recordSet.	
Patient Records Manage Letters	Filename: EHR_Extract-TimothyAbernathy.xml Type: text/xml	
Cohort Searches Export Data Sets	Size: 721580 Content: Me/Users/catrionahopper/Desktop/tomcat/Tomcat/Tomcat/toms_upload_1057202611157850266.tmp Root Element: recordSet	
Manage Scheduling Order Communications ob/EHR Version Number- V1.7-2022-19-11-02 User-ob	Uploaded file contains: EHR_Extract: K1476889 xEHR Administrator / dwGHR feature Demo / en-gb Logged on: 12:33:10 Wednesday, 15% March 2022 Finst log on for this user.	

Generate Test Data with Parameters Set

9. Once the parameters are configured, click the small **Generate** button on the right-hand side to create the test records. This process may take some time to complete.



Generating Test Data

10. After the records are generated, your screen will display a confirmation, as shown below:

	Oult Administration Deshboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration	city Elli
	166 cityEHR - Administration - Generate Test Data	Show
► System	XML file, or zip of XML file, containing a template record. Files created by the patient export function can be loaded directly.	
▼ Database	The file must contain a single iso-13606/EHR_Extract containing a set of cda:ClinicalDocument elements Every cda:ClinicalDocument must be for the same patient as defined by the iso-13606/EHR_Extract	
Database Access Layer	Template CDA documents: EHR_Extract-TimothyAbernathyxml 704.7 KB 🗙	
Manage EMPI Generate Test Data	Loaded file to: file/Users/catrionahopper/Desktop/homcat/Torncat/temp/xforms_upload_105/202611157890266.tmp Load data from file, ready for processing. Data file is XML with root: recordSet	
Browse Physical Databases	2023-03-17721:15:49.29327 (PT2M11.296S) generate-test-data (100/100) generate-test-record	
Browse Logical Databases	(1/100) generate-test-data / generate-test-record / PT1.37S K1985397 / French	
Information Model	(2/100) generate-test-data / generate-test-record / PT1.217S K2495557 / Archibold	
► Directory	(3/100) generate-test-data / generate-test-record / PT1.153S K3545150 / Crossley	
► Users and Care Teams	(4/100) generate-test-data / generate-test-record / PT1.14SS K4489910 / Huntington-Smythe	
Knowledge Sources	(S/100) generate-test-data / generate-test-record / PT1.179S K5989954 / Borras	
► Patient Records	(6/100) generate-test-tatal / generate-test-record / PT1.212S K6481001 / Etheringham (7/100) generate-test-tatal / generate-test-record / PT1.139S	
Manage Letters	(7100) generate-test-tata / generate-test-record / PT1.1393 (8/100) generate-test-data / generate-test-record / PT1.177S	
Cohort Searches	K8102524 / Borras (9/100) generate-lest-data / generate-lest-record / PT1.18S	
Export Data Sets	K9519954 / Woods (10/100) generate-test-data / generate-test-record / PT1.234S	
Manage Scheduling	K1050989 / Embury (11/100) generate-test-data / generate-test-record / PT1.146S	
Order Communications cityEHR Version Number - V1.7-2022-12-11-02	K1152399 / Sanders 191700) neneratival-tidat / nenerativ.leat/secord / PT1 1975, User cityEHR Administrator / cityEHR Feature Damo / engb Logged or: 12:33:10 Wednesday, 158: March 2023 First log on for this user.	

Generating Test Data Completed

11. Click the **Dashboard** button in the main system menu to leave the **Administration** page. The **Dashboard** will now reflect the newly loaded records.



Updated Dashboard with Generated Test Data

Viewing the Patient Record

Summary View and Charting

When you first access a patient's record, the **Summary** page is displayed, providing a selection of various summary views.

1. The default view is the summary for **Bone Chemistry – Messages**. These are bone chemistry results that have been sent to the cityEHR as messages from the laboratory which performed the tests. (At least we are pretending this in the test data, although the results used were originally generated in this way)

FINMORE, Gary (Mr) Bom: 13-Ap Patient Id K8971395 NHS Number 7				Dashboard	Patient Search	Patient Cohorts	in-Tray	Quit Admin Registration	city EHR
Views	Hide Events Summaries Forms Lette	rs Pathways Care Setti	ng: cityEHR Feature Demo 🗸			10. Mar.			
▼ cityEHR Feature Demo (10)	Bone Chemistry – Messages							View Current Da	ta 🗸 🔒
Bone Chemistry – Messages	18:45:13 on 21-Sep-1981 - Bone	Chemistry Results							
18:45:13 on 21-Sep-1981 Bone Chemistry Results	Bone Chemistry								
Patient Alerts	Bone Chemistry Sample Date Analyte	Measurement							
Fracture History	21-Sep-1981 CTX 21-Sep-1981 P1NP	0.91							
Medication History	21-Sep-1981 Calcium	2.48							
Diagnosis History	21-Sep-1981 Alkaline phosphatas 21-Sep-1981 Vitamin D	2 84							
Lab Results – Messages	21-Sep-1981 GFR	126							
Registration Event Summary	21-Sep-1981 Creatinine 21-Sep-1981 MDRD	47 180							
Blood Pressure History									
Height, Weight, BMI									
Bone Mineral Density									
cityEHR Version Number - V1.7-2020-07-02-5	User: cityEHR Administrator / cityEHR Feature Demo Logged	on: 09:54:10 on Thursday, 27th Augu	st 2020 Last logged on: 00:52:24 on Thurs	day, 27th August 2021					

Summary View for Bone Chemistry - Messages

2. By default, only the most recent set of bone chemistry results is shown. Use the drop-down menu at the top-right of the pane to select **Historic Data**, displaying the complete history of results for the patient.

ews	Hide Events Summaries Forms Letter	Pathways Care Setting:	cityEHR Feature Demo	 A 100 (100 (100 (100 (100 (100 (100 (100		
cityEHR Feature Demo (10)	Bone Chemistry – Messages					View Historic Data 🗸
lone Chemistry – Messages	00:08:32 on 17-Jul-1998 - Bone	Chemistry Results				
0:08:32 on 17-Jul-1998	Bone Chemistry					
me Chemistry Results	Bone Chemistry					
1:59:30 on 22-Mar-1998	Sample Date Analyte	Measurement				
ne Chemistry Results						
:43:48 on 13-Feb-1998 me Chemistry Results	□ 17-Jul-1998 CTX	0.91				
33.06 on 14-Jan-1998	17-Jul-1998 P1NP	146				
te Chemistry Results	17-Jul-1998 Calcium	2.48				
37:17 on 22-Oct-1997	17-Jul-1998 Alkaline phosphat	ise 84				
te Chemistry Results	17-Jul-1998 Vitamin D	44				
57:31 on 04-May-1997	17-Jul-1998 GFB	126				
1e Chemistry Results						
18:33 on 31-Jan-1997	□ 17-Jul-1998 Creatinine	47				
e Chemistry Results	□ 17.Jul-1998 MDRD	180				
8:02 on 20-Jun-1996 e Chemistry Results						
e Chemistry Results 14:45 on 12-Apr-1996	01:59:30 on 22-Mar-1998 - Bone	Chemistry Results				
e Chemistry Results		onennouy recourts				
4:38 on 24-May-1995	Bone Chemistry					
e Chemistry Results	Bone Chemistry					
52:03 on 15-Apr-1995	Sample Date Analyte	Measurement				
e Chemistry Results	22.Mar.1998 CTX	0.93				
40:01 on 07-Feb-1995	22-Mar-1998 P1NP	90.2				
e Chemistry Results	22-Mar-1998 Alkaline phosphat					
ient Alerts						
	22-Mar-1998 Vitamin D	69				
cture History	22-Mar-1998 GFR	83				
	22-Mar-1998 Creatinine	67				
Sication History	22-Mar-1998 MDRD	119				
gnosis History	19:43:48 on 13-Feb-1998 - Bone	Chemistry Results				
o Results – Messages	Bone Chemistry					
	Bone Chemistry					
gistration Event Summary	Sample Date Analyte	Measurement				
ood Pressure History	13-Feb-1998 Calcium	2.37				

Changing Summary View to "Historic Data"

3. Select two or three analytes (e.g., CTX, P1NP, Calcium) to view on a chart by checking the corresponding boxes. Selecting a box in one result set will also select it across other sets.

FINMORE, Gary (Mr) Bom: 13-Ap Patient Id K8971395 NHS Number 75				Dashboard	Patient Search	Patient Cohorts	i In-Tray	Quit Admin Registration	cit T	-
Views	Hide Events Summaries Forms Letters	Pathways Care Setting	cityEHR Feature Demo 🗸							
▼ cityEHR Feature Demo (10)	A Bone Chemistry – Messages						View Histo	orio Data 🗸 🔊	¢	0
Bone Chemistry – Messages	Selected 3 variable(s) with date range 19	80-02-28 to 1981-09-21								
18:45:13 on 21-Sep-1981 Bone Chemistry Results	18:45:13 on 21-Sep-1981 - Bone Ch	emistry Results								ſ
14:02:10 on 30-Jul-1981	Bone Chemistry									
Bone Chemistry Results	Bone Chemistry									
02:05:32 on 14-Jul-1981	Sample Date Analyte	Measurement								
Bone Chemistry Results	✓ 21-Sep-1981 CTX	0.91								
06:47:31 on 30-Jun-1981										
Bone Chemistry Results	✓ 21-Sep-1981 P1NP	146								
05:41:47 on 23-May-1981	21-Sep-1981 Calcium	2.48								
Bone Chemistry Results 11:08:11 on 06-Mar-1981	21-Sep-1981 Alkaline phosphatas	a 84								
Bone Chemistry Results										
00:57:41 on 23-Jan-1981	21-Sep-1981 Vitamin D	44								
Bone Chemistry Results	21-Sep-1981 GFR	126								
16:29:31 on 12-Oct-1980	21-Sep-1981 Creatinine	47								
Bone Chemistry Results		4/								
09:00:23 on 11-Sep-1980	21-Sep-1981 MDRD	180								
Bone Chemistry Results										
13:40:15 on 16-Apr-1980 Bone Chemistry Results										
01:29:07 on 30-Mar-1980	14:02:10 on 30-Jul-1981 - Bone Che	emistry Résults								
Bone Chemistry Results	Bone Chemistry									
10:09:38 on 28-Feb-1980	Bone Chemistry									
Bone Chemistry Results	Sample Date Analyte	Measurement								
Patient Alerts	✓ 29-Jul-1981 CTX	0.93								
Fracture History	29-Jul-1981 P1NP	90.2								
	29-Jul-1981 Alkaline phosphatase	e 87								
Medication History	29-Jul-1981 Vitamin D	69								
Diagnosis History	29-Jul-1981 GFR	83								
Lab Results – Messages	29-Jul-1981 Creatinine	67								
-	User: cityEHR Administrator / cityEHR Feature Demo Logged on: 01	119 9:54:10 on Thursday, 27th August	2020 Last logged on: 00:52:24 on Thursd	day, 27th August 2020						•

Selecting Analytes to View on Patient Chart

4. As analytes are selected, a summary of the total number and the data range is updated at the top of the pane.

WALTERS, Zak (Mr) Don: 03-Sep Tablent Id K9954501 NHS Number 75			Quit Administratic Dashboard Patient Search: Patient Cohorts In-Tray: Registratic
	Hide Events Summaries Forms Letters	diwaya Care Setting: city(JIR Feature Demo v	
yEHR Feature Demo (10)	Bone Chemistry - Messages		Vew Historic Data v
Chemistry - Messages	Selected 3 variable(s) with date ran	2003-02-27 to 2004-04-13	
2.57 on 13-Apr-2004	23:22:57 on 13-Apr-2004 - Bone	emistry Results	
Chemistry Results 1:53 on Of-Man-2004	Bone Chemistry		
53 on 06-Mar-2004 Chemistry Results	Bone Chemistry		
1:38 on 23-Feb-2004	Sample Date Analyte	Measurement	
Chemistry Results	3-Apr-2904 CTX	0.91	
32 on 13-Feb-2004	13-Apr-2004 PINP	145	
Chemistry Results 208 on 17-Jan-2004	13-Apr-2004 Calcium	2.40	
Chemistry Results	O 13-Apr-2004 Alkaline phosph		
123 on 22-May-2003	13-Apr-2004 Vitamin D	44	
Chemistry Results	13-Apr-2004 GFR	126	
154 on 22-Oct-2003			
Chemistry Results (28 on 10-Aug-2003	 13-Apr-2004 Creatinine 	47	
Chemistry Results	13-Apr-2004 MDRD	100	
156 on 18-Jul-2003			
Chemistry Results	15:18:53 on 06-Mar-2004 - Bone	semistry Results	
29 on 02-Apr-2003 Chemistry Results	Bone Chemistry		
(0) on 21-Mar-2003	Bone Chemistry		
Chemistry Results	Sample Date Analyte	Measurement	
118 on 27-Feb-2003	06-Mar-2004 CTX	0.93	
Chemistry Results	06-Mar-2004 PHNP	90.2	
e Alerta	06-Mar-2004 Alkaline phosph		
	G 06-Mar-2004 Vitamin D	69	
re History	0 06-Mar-2004 GFR	83	
ation History	06-Mar-2004 GFR	67	
osis History	06-Mar-2004 MORD	119	
esuits – Hessages	17:58:38 on 23-Feb-2004 - Bone	semistry Results	
tration Event Summary	Bone Chemistry		
	Bone Chemistry		
Pressure History	Sample Date Analyte	Measurement	
	23-Feb-2004 Calcium	2.37	
t, Weight, BMI	23-Feb-2004 Alkaline phosph	se 80	
Mineral Density	23-Feb-2004 GFR	109	
and a censely	23-Feb-2004 Creatinine	81	
	23-Feb-2004 MORD	953	

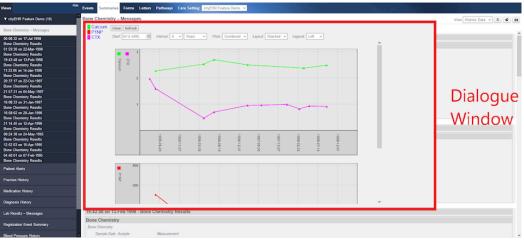
Summary of Analytes Selected and Overall Data Range Covered

5. Select the **Chart** button, now visible at the top-right of the pane, to generate a chart for the selected analytes.

Views	Hide Events Summaries Forms Lett	ers Pathways Care Set	ctyEHR Feature Demo. 🛩
▼ cityEHR Feature Demo (10)	Bone Chemistry – Messages		View Historic Data 👻 🕭 🖉 🖨
Bone Chemistry – Messages	Selected 3 variable(s) with date ran	nge 1995-02-07 to 1998-07-17	· · · · · · · · · · · · · · · · · · ·
00:08:32 on 17-Jul-1998	00:08:32 on 17-Jul-1998 - Bor	ne Chemistry Results	1
Bone Chemistry Results	Bone Chemistry		
01:59:30 on 22-Mar-1998 Bone Chemistry Results	Bone Chemistry		
19:43:48 on 13-Feb-1998	Sample Date Analyte	Measurement	Chart Button
Bone Chemistry Results	✓ 17.Jul-1998 CTX	0.91	Chart Button
11:33:05 on 14-Jan-1998	17-Jul-1998 P1NP	146	
Bone Chemistry Results			
20:37:17 on 22-Oct-1997	☑ 17-Jul-1998 Calcium	2.48	
Bone Chemistry Results	17-Jul-1998 Alkaline phosph	atase 84	
21.57.31 on 04-May-1997	17-Jul-1998 Vitamin D	44	
Bone Chemistry Results 16:08:33 on 31-Jan-1997	17.Jul-1998 GFR	126	
Bone Chemistry Results	17-Jul-1998 Creatinine	47	
16:58:02 on 20-Jun-1996	17.Jul-1998 MDRD	180	
Bone Chemistry Results			
21:14:45 on 12-Apr-1996			
Bone Chemistry Results	01:59:30 on 22-Mar-1998 - Bo	ne Chemistry Results	
00.24.38 on 24-May-1995	Bone Chemistry		
Bone Chemistry Results 12:52:03 on 15-Apr-1995	Bone Chemistry		
Bone Chemistry Results	Sample Date Analyte	Maanurement	
04:40 01 on 07-Feb-1995	22.Mar.1998 CTX	0.93	
Bone Chemistry Results	22-Mar-1998 P1NP	90.2	
Patient Alerts	22-Mar-1998 Alkaline phospl		
	22-Mar-1998 Vitamin D	69	
Fracture History	22-Mar-1998 GFR	83	
Medication History	22-Mar-1998 Creatinine	67	
Diagnosis History	22-Mar-1998 MDRD	119	
Lab Results - Messages	19:43:48 on 13-Feb-1998 - Bo	ne Chemistry Results	
	Bone Chemistry		
Registration Event Summary	Bone Chemistry		
Blood Pressure History	Sample Date Analyte	Measurement	According WW L Law based on 19 Web Websedon NB Passadon WY

Using Chart Button to Commit Analytes for Chart View

6. On pressing the Chart button, a dialogue window will appear showing the charts for the selected analytes. Adjust the chart parameters using the options at the top of the dialogue.



Dialogue Window with Charts of the Analytes Selected

7. When finished, press the **Close** button at the top of the dialogue to dismiss the window.

WALTERS, Zak (Mr) Jorn 03-Sep-1906	i (DS years) Gender: Male	Quit Administration city
Patient Id K9954501 NHS Number 7563628	8274 🛕	Dashboard Patient Search Patient Cohorts In-Tray Registration
Vevs	* Eventa Summers Forms Letters Pathways Care Setting: CityUR Feature Demo 🗸	
▼ cityEHR Feature Demo (10)	Bone Chemistry – Messages	View Historic Data 🔹 5 0 🖨
Bone Chemistry - Messages	Selected 3 variable(s) with date range 2003-02-37 to 2004-04-13	
2322:57 on 13-Apr-2004	23:22:57 on 13:Apr-2004 - Bone Chemistry Results	Â
Bone Chemistry Results 15:18:53 on 06-Mar-2004	Bone Chemistry	
Bone Chemistry Results	Bose Chemistry	
17.58:38 on 23-Feb-2004	Sample Date Analyte MORD Cover afresh	
Bone Chemistry Results	13 Apr-2004 CTX Varmin C Sect 12 -2003 III Interval: 14 v Months v Potr Combined v Layout Stacked v Legend Left v	
19:13:32 on 13-Feb-2004 Bone Chemistry Results	O 13 Apr 2004 PHP	
09:12:08 on 17-Jan-2004	13 Apr.2004 Calcium	
Bone Chemistry Results	O 13.Apr.2004 Alkaline phose 200	
08:02:23 on 22-Nov-2003 Bone Chemistry Results	1 13.4pr-2004 (Viewin D)	
18:18:54 on 22-0ct-2003	0 13.Apr.2004 GFR 8	
Bone Chemistry Results	0 13Apr.2004 Creatinine	
00.03/28 on 10-Aug-2003 Bone Chemistry Results	9 13.Apr-2004 MOND	
10:29:56 on 18-Jul-2003	100	
Bone Chemistry Results 22:08:29 on 02-Apr-2003	15:18:53 on 06 Mar 2004 - Box	
Bone Chemistry Results	Bone Chemistry	
07:18:03 on 21-Mar-2003	Bore Chemistry	
Bone Chemistry Results	Sample Date Analyte	
05/23:18 on 27-Feb-2003 Bone Chemistry Results	6 06-Mar-2004 CTX	
	0.05.Mar.2004. P1NP	
Patient Alerts	06-Mar-2004 Alkaline phose 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Fracture Halory	■ 06-Mar.2004 Vitamia D 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
	0 05 Mar.2004 GFR	
Medication History	O 66 Mar-2004 Creatinine	
Diagnosis History	\$ 06 Mar 2004 MDRD \$ 00	
Lab Results - Hossages	17:58:38 on 23 Feb 2004 Box	
Registration Event Summary	Bone Chemistry 00	
Blood Pressure History	Sample Date Analyte	
Height, Weight, BMI	23/Peb-2004 Calcium 2.37	
wednet mediate parts	23-Feb-2004 Alkaline phosphatase 80	
Bone Mineral Density	23-Feb-2004 GFR 109	
	23/Peb-2004 Creatinine 51	
	23/Peb-2904 MDRD 153	

Dismissing the Dialogue Window Using the Close Button

Viewing the Longitudinal Record

To view all events recorded for a patient, navigate to the **Events** tab at the top of the viewing pane.

Markadowa And along a long a	$\leftarrow \ \rightarrow \ {\tt G}$	🔘 🗅 🕫 localhost:8080/cityehr/ehr/latyEHRFolder-Events/?userId=admin&sessionId=53b36f97bd7117b20b960cb1f3722052	80% රූ ව □
Markadowa And along a long a			server and the server
Abde 2021 Training Abde 20	Events Annotations His	Eventis Summaries Forms Letters Pathways Care Setting: cityCHR Feature Demo 🗸	Show
Addamanda Addamanda <t< td=""><td>▼ All Events (35)</td><td>15-Dec-2021 - Treatment Recommendations</td><td></td></t<>	▼ All Events (35)	15-Dec-2021 - Treatment Recommendations	
Schwarzenskiewer Image: Schwarzenskiewer	15-Dec-2021 Treatment Recommendations		^
Junit Image: Image	Anti-Osteoporosis Therapy Recommendations Falls Risk Intervention Recommendations and Referrals	Medication Name Dose Resonanced Duration Alendarchate 3 Years Supplement Recommendations	
About Description In a reade Balance D	Outcome Information		
Sub 2005 Leging In demonsion	Follow-Up		
Sub 2005 Mode Maak Soot NOL Sub 1 Sub 2005 Mode Mode Mode Mode Mode Mode Mode Mode	30-Jul-2005 Allergies and Warnings 29-Jul-2005 Lifestyle	No data recorded.	
Sub 2006 diversion of a loss	29-Jul-2005 Body Mass Index	NOS Leaflet false	
Code 20 de la	29-Jul-2005 Medication	Alcohol Moderation false	
Skul 2003 faller Ragiutation Faller Lip Skul 2003 faller Ragiutation and the Ragiutation and the Ragiutation of Skul 2003 faller Skul 2004 faller Ragiutation and Ragiut	29-Jul-2005 Hospital Anxiety and Depression Scale	Dietary Calcium Leaflet false	
DAX Deferration DAX Referration In the index selection The index selection Schwoodd (Maxwoodd (Ma	29-Jul-2005 Patient Registration	Follow-Up	
Is fail fair generalised as cond DAA Sool ³ table Berlay-2004 DAG 200 Fair and a re-inferration of DAA Sool ³ table Fair	02-Feb-2005 Lifestyle	DXA Referral	
Bit Alay-2004 DAG 200 1 Alay-2004 DAG Factors 1 Alay-2004 DAG External Y 1 Alay-2004 DAG External Y 0 Alay-2004 DAG External Y	28-Jan-2005 Lifestyle 12-May-2004 Lifestyle	Is this the patient's second DXA Scan? false	
Pi Jaky-2004 Bak Fadaran Pi Jaky-2004 Madalaran Di Jaky 2004 Usor Chematry Results Bi Jaky 2004 Usor Chematry Results	08-May-2004 DAS 28		
51-Lisy-2004 Medications 13-Apr/2004 Bons Chemistry Results 05-Apr/2004 Unive Chemistry Results	01-May-2004 BMD Data		
13-Apr/2004 Box Chemistry Results (3-Apr/2004 Laboratory Treat Results 00 Mar/2004 Box Chemistry Results			
13 Apr/2004 Laboratory Test Results Bio-Mar/2004 Date Chemistry Results	01-May-2004 Medications		
50 Mar 2004 Done Chemistry Results	13-Apr-2004 Bone Chemistry Results		
	23-Feb-2004 Bone Chemistry Results		

Viewing all the Events in the Patient Record

- 1. The left-hand panel displays a list of all recorded events. Details of the most recent event are shown in the main viewing pane.
- 2. Select any historic event from the list to display its details in the main viewing pane.

Annotations and Notifications

The **Events** page provides access to the full longitudinal record. While cityEHR prevents modifications to committed (published) events, users can add annotations to enhance or provide context to existing entries.

 Select a historic event, such as a Hospital Anxiety and Depression Scale (HADS) assessment, to annotate.

Events	Events Summaries Forms Letters Pathways Care-Setting: ctyEHR	R Feature Diemo 👻	Show
► All Events (34)	25-Jun-2002 - Hospital Anxiety and Depression Scale		
► Bone Chemistry Results (12)	Anviety Score 16 Severe		^
Laboratory Test Results (9)	Depression Score 13 Moderate I feel fense or wound up'	Most of the time	
 Medications (1) 	I still enjoy the things I used to	Definitely as much	
 Patient Registration (1) 	I get a sort of frightened feeling as if something awful is about to happen I can laugh and see the funny side of things	Very definitely and quite badly As much as I always could	
 Allergies and Warnings (1) 	Worrying thoughts go through my mind I feel cheerful	A great deal of the time Not at all	
► BMD Data (1)	I can sit at ease and feel relaxed I feel as if I am alowed down	Not often Nearly all the time	
► Lifestyle (4)	I get a sort of frightened feeling like 'butterflies' in the stomach I have lost interest in my appearance	Quite often	
Risk Factors (1)	I feel restless as if I have to be on the move	Definitely Not very much	
▼ Hospital Arroiety and Depression Scale (1)	I look forward with enjoyment to things I get sudden feelings of panic	Definitely less than I used to Quite often	
25-Jun-2002 Hospital Anxiety and Depression Scale	I can enjoy a good book or radio or TV program	Not often	
► DAS 28 (1)	Hospital Anixety and Depression Scale = HADS		
 Medication (1) 			
 Body Mass Index (1) 			

Selecting a Historical Hospital Anxiety and Depression Scale Form for Annotations

- 2. Click the small **Flag** button at the top-right of the record view. This will display the annotations for this event.
- 3. Click the '+' button at the top-left to create a new annotation.

Events Hide	Events Summaries Forms Letters Pathways Care Setting: cayEH	R Feature Demo 🖌	Show
► All Events (34)	25-Jun-2002 - Hospital Anxiety and Depression Scale		3 8 8
► Bone Chemistry Results (12)	No annotations recorded - click to add.		
Laboratory Test Results (9)	Anxiety Score 16 Severe		
Medications (1)	Depression Score 13 Moderate		
Patient Registration (1)	I feel tense or 'wound up' I shill enjoy the things I used to	Most of the time Definitely as much	
 Allergies and Warnings (1) 	I get a sort of frightened feeling as if something awful is about to happen I can laugh and see the furny side of things	Very definitely and quite badly As much as I always could	Click Flag Button
BMD Data (1)	Worrying thoughts go through my mind I feel cheerful	A great deal of the time Not at all	Click hay button
► Lifestyle (4)	I can sit at ease and feel relaxed I feel as if I am slowed down	Not often Nearly all the time	to Annotate
 Risk Factors (1) 	I get a sort of frightened feeling like 'butterflies' in the stomach	Quite often	to Annotate
Hospital Arosiety and Depression Scale (1) 25-Jun-2012 Hospital Arosiety and Depression	I have lost interest in my appearance I feel restless as if I have to be on the move I look forward with enjoyment to things	Definitely Not very much Definitely less than I used to	
Scale DAS 28 (1)	I get sudden feelings of panic I can enjoy a good book or radio or TV program	Quite often Not often	
Medication (1)			
► Body Mass Index (1)			

Clicking Flag and '+' Buttons to Annotate

4. Enter the **Type** and **Comments** for the annotation, then press **Save** in the topright menu to commit the annotation.

FINMORE, Gary (Mr) Born: 13-Apr-1957 Patient Id K8971395 NHS Number 7563628		-
Events	Events Summaries Forms Letters Pathways Care Setting: cityEHR Feature Demo 🗸	Show
▼ All Events (34)	08-Jul-1983 - Hospital Anxiety and Depression Scale	2
08-Jul-1983 Allergies and Warnings	Click to add new annotation Created Type Comments Date Action Notify Effective Tim	ie
08-Jul-1983 Lifestyle	X 10:16:09 on 27-Aug-2020 Alert V This patient has a high level of anxiety I No notification V 27-8-2020 I	
08-Jul-1983 Body Mass Index		
08-Jul-1983 Medication	Anviety Score 16 Severe	^
08-Jul-1983 Hospital Anxiety and Depression Scale	Depression Score 13 Moderate I feel tense or 'wound up' Most of the time	
08-Jul-1983 Patient Registration	I still enjoy the things I used to Definitely as much I get a sort of frightened feeling as if something awful is about to happen Very definitely and quite badly	
04-Nov-1982 Lifestyle	I can laugh and see the funny side of things As much as I always could Worrying thoughts go through my mind A great deal of the time	
28-Oct-1982 Lifestyle	I feel cheerful Not at all I can sit at ease and feel relaxed Not refere Not refere	
31-Oct-1981 Lifestyle	I can sit at ease and feel relaxed Not often I feel as if I am slowed down Nearly all the time	
25-Oct-1961 DAS 28	I get a sort of frightened feeling like 'butterflies' in the stomach Quite often I have lost interest in my appearance Definitely	
15-Oct-1981 BMD Data	I feel restless as if I have to be on the move Not very much I look forward with enjoyment to things Definitely less than I used to	
15-Oct-1981 Risk Factors	I look forward with enigment to things Definitely less than I used to I get sudden feelings of panic C un enigy a good book or radio or TV program Not often	
15-Oct-1981 Medications		4
21-Sep-1981 Bone Chemistry Results		
21-Sep-1981 Laboratory Test Results		
30-Jul-1981 Bone Chemistry Results		
14-Jul-1981 Bone Chemistry Results ctytHR Veston Number - V1.72020-07-02-5 User: ct	R Administrator / ch_0HR Peature Demo Logged on: 05.54.10 on Thursdey, 27th August 2000 Less logged on: 05.52.24 on Thursdey, 27th August 2000	~

Annotating a Hospital Anxiety and Depression Scale Form

- 5. The saved annotation is stored as a new event in the patient record, linked to the original annotated event.
- 6. Annotations can also serve as notifications for other clinical users regarding specific events in the patient record.
- 7. To notify a user, create a new annotation and use the **Action** drop-down menu to select the intended user(s).
- 8. For fresh cityEHR installations, with only an administrator user, select **Notify Role** as the action and choose **Administrator** from the drop-down.

Events	Events Summaries Forms Letters Pathways Care Setting:	cityEHR Feature Demo 👻	Show
► All Events (34)	25-Jun-2002 - Hospital Anxiety and Depression Scale		
Bone Chemistry Results (12)	Click to add new annotation		
Laboratory Test Results (9)	Created Type X 13:24:05 on 08-Dec-2021 Alert	Comments Date Action Notify This patient has a Moderate Level of Depression 07-12-2021 R Notify Role Administrator Administrator	Effective Time
► Medications (1)	13.23.35 on 08.Dec2021 Alert	This patient has a High level of anxiety 2021-12-07	2021-12-08Z
► Patient Registration (1)		This particle has a registrever or advecty post of Article VI	EVE IT 12 YOL
 Allergies and Warnings (1) 	Anxiety Score 16 Sevene Depression Score 13 Moderate		Î
BMD Data (1)	I feel tense or 'wound up'	Most of the time	
► Lifestyle (4)	I still enjoy the things I used to I get a sort of frightened feeling as if something awful is about to happen	Definitely as much Verv definitely and quite badly	
 Risk Factors (1) 	I can laugh and see the funny side of things Wonying thoughts go through my mind	As much as I always could A great deal of the time	
▼ Hospital Anxiety and Depression Scale (1)	I feel cheerful	Not at all	
25-Jun-2002 Hospital Anxiety and Depression	I can sit at ease and feel relaxed I feel as if I am slowed down	Not often Nearly all the time	
Scale	I get a sort of frightened feeling like 'butterflies' in the stomach	Quite often	
► DAS 28 (1)	I have lost interest in my appearance	Definitely	
	I feel restless as if I have to be on the move	Not very much	
 Medication (1) 	I look forward with enjoyment to things I get sudden feelings of panic	Definitely less than I used to Quite often	
Body Mass Index (1)	I get sudden reeings of panic I can enjoy a good book or radio or TV program	Quite offen Not often	

Notifying Administrator Using Annotations

9. Complete the notification details and press **Save** to commit the annotation. The notified user will receive a message in their **InTray**, which is covered in a later section of this guide.

Cohort Search

The cohort search facility allows you to:

- Make cross-patient searches on any entry/element in the information model.
- Combine cohorts returned from individual searches.
- Save searches and patient cohorts.
- Reload searches and cohorts that have been saved previously.
- View and print cohort lists.
- Export patient data for a cohort.

To run cohort searches, press the **Patient Cohorts** button in the main cityEHR navigation panel (available at the top of every page).

$\leftarrow \rightarrow G$	🗘 🗋 👼 localhost/8080/cityehr/ehr/cityEHRCohortSearch/?userId=admin&sessionId=1a2c0cb66378e9d914a230c52b6b3e90			80% 🗘		⊚ ≡
		Dashboard	Patient Search	Patient Cohorts	Quit Administration n-Tray Registration	
My Searches Shared Searches	Nos Search Colour					
	Cohort Search				Specialty Elfn 2	~
	New term v Select Search Type v			T		
	All None Ref 1 Search Term				Coho	vt (0)
			Cli	ck this		
otyEHR Version Number - V1.7-2021-12-08-1 Use	er: ohyEMR Administrator / Elfin 2 / en-gb Logged on: 09 23 19 Thursday, 9th December 2921 Last logged on: 09 20 56 Thursday, 9th December 2021					

Running Patient Cohort Searches

The sections below demonstrate cohort search features using a small test database (e.g., the data generated in the "Generate Test Data" section).

Demographics

- 1. Navigate to **Patient Cohorts** in the in the system navigation.
- 2. To search for cohorts based on patient demographics, select **Demographics** (default on page load) from the left-hand search type selection.

My Searches	Shared Searches	Me Search Colort	
		Cohort Search	Specialty cityEHR Feature Demo 🗸 🔍
		Bitestem Description Description Gender V Male v Scope Al data v	
		All News Ref 11 Search Yerm	Cohort (0)

Searching for Cohorts Using Demographics

3. Select to search on **Gender**, **Date of Birth**, or **Age**. Enter search criteria and press the **Search** button to display a summary of the cohort found.



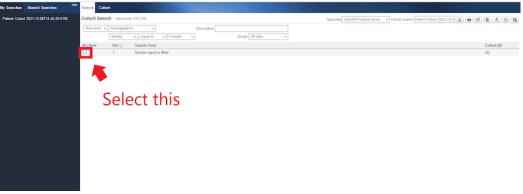
Searching for Patients Using Gender as a Demographic

4. View the Cohort Results in the display window.

My Searches Shared Searches Hide	Search Cohort	
Patient Cohort 2021-12-08T14-45-29.019Z	Cohort Search : Search Sime: PT0.3185	Specialty ctyEHR Feature Demo 🔹 Cohort search Patient Cohort 2021-12-(😨 🖨 🖄 🐌 🗘 🔍
	New term Demographics V Description Gender v equal to v Scope [Al data v	
	AIT Now Ref 1: Search Form 1 Gender equal to Male	Cohor (i) (i)
	Cohort Search Results	Number of Patients Returned

Viewing Cohort Results in the Display Window

5. Select the check-box next to the **Cohort Search Results**.



Selecting the Box Next to the Cohort Search Results

6. Navigate to the **Cohort** tab (next to the **Search** tab). You can now view the patients in this cohort (see figure below).

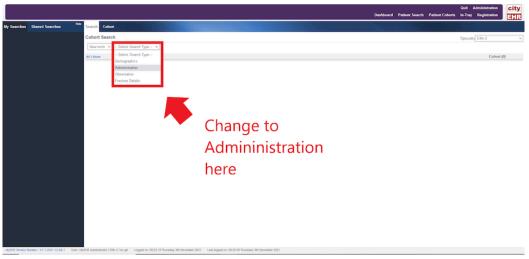
Displaying 1 to 2 of 2 patients	1. Navigate here			Cohort search Patient Cohort 2		
Patient Id	Sumame	Forename	Gender	Date of Birth	Age	
K5310150	Hobson	Brian	Male	29-Mar-1957	64	
38703301	Gibson	Howard	Male	17-Mar-1976	45	
	T					
2.1	View Results here					

Viewing Patients in Selected Cohort

7. You can now print or export this list. Refer to further sections for printing instructions and exporting data.

Administrative Data

1. Select **Administration** from the left-hand search selection menu to search for cohorts based on the effective time or author of specific compositions.



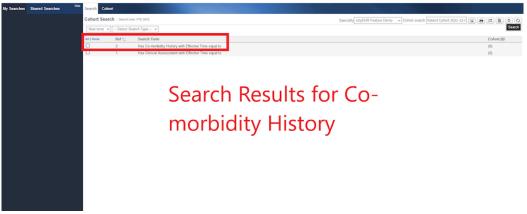
Searching for Cohorts Using Administration

2. The cohort is formed as patients who have any compositions of the specified type with the author or effective time as constrained by the search criteria. If no context is chosen then the cohort is formed based on any composition e.g. find all patients with any compositions committed by a specific author (user). Select the search criteria to be **author** and select any option from the context drop-down (see figure below).

		Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Registration
arches Shared Searches	MA Seath Color	
	Dauktoord Palient Samh Palient Coloris is Sny Registration	
	New term v Adaption v Description	
	All I Nume Auf 1 Search Tarm	Cohort (0)
		(2)
	Channe this draw list from "Effective Time" to "Author"	
	Change and only-some non-crective time to yourse Select any Context	

Searching for Cohorts Using "Author" as Search Criteria

3. Click the **Search** button (magnifying glass) to return results.



Search Results for Co-morbidity History

4. Select the check-box next to the **Patient List**.

					Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Registration
Wy Searches Shared Searches	How Search Cohort			Second	
	Cohort Search	h : Search See: P70.000	13	Specially cityEHR Feature Demo	
	New term	Administration Author			
	Al None	Reft	Search Term		Cohort (II)
	0	2	Has Fracture Record with Author equal to chyDHR Administrator		(2)
	0	2	Has Lifestyle Assessment with Author equal to ctyEIR Administrator Has Fracture Record with Author equal to ctyEIR Administrator		(1) (2)
	Click o	ne of thes	e boxes. Ideally select one that returns several patients		This cohort contains two patients

Clicking on Empty Box of New Patient List

5. Navigate to the **Cohort** tab to view a list of patients from your search results.

Observations

1. Set the search term to **Observation**. Adjust the parameters to refine your cohort searches for specific observations. Ensure you click **Search** to display the results.

My Searches Shared Searches	Me Search Cohort	
	Cohort Search	Specialty cityEHR Feature Demo 🗸 🔍
	New term v Observation v Description	
	Effective ime Any time V Fracture V Patient age Any age V	
	Scope All data	
	Current v equal to v Yes v Tes Context Stored Records v Any context v	
	MI None Ref 1 Search Term	Cohort (0)

Changing Cohort Search Term to Observation

2. In this example, the **Observation** is set to "Fracture," with **time** set to *Current* and **Scope** set to *All Data*. Review the search results, as shown in the figure below.

My Searches Shared Searches	Hde Search Cohort							
	Cohort Search : Search time	PT0 6025		Specialty cityEHR Feature Demo v	Cohort search Patient Cohort 2021-12-(
	tiew term v - Select Seatch Type - v							
	W[None Ref †]	Search Term Fracture Current equal to Yes				Cohort (0)		
		Fracture Current equal to Tes				(0)		

Cohort Search Results for "Observation" as Fracture

3. If no results are returned for the observation, modify the search parameters to explore different results.

Combining Cohorts

The cohort search functionality enables you to combine multiple searches. Follow the steps below to learn how to combine cohorts:

1. Conduct the individual cohort searches you wish to combine. For example, searches for **Gender equal to Female** and **Gender equal to Male**, as shown in the figure below.

Ny Searches Shared Searches	Hide Search Coh	art			
Patient Cohort 2021-12-08T14-45-29.019Z	Cohort Sear	ch : Search S	er PT0.3065	Specially cityEHR Feature Demo 🗸 Cohort search Pabent Cohort 2021-12-(
	New term 🗸	- Select S	arch Type – 👻		Search
	All None	Ref 1	Search Term		Cohort (0)
		2	Gender equal to Female		(6)
		1	Gender equal to Male		(2)

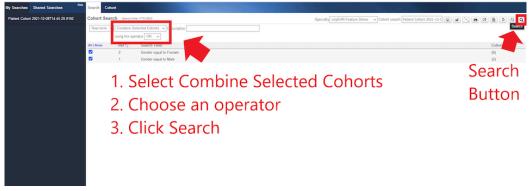
Two Cohort Searches (Female and Male Demographics) for Combining

2. Select the cohorts to be combined by checking their respective boxes.

Search Cohort	
Cohort Search : Search time: PT0.3885	Specially cityEHR Feature Demo 🔹 Cohort search Patient Cohort 2021-12-1 😨 🖬 🧤 🖨 🛍 🗴 🖉
New term v - Select Search Type - v	Search
Ref 11 Search Term	Cohort (8)
2 Gender equal to Fernale	(6)
1 Gender equal to Mate	(2)
Select Lists that you want to combine	
	Cooled Search Search Search Type =

Selecting Cohorts to Combine

- 3. From the **Select Search Type** menu, choose **Combine Selected Cohorts**, select an operator, and click **Search**. You may also select **Combine Cohorts**. Available operators include:
 - **AND**: Returns members common to both cohorts.
 - **OR**: Returns all members from both cohorts.
 - **A PERCENTAGE OF**: Finds members of cohort A that are also in cohort B and calculates the percentage.



Choosing an Operator to Combine Cohorts

4. View the combined results in the display window, select them, and save the cohort search for future use.

My Searches	Shared Searches Hide	Search Coho	et 🕹				
Patient Coho	Patient Cohort 2021-12-08T14:45:29.019Z	Cohort Searc	h : Search Se	e: PT0.0165	Specialty cityEHR Feature Demo	Cohort search Patient Cohort 2021-12-0	
		New term 🗸	- Select Se	arch Type 🗸			Search
		All None	Ref 🔃	Search Term			Cohort (8)
		•	3	(Gender equal to Female) OR (Gender equal to Male)			(8)
			2	Gender equal to Female			(6)
			1	Gender equal to Male			(2)

Combined Cohort Results

5. Navigate to the **Cohort** tab to view the combined cohort list. To print this list, click the printer icon in the top-right corner.

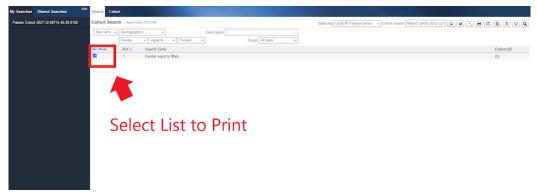
rts Shared Cohorts	Hide Search Cohort			A CONTRACTOR OF THE		
	Cohort Search : Search to	ne: PT0.0165			Cohort search Patier	it Cohort 2021-12-1 🖫 🖬 🥍 😝
	Displaying 1 to 8 of 8 patients					54
	Patient Id	Sumame	Forename	Gender	Date of Birth	Age
	K4954485	Borras	Amber	Female	19-Oct-1944	77
	K5454519	Littlemore	Jame	Female	13-Nov-1966	55
	K9953545	Borras	Angela	Female	28-Oct-1944	77
	K9810298	Needham	Helen	Female	25-Oct-1972	49
	K1021025	Fellows	Nina	Female	16-Dec-1952	68
	K4948505	Neale	Nina	Female	30-Mar-1973	48
	K5310150	Hobson	Brian	Male	29-Mar-1957	64
	38703301	Gibson	Howard	Male	17-Mar-1976	45

Printing Combined Cohort Results List

Printing Cohort Lists

Follow these steps to print cohort lists:

1. Select the cohort list(s) you want to print from the search results.



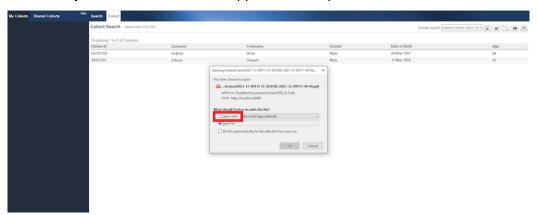
Selecting the Cohort List(s) for Printing

2. Navigate to the **Cohort** tab and click the print icon.



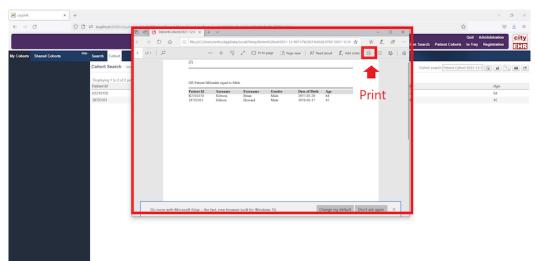
Printing the Selected Cohort List(s)

3. Choose **Open File** and select the application to open the cohort list.



Opening Cohort Lists in Desired Application

4. Print the cohort list from the selected application.



Confirmation of the Cohort List(s) Print

Exporting Patient Data from cityEHR

Patient data can be exported in a number of different formats for individual patients or for cohorts of patients found through the cohort search facility.

Exporting Data for an Individual Patient

1. The full record for an individual patient can be exported from the patient Events page. Click on a patient in Patient Search for whom you would like to export their record.

Recent Care Team						
96325737 - Winston	Patient Search K: Search Sine: PT0.7335/PT0.41	85				Order by Hospital Number 🗸 🔍 S
	Patient Id N Sumame	Forename				
	Gender - Select Value - v					
	Day of Birth - Select Value - V Month	- Select Value - V Year	Date			
	Consultant					
		ge 1 of 2 🕨 🕨				
	Patient Id	Sumame	Forename	Gender	Date of Birth	
	K9954501	Walters	Zak	Male	03-Sep-1986	
	K9897575 K9757100	Borras	Angela	Female	15-Nov-1944 15-Nov-1944	
	K9767100 K9749102	Borras	Hiary Wallace	Female Male	15-Nov-1944 15-Nov-1972	
	K5654509	Woods	Alfred	Male	15-N0/-1972 11-Sep-1987	
	K5550102	Trimble	Sigmund	Male	23-Jun-1982	
	K5499100	Grant	Corey	Male	15-Jan-1953	
	K5497515	Walters	Amber	Female	12-Jul-1986	
	K5453100	Neale	Heston	Male	08-Mar-1973	
	K5397545	Collymore	Bridget	Female	23-Apr-1946	
	Soloci	: a Patien [.]	+			
		. а ганен	L			

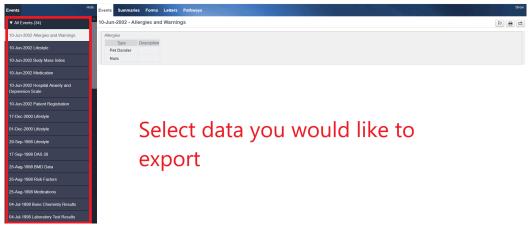
Selecting a Patient for Record Export

2. Navigate from the **Summaries** page to the **Events** page.

Events	⁵ Events Summaries Forms Letters Pathways	Show
▼ All Events (34)	10-Jun-2002 - Allergies and Warnings	
10-Jun-2002 Allergies and Warnings	Allergies	
10-Jun-2002 Lifestyle	Type Pet Danker	
10-Jun-2002 Body Mass Index	1. Navigate to Events Page	
10-Jun-2002 Medication	1. Navigate to Events Page	
10-Jun-2002 Hospital Anxiety and Depression Scale		
10-Jun-2002 Patient Registration		
17-Dec-2000 Lifestyle		
01-Dec-2000 Lifestyle		
29-Sep-1998 Lifestyle		
17-Sep-1998 DAS 28		
25-Aug-1998 BMD Data		
25-Aug-1998 Risk Factors		
25-Aug-1998 Medications		
04-Jul-1998 Bone Chemistry Results		
04-Jul-1998 Laboratory Test Results		

Navigating to Patient Events Page

3. Select the event you would like to export.





4. Click the **Export Record** icon to export the individual patient data.

$\leftarrow \ \rightarrow \ G$	◯ 🗋 🕫 localh	host:8080/cityehr/ehr/c	sityEHRFolder-Ever	ts/?userId=admin&sessionId=bfaceb43a053e6c569d376608ffb8c89	80% Å 🖂 🖉 🌢 🗏
BORRAS, Angela (Ms) Born 15 Patient id K9097675 MHS Number		Female			Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Registration
vents Annotations	Hide Events Summaries	Forms Letters Pathwa	iys Care Setting:	ityENR Feature Demo V	8 8
▼ All Events (35)	04-Apr-2022 - Life	style Assessment			9 8 a
04-Apr-2022 Lifestyle Assessment	Of event: 04-Apr-2	2022 Lifestyle Assessm	ient		
Lifestyle	Lifestyle				
Lifestyle Scale Questionnaire	Level Of Mobil Walking for a gas		some diff	Smoking Habits Smoking Habits Exampler	
Body Mass Index 10-Jun-2002 Allergies and Warnings	Stooping, crouchi Doing chores aro		some diff some diff	culty	· · · · · · · · · · · · · · · · · · ·
	Lifestyle Scale	Questionnaire			
10-Jun-2002 Body Wass Index	Lifestyle Questions I eat five portio	a ons of fruit and vegetable	sperday Nota	plicable	Click Export
10-Jun-2002 Medication		hours sleep each night 30 mins twice or more ea		plicable plicable	-
10-Jun-2002 Hospital Aroviety and Depresaion Scale	I drink modera	au mins twice or more ea ate amounts of alcohol ie truth in lifestyle questic	Not a	picable picable	Record icon (4th
10-Jun-2002 Patient Registration	Body Mass Inde	x			
17-Dec-2000 Lifestyle	Body Mass Index Measurement date	BI	MI Interpretation		icon from the
01-Dec-2000 Lifestyle	10-Jun-2002	Height 173 cm Weight 87 kg			
29-Sep-1998 Lifestyle	13-Sep-2001	Height 173 cm			1.60
17-Sep-1998 DAS 28	01-Dec-2000	Weight 82.kg Height 173.cm			left)
25-Aug-1998 BMD Data		Weight 85 kg			
25-Aug-1998 Risk Factors					
25-Aug-1990 Hedications					
94-Jul-1998 Bone Chemistry Results					
04-Jul-1993 Laboratory Test Results					
09-Mar-1996 Bone Chemistry Results	•				
01-Feb-1996 Bone Chemistry Results	·				
01-Feb-1956 Laboratory Test Results					
02-Jan-1998 Bone Chemistry Results					
10-Oct-1997 Bone Chemistry Results					
10-May-1997 Laboratory Test Result	• 🗸				
0 1 <i>1</i>			-		
Selectina	Patient	Event to	o Exp	DIT	



Data can be exported in various formats for patient cohorts created through cohort searches.

- 1. Navigate to the **Administration** screen in the Purple system navigation.
- 2. Navigate to **Cohort Searches** in the menu on the left side of the screen, and then click **Manage Cohort Searches**.

	cityEHR - Administration - Manage Cohort Searches	Stow
► System	User: cityEHR Administrator (admin) V Cohort type: All V	Role: Administrator
► Database	Patient 2021-12-08T14.45.29.019Z	Patient Cohort 2021-12-08T14:45:29.019Z
► Information Model		
► Directory		
Users and Care Teams		
► Knowledge Sources		
► Patient Records		
▼ Cohort Searches		
Manage Cohort Searches		
Import Cohort Search		
► Export Data Sets		
Redirect Notifications		
Manage Patient Access		
Test Web Service		

Manage Cohort Searches Page

- 3. View your saved cohort searches in the main display screen.
- 4. Select the box next to the cohort search you wish to export.

	eityEHR - Administration - Manage Cohort Searches	
► System	User: cityEHR Administrator (admin) V Cohort type: All V	Role: Administrator v
► Database	Patient Cohort 2021-12-08T14:45:29.019Z	Patient Cohort 2021-12-08714-45-29.0192
 Information Model 		
► Directory		↑
Users and Care Teams		
Knowledge Sources		Click this
 Patient Records 		CIICK LITIS
▼ Cohort Searches		
Manage Cohort Searches		
Import Cohort Search		
 Export Data Sets 		
Redirect Notifications		
Manage Patient Access		
Test Web Service		

Selecting Desired Cohort Search for Export

5. Click the **Export** button that appears at the top right of your screen.

Md	cityEHR - Administration - Manage Cohort Searches	Show .
► System		
► Database	User: CityEHR Administrator (admin) v Cohort type: All v	Role: Administrator V
 Information Model 	Patient Cohort 2021-12-08T14:45:29.0192	Patient Cohort 2021-12-08T14-45-29.019Z
► Directory		Clickto
► Users and Care Teams		Click to
► Knowledge Sources		Export
Patient Records		Export
▼ Cohort Searches		
Manage Cohort Searches		
Import Cohort Search		
Export Data Sets		
Redirect Notifications		
My User Account		
Manage Patient Access		
Test Web Senice		

Exporting Desired Cohort Search

6. A dialogue box will appear. Save your exported file or open it with a default application.

			Dashboard Patient Search	Patient Cohorts	Quit Administration In-Tray Registration	city Effi
	ettyEHR - Administration - Manage Cohort Searches		and the second second			Show
► System						T CC
► Database	User: cityEHR Administrator (admin) V Cohort type: All V	Role	e: Administrator v			
► Information Model	Patient Cohort 2021-12-08T14.45:29.019Z		Patient Cohort 2021-12-08T14 45:29.0	119Z		
► Directory						
► Users and Care Teams	Opening cohort5earches-2021-12-101	11-37-39.zp ×				
Knowledge Sources	You have chosen to open:					
► Patient Records	cohortSearches-2021-12-10 which is: Compressed (typed from: http://ca.aboxt000					
▼ Cohort Searches	What should Firefox do with this fi					
Manage Cohort Searches	Qpen with Windows Explore					
Import Cohort Search	Save File Do this automatically for files					
Export Data Sets	Up this gutomanically for files	ike this from now on.				
Redirect Notifications		OK Cancel				
My User Account						
Manage Patient Access						
Test Web Service						

Cohort Export Dialogue Box

7. For this example, open the file with **Microsoft Edge**.

	MM cityEHR - Administration - Manage Cohort Searches	Show
► System		T C
► Database	User: ch/EHR Administrator (admin) v Cohort type: All v Role: Administrator v	
► Information Model	Patient Cohord 2021-12:08114.45.23	
► Directory	File Home Share View Compressed Fulder Tools 🗸 🕑	
► Users and Care Teams	← → × ↑ 3 × Temp > cohordisendes-2821-22-10111-32-30 × (b) Search cohordisendes-2821-22 × (b) Search cohordisendes-28	
Knowledge Sources	Contribution of Contribution of Contribution (Contribution of Contribution of Contributio of Contribution of Contribution of Contribution of Contributio	
► Patient Records	Constant /	
▼ Cohort Searches	Booments ≠ ■ Peters: ≠	
Manage Cohort Searches	A VMO 35 arm	
Import Cohort Search	cohottuli informationMac	
► Export Data Sets	Extract Contents	
Redirect Notifications		
My User Account	Deskop v c s	
Manage Patient Access	1 Janni 🔤	
Test Web Senice		

Extracting the Exported Cohort File's XML Contents

8. Extract the XML contents, and a new window will open displaying the XML of the exported data.

	alla .	P- 6 6
C\Users\umiss\AppData\Local\Temp\Temp_cohortSearches-2021-12-10T11-37-39.aip\;cohortSearches-2021-12-10T11-37-39.aml	- C Search	V* 107 207 8
Users'umiss'.AppData'u × 💽		
xml version="1.0" encoding="UTF-8"7>		
ohortSearches xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:x2="http://		
Ins:msexcel="http://schemas.openxmlformats.org/spreadsheetml/2006/main" xmlns:rdf="http://www.w3.org/1999/02/22-rdf-		
506" xmlns:ev="http://www.w3.org/2001/xml-events" xmlns:xi="http://www.w3.org/2001/XInclude" xmlns:exist="http://exist. Ins:xsi="http://www.w3.org/1999/XSL/Transform" xmlns:xhtml="http://www.w3.org/1999/xhtml" xmlns:xsi="http://www.w3.	.sourcetorge.net/NS/exist* xmins:exforms="http://www.exforms.org/ext/1-	-0 d (wformer
ns.stel. http://www.ws.org/12557/Ast/fransform_andmis.atton_inttp://www.ws.org/12557/Atton_andmis.stel.http://www.sa ns:office="unricoasi:s:name:t:c:opendocument:xmlns:office:10" xmlns:x:u=http://orboo.org/oxf/xml/xinclude: xmlns:office2003		
ins:owl="http://www.w3.org/2002/07/owl#" xmins:widget="http://orbeon.org/oxf/xml/widget" xmins:cda="urn:hi7-org:v3" xmi	Ins:xforms="http://www.w3.org/2002/xforms" xmlns:ss="urn:schemas-micro	
<cohortsearch xmlns:exf="http://www.exforms.org/exf/1-0" xmlns:fr="http://orbeon.org/o</td><td>xf/xml/form-runner" xmlns:math="http://exslt.org/math"></cohortsearch>		
<id>admin2021-12-08T14-46-10.975Z</id> <origin>#CityEHR:Role:Administrator</origin>		
<pre>cohortName>Patient Cohort 2021-12-08T14:45:29.019Z</pre>		
< cohortPatientString/>		
< cohortPatientCount/>		
<cohortanalysis></cohortanalysis> - <searchterms></searchterms>		
- Searcherms		
 cparameters> 		
- <graph decimalprecision="0" hovercapbg="FFFFDD" hovercapborder="000000" numbersuffix="" numdivlines="0" p="" xaxisnam<=""></graph>	<pre>ie="" yaxisname="" yaxisminvalue="0" yaxismaxvalue="0" subCaption="" caption=</pre>	" bgcolor="e1f5ff">
<pre><set color="FFFFFF" name="Template" value="10"></set> - <trendlines></trendlines></pre>		
 <trenumes></trenumes> (ine color="FFFFFF" isTrendZone="0" thickness="1" displayValue="" startvalue="10"/> 		
 <enumeratedclassselection></enumeratedclassselection> 		
<elementqueryposition></elementqueryposition> <class></class>		
 cussy > cutvNode/> 		
<classdisplayname></classdisplayname>		
<selectednode "="" code="" displayname="/></td><td></td><td></td></tr><tr><td><suppOataSetId/> <suppOataSet/></td><td></td><td></td></tr><tr><td>- <suppDataQuery></td><td></td><td></td></tr><tr><td><! Set of <query> elements for the Supplementary Data of the selected class node></td><td></td><td></td></tr><tr><td></suppDataQuery></td><td></td><td></td></tr><tr><td><! Template query element for the Supplementary Data></td><td></td><td></td></tr><tr><td> </td><td></td><td></td></tr><tr><td><origin/></td><td></td><td></td></tr><tr><td><comparatorType/> <aearchEntry displayName=" type=""></selectednode>		
<pre><searchentry code=" type=" displayname=" code=" type="/> <searchEntral_displayName="></searchentry></pre>		
<searchterm3 "="" code="" displayname=" code=" type=""></searchterm3>		
<searchterm5 code="" displayname="" type=""></searchterm5>		
<pre><searchoperator1 displayname="" selection=""></searchoperator1> <searchoperator2 displayname="" selection=""></searchoperator2></pre>		
 <suppdataquery> Set of <guery> elements made for all supplementary data sets in the entry (may be more than one)> </guery> </suppdataquery>		
<i-> Set or <query> elements made for all supplementary data sets in the entry (may be more than one)> </query></i->		
<pre><pre>celement displayName="" type="" clusterDisplayName="" clusterId="" elementType="" elementDisplayName="" elementIRI=</pre></pre>	*" id="/>	
 <elementselection></elementselection> 		
<element id=** displayName=** elementIRI=** elementDisplayName=** type=** elementType=** clusterId=** clusterId=**</td <td>.sterDisplayName=""/>></td> <td></td>	.sterDisplayName=""/>>	
- <query></query>		
ndow diaploving overgated appart VML file		
ndow displaying extracted cohort XML file		

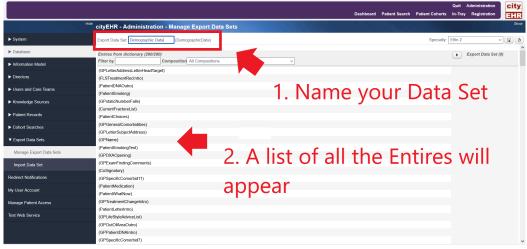
Export Data Sets

- 1. Navigate to the **Administration** screen in the Purple system navigation.
- 2. Navigate to **Export Data Sets** in the menu on the left side of the screen.

	eityEHR - Administration - Manage Export Data Sets	Store
► System	Export Data Set:	Specialty: cityEHR Feature Demo 💙 🗲
► Database		
 Information Model 		
Directory		
Users and Care Teams		
Knowledge Sources		
 Patient Records 		
Cohort Searches		
▼ Export Data Sets		
Manage Export Data Sets		
Redirect Notifications		
Manage Patient Access		
Test Web Service		

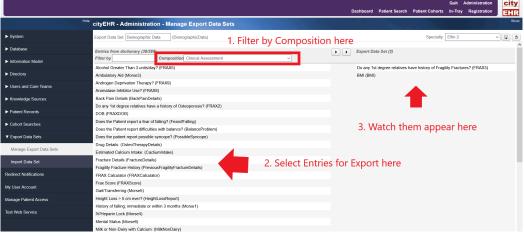
Manage Export Data Sets Page

3. Enter a name for your data set.



Naming the Data Set

4. Select the entries you want to add to your exported data set. These will appear in the column on the right. You can also filter entries by composition by using the drop-down menu next to **Composition**.



Selecting Entries to Add to Exported Data Set

5. Click the **Save** button at the top right of the display window.

Inspecting the XML Store

The native XML database used in cityEHR can be browsed using tools in the Administration page. This functionality is useful for understanding how data is stored and can assist administrators in managing database contents. However, the facility to remove data must be used with extreme caution as it may invalidate the XML store's structure and/or compromise patient records.

Browsing Logical Databases

Open the **Administration** page and select **Browse Logical Databases** within **Databases** from the menu on the left-hand side of the display screen. The logical database will display all databases as if they are part of one database, whereas the physical database shows the different nodes within that database.



Browse Logical Database Page

Browsing Physical Databases

- 1. Open the **Administration** page and select **Browse Physical Databases** from the menu on the left-hand side.
- 2. Two separate databases are available as the root for browsing:
 - XML Store stores users and patient records for all installed applications.
 - Audit Log stores audit data for all users.
- 3. Select the database store you wish to browse. For this example, select **xmlstore**.

Hoe	cityEHR - Administration - Brow	wse Physical Databases	11000			Show
► System	System: EHR Application V Database: Bu	ailt-in Database 👻 Node: 🛛 builtin-basicEHR 👻 Versio	on: 1.4.1dev			
▼ Database	Idb/ehr				Show BTUs 🔲 Sort by: Type 🗸 🔰 Filter:	
Database Access Layer	Name	Type	Size	Last Modified		
Manage EMPI	xmistore	collection	2	2021-12-08T10-25-09-893Z 2021-12-08T10-26-46-71Z		
Generate Test Data	auditiog	collection	1	2021-12-08110:26:46.712		
Browse Physical Databases						
Browse Logical Databases						
Information Model						
► Directory						
Users and Care Teams						
 Knowledge Sources 						
Patient Records						
Cohort Searches						
► Export Data Sets						
Redirect Notifications						
My User Account						
Manage Patient Access						
Test Web Senice						

Browse Physical Database Page

4. The top level of the **xmlstore** database contains collections for **Applications**, **Systems**, and **Users**. Any cityEHR installation can support multiple applications and a single set of users, each of whom has access to one or more applications.

						city
	Him cityEHR - Administration - Brow	se Physical Databases	Name of Street of Street			-
► Oystem	System ERR Application V Database	Bull-in Database v Node: bullin-basicEHR v Ve	rsion: 1.4.1dev			
▼ Database	Adbiehctomistore				Show BTUs 🔾 Sort by: Type 💙 👔 Filter	
Database Access Layer	Name	Tapa	Size	Last Modified		
Manage (MPI	system	collection	2	2021-12-06704 39:50 959-05:00		
	applications	collection	10	2021-09-1711132:06:218-04:00		
Generate Test Data	users	collection	2	2021-09-17711-32:51 429-04:00		
Browse Physical Databases						
Browse Logical Databases						
 Information Wodel 						
Directory						
Users and Care Teams						
Knowledge Sources						
Patient Records						
Cohort Searches						
► Export Data Sets						
Redirect Notifications						
Wy User Account						
Manage Patient Access						
Test Web Service						

browse Physical Database "xmlstore" Page

- 5. Click on the **users** link to view a list of all registered users. Initially, this will include only the default **admin** user and any others you imported or created previously.
- 6. Click on the **admin** link, then on **credentials**. Click the binoculars icon at the top right of the viewing panel.

He	cityEHR - Administration - Browse Physical Databases				Show
► System	System: EHR Application v Database: Built in Database v Node: builtin-basicE	HR Version: 1.4.1dev			
▼ Database	/db/ehr/smistore/users/admin/credentials				Show BTUs Sort by Type V If Filter:
Database Access Layer	Name	Type	Size	Last Modified	T
Manage EMPI	recentPatients	resource	4096	2021-12-08T14:42:15.353Z	
	credentials	resource	4096	2021-12-08T10:26:46.507Z	Click to view XML
Generate Test Data	session-parameters	resource	4096	2021-12-08T15:02:25.438Z	
Browse Physical Databases	htmlCache	resource	4096	2021-12-08T14:37:38.404Z	
Browse Logical Databases					
Directory					
Users and Care Teams					
► Knowledge Sources					
► Patient Records					
► Cohort Searches					
► Export Data Sets					
Redirect Notifications					
My User Account					
Manage Patient Access					
Test Web Senice					

Viewing "xmlstore" Page Credentials

7. An XML document containing the user details (*users.xml*) will appear in a new dialogue window.

	ide cityEHR - Administration - E	rowse Physical Databases	Show
► System	System: EHR Application 👻 Database	XML Document Viewer - credentials	
▼ Database	(db/ehr/xmistore/users/admin/crede		Show BTUs Sort by: Type V II Filter:
Database Access Layer	Name	Download Close	
Manage EMPI	recentPatients credentials	<pre>cuser id="fCityEB:User:admin" xmlnstrdf="http://www.w3.org/1999/02/22-rdf-syntax-nsf" xmlnstxxfor</pre>	
Generate Test Data	session-parameters htmlCache	<pre><credentials></credentials></pre>	
Browse Physical Databases	in the second	<pre><useldadmin uselda<br=""><logonalias></logonalias> <usernam><iryurr administrator<="" username=""></iryurr></usernam></useldadmin></pre>	
Browse Logical Databases		<pre>coode/> <pre>coode/> <pre>coode/> <pre>coode/></pre></pre></pre></pre>	XML Dialogue Box
► Directory		<pre></pre> <pre><</pre>	Boy
Users and Care Teams		<pre></pre> <applications> </applications>	BOX
Knowledge Sources		<iso-13606:Folder id=**/	
► Patient Records		130-136061EER_EXTRACT	
Cohort Searches			
► Export Data Sets		<restrictpatientaccess displaymame="*All" patients*="" value="**"></restrictpatientaccess> <role administrator*="" displaymame="*System" value="*/CityEMR:Role:System:Administrator*/"></role>	
Redirect Notifications		<pre><!-- Set as 'careTean' to restrict to patients in user's care tean(s)--><!--</td--><td></td></pre>	
My User Account		<td></td>	
Manage Patient Access			
Test Web Service		<	

XML Document of User Details

- 8. You can download the XML to view it in a text editor.
- 9. Return to the top level of the **xmlstore** by clicking the back button located next to the database selection drop-down (not the browser's back button).

Hide	cityEHR - Administ	ration - Browse Physic	al Databases			Contract Margaret		Show
► System	System: EHR Application	v Database: Built-in Database	v Node builtin-basicEHR v Version: 1.4.1dev					
▼ Database	db/ehr/xmistore B	ack Button				Show BTUs D Sort by: Type	V It Filter	
Database Access Layer	Name		Туре	Size	Last Modified			
Manage EMPI	users		collection collection		2021-12-08T10-26-46-507Z 2021-12-08T10-25-09-893Z			
Generate Test Data	applications		collection	1	2021-12-00110-25-09-0932			
Browse Physical Databases								
Browse Logical Databases								
► Information Model	Mavi	asto to spoli	ications					
Directory	INAVI	gate to appli	ications					
Users and Care Teams								
Knowledge Sources								
► Patient Records								
Cohort Searches								
► Export Data Sets								
Redirect Notifications								
My User Account								
Manage Patient Access								
Test Web Service								

Returning "xmlstore" Top Level by Clicking the Back Button

- 10. Click on the **applications** link, then the link for **ISO-13606-EHR_Extract-cityEHR**.
- 11. This displays the top-level collections for the default cityEHR application.

	Hee cityEHR - Administration - Browse Physi	ical Databases					9
System	System: EHR Application 👻 Database: Built-in Database	e 👻 Node: builtin-basicEHR 👻 Version: 1.4.1dev					
• Database	/db/ehrixmistore/applications/ISO-13606-EHR_Extract-	cityEHR			Show BTUs 🔲 Sort by: Type	v It Filter.	
Database Access Layer	Name	Type	Size	Last Modified			
Manage EMPI	data	collection	1	2021-12-08T13:30:56:011Z			
	informationModel	collection	2	2021-12-08T10:25:09.895Z			
Generate Test Data	languagePack	collection	1	2021-12-08T12:47:33.952Z			
	cohortSearches	collection	2	2021-12-08T14:46:11.045Z			
Browse Physical Databases	systemConfiguration	collection	6	2021-12-08T10:25:13.769Z			
Browse Logical Databases	records	collection	10	2021-12-08T12-08-19.993Z			
Users and Care Teams Knowledge Sources Patient Records							
Cohort Searches							
Export Data Sets							
Redirect Notifications							
My User Account							
Manage Patient Access							

Top-Level Collections for the Default cityEHR Application

- 12. Click on the **records** link to see a list of patients with stored records for this application.
- 13. Click on a patient's link to view a list of timestamped compositions (XML documents in HL7 CDA format) representing the events stored in their record.

	Death	nboard P	atient Search	Quit Administration Patient Cohorts In-Tray Registration	city EffR
	Kee cityEHR - Administration - Browse Physical Databases				Show
► System	System: EHR Application 💙 Database: Built in Database 👻 Node: builtin basicEHR 💙 Version: 1.4.1dev				
▼ Database	Add/ehr/smlstore/applications/ISO-13666-EHR_Extract-city/EHR/records/K1025710		Show BTUs	Sort by: Type v If Filter:	
Database Access Layer	Name	Туре	Size	Last Modified	^
Manage EMPI	2021-12-08712-26-35, 1822-1956-03-28710-44-20-610474-CayEHR-Message-LabData-admin 2021-12-08712-26-35, 1822-1956-12-20114-04-16-955571-CayEHR-Message-BoxeChemistry-admin	resource resource	12288 16384	2021-12-08T12-26:35.772Z 2021-12-08T12-26:35.814Z	
Generate Test Data	2021-12-08T12-26-35-1822-1995-11-19T22-14-38-606899-CityEHR-Message-LabData-admin	resource	12288	2021-12-08T12-26:35.859Z	
Browse Physical Databases	2021-12-00T12-26-35-1822-1996-11-19722-14-38.606899-ChyEHR-Message-Bore/Chemistry-admin 2021-12-00T12-26-35-1822-1996-10-25706-33-06-519234-ChyEHR-Message-Bore/Chemistry-admin	resource resource	12288 8192	2021-12-08T12-26-35.922Z 2021-12-08T12-26-35.955Z	
Browse Logical Databases	2021-12-00112-26-35.1822-1995-04-01101-08-56.018204-CityEHR Message BoneChemistry admin 2021-12-00112-26-35.1822-1995-04-01101-08-56.018204-CityEHR Message LaBOata-admin Timestamp example. Click any of these.	resource resource	8192 12288	2021-12-08T12-26:36Z 2021-12-08T12-26:36.048Z	
 Information Model 	2021-12-01712-26-35.1122.196-03-24T00-44-37.295901-CbyEHR-Message-LakData-admin 2021-12-01712-26-35.1122.196-03-24T00-44-37.295901-CbyEHR-Message-BoreChemistry-admin	resource resource	12288 16384	2021-12-08T12:26:36:094Z 2021-12-08T12:26:36:141Z	
Directory Users and Care Teams	2021-12-08712-26-35.1822-1996-01-04T04-36-68.685029-CbyEH:R:Message-LabData-admin 2021-12-08712-26-35.1822-1995-01-04T04-36-58.685029-CbyEH:R:Message-BowChremstrv-admin	resource	12288	2021-12-08T12-26:36.187Z 2021-12-08T12-26:36.235Z	
Knowledge Sources	2021-12-08112-86-35. 1822-1994-06-27123-29-00.766713-ChyCHR Message-BoneChemistry admin 2021-12-08112-86-35. 1822-1994-04-30118-54-47.98252-ChyCHR Message-JabData-admin	resource	16384	2021-12-08T12-26:36.297Z 2021-12-08T12-26:36.343Z	
Patient Records	2021-12-08712-26-35.1822-1994-04-30718-54-47.98252-CityEHR-Message-BoneChemistry-admin	resource	20480	2021-12-08T12-26-36-389Z 2021-12-08T12-26-36-437Z	
Cohort Searches	2021 12 0617 12 26-35. 1822. 1930 07 307 02 30 04. 4097 19 CityEHR Message LakData admin 2021 12 0617 12 26-35. 1822. 1930 07 307 02 30 04. 4097 19 CityEHR Message BoneChemistry admin	resource	16384	2021-12-08T12-26-36-483Z	
► Export Data Sets	2021-12-08712-28-35-1822-1993-06-27713-07-23.713169-CityEHR-Message-BoreChremistry-admin 2021-12-08712-28-35-1822-1993-06-27713-07-23.713169-CityEHR-Message-LatData-admin	resource	12288 8192	2021-12-08T12:26:36.514Z 2021-12-08T12:26:36.576Z	
Redirect Notifications	2021-12-08712-26-35-1822-1993-05-01715-05-12-494206-CleyEHR-Message-BoreChremistry-admin 2021-12-08712-26-35-1822-1993-05-01715-05-12-494206-CleyEHR-Message-LabData-admin	resource resource	16384 12288	2021-12-08712-26:36.622Z 2021-12-08712-26:36.652Z	
My User Account	2021-12-06112-26-35 1822-1939-07-28116-32-32 18143-ChyEHR-Form-Allengies/Warrings-admin 2021-12-08112-26-35 1822-1936-04-13112-41-55-238064-ChyEHR-Form-Lifestyle-admin	resource resource	8192 16384	2021-12-08T12-26:35-2232 2021-12-08T12-26:35-254Z	_
Manage Patient Access	2021-12:00712:26-35.1522.1996-05-30721-13:28:542938.CftyEHR Form:UAS28-admin 2021-12:00712:26-35.1522.1999-07-20715-59-40.114666-CttyEHR Form:Ultratyle-admin	resource resource	90112 12288	2021-12-08T12-26-35-286Z 2021-12-08T12-26-35-332Z	
Test Web Senice	2021-12-08T12-26-35-182Z-1998-04-27T06-38-32-128365-CityEHR-Form-Lifestyle-admin	resource	16384	2021-12-08T12:26:35.363Z	
	2021-12-00T12-26-35.1022-1996-07-20T15-48-09.748/07-CkyEHR-Form-Medication-admin 2021-12-00T12-26-35.1022-1996-07-20T15-47-33.173466-CkyEHR-Form-HADS-admin	resource resource	16384 40960	2021-12-08T12:26:35.395Z 2021-12-08T12:26:35.426Z	~

Patient Timestamped Compositions

14. Click on a timestamp, then on the binoculars icon to view an HL7 CDA document for the selected event.

	Hile cityEHR - Administration - I	Browse Physical Databases					Show
► System	System: EHR Application V Databas	XML Document Viewer - 2021-12-08T12-26-35.182Z-1	996-03-28 T10-44-20.610474-CityEHR-Message-LabData-admin				A = V
▼ Detabase	 /db/ehr/xmlstore/applications/ISO- 	Download Close		Sh	ow BTUs 🔲 S	ort by: Type 👻 🔰 Filter	
Database Access Layer	Name		^	Туре	Size	Last Modified	- (
Manage EMPI	2021-12-08T12-26-35-182Z-1996-03-28T 2021-12-08T12-26-35-182Z-1995-12-20T	<clinicaldocument #cityer:nessace:laboat<="" th="" xmlns:rdf="http://www.w3.org
<typeId extension="><th>//999/02/22-rdf-syntax-ns#" xmlns:fr="http://orbeon a" root="fCityEERIMessage"/></th><th>resource resource</th><th>12288 16384</th><th>2021-12-08T12:26:35.772Z 2021-12-08T12:26:35.814Z</th><th></th></clinicaldocument>	//999/02/22-rdf-syntax-ns#" xmlns:fr="http://orbeon a" root="fCityEERIMessage"/>	resource resource	12288 16384	2021-12-08T12:26:35.772Z 2021-12-08T12:26:35.814Z	
Generate Test Data	2021-12-08T12-26-35.1822-1995-11-19T2 2021-12-08T12-26-35.1822-1995-11-19T2	<pre><templateid <id="" extension="*2021-12-08T12-26-35.1822-19</pre"></templateid></pre>	heumatology" root="#ISO-13606:EHR_Extract:cityEHR"/> 96-03-28710-44-20.610474-CityEHR-Message-LabData-adm	resource resource	12288 12288	2021-12-08T12:26:35.85921, 2021-12-08T12:26:35.922Z	Click binoculars icon
Browse Physical Databases	2021-12-08T12-26-35.182Z-1995-10-25T0 2021-12-08T12-26-35.182Z-1995-08-15T1	<pre><code code="" codesystem="cityEBR" display<br=""><effectivetime k1025710"="" value="1996-03-28T10:44:20.
<recordTarget></pre></th><th></th><th>resource
resource</th><th>8192
8192</th><th>2021-12-08T12:26:35.955Z
2021-12-08T12:26:36Z</th><th></th></tr><tr><th>Information Model</th><th>2021-12-08T12-26-35.1822-1995-04-08T0
2021-12-08T12-26-35.1822-1995-03-24T0</th><th><pre><pre><pre>cid extension="></effectivetime> <pre><pre>cpatient></pre></pre></code></pre>	2. Dialogue Box that	resource resource	12288 12288	2021-12-08T12:26:36:048Z 2021-12-08T12:26:36:094Z	
► Directory	2021-12-08T12-26-35.182Z-1995-03-24T0 2021-12-08T12-26-35.182Z-1995-01-04T0	<pre>cname></pre>	appears after clicking	resource resource	16384 12288	2021-12-08T12:26:36.141Z 2021-12-08T12:26:36.187Z	
► Users and Care Teams	2021-12-08T12-26-35.182Z-1995-01-04T0 2021-12-08T12-26-35.182Z-1994-06-27T2	<given>Zara</given> <family>French</family> 	binoculars icon	resource resource	16384 16384	2021-12-08T12:26:36.235Z 2021-12-08T12:26:36.297Z	_
Knowledge Sources Patient Records	2021-12-08T12-26-35.182Z-1994-04-30T 2021-12-08T12-26-35.182Z-1994-04-30T	<pre>cadministrativeGenderCode code=*</pre>	Female" codeSystem="cityEER" displayName="Female"/>	resource resource	12288 20480	2021-12-08T12-26-36.343Z 2021-12-08T12-26-36.389Z	_
Cohort Searches	2021-12-08T12-26-35.182Z-1993-07-30T0 2021-12-08T12-26-35.182Z-1993-07-30T0	<pre><pre>cproviderOrganization></pre></pre>	1.113003.2.1.4.3*/>	resource resource	12288 16384	2021-12-08T12:26:36:437Z 2021-12-08T12:26:36:483Z	
► Export Data Sets	2021-12-08T12-26-35.182Z-1993-06-27T 2021-12-08T12-26-35.182Z-1993-06-27T	 		resource	12288 8192	2021-12-08T12:26:36:514Z 2021-12-08T12:26:36:576Z	_
Redirect Notifications	2021-12-08T12-26-35.182Z-1993-05-01T 2021-12-08T12-26-35.182Z-1993-05-01T	<pre><component> <structuredbody> <component></component></structuredbody></component></pre>		resource	16384 12288	2021-12-08T12:26:36.622Z 2021-12-08T12:26:36.652Z	_
My User Account	2021-12-08T12-26-35.182Z-1999-07-28T 2021-12-08T12-26-35.182Z-1998-04-13T	<pre><section <id="" cityeer"="" cityzer:layout="Ranked" extension="#ISO-13606:Sec</pre></th><th>> tion:OsteoporosisOtherLabs* root="></section> V</pre>	résource résource	8192 16384	2021-12-08T12:26:35.223Z 2021-12-08T12:26:35.254Z	_	
Manage Patient Access Test Web Senice	2021-12-08T12-26-35.182Z-1996-05-30T2 2021-12-08T12-26-35.182Z-1999-07-28T	<title>Other Labs</title>	, [*]	resource	90112 12288	2021-12-08T12:26:35.286Z 2021-12-08T12:26:35.332Z	
	2021-12-08T12-26-35.182Z-1999-07-28T1	6-38-32.128365-CityEHR-Form-Lifestyle-admin 5-48-09.748967-CityEHR-Form-Medication-admin		resource	16384 16384	2021-12-08T12-26:35.363Z 2021-12-08T12-26:35.395Z	

HL7 CDA Document for Selected Event

15. Continue exploring the database, such as the **ISO-13606-EHR_ExtractcityEHR** collection, to view contents stored for the information model (OWL XML files) and the system configuration (templates for forms, letters, and data dictionary).

Manipulating the Information Model as an Ontology

This topic guides users through browsing, exporting, editing, and importing ontology-based information models in cityEHR using Protege.

Browse the Ontology in cityEHR

- 1. Move to the Administration screen by pressing the button in the top right corner of the screen. Then, move to Information Model in the Menu on the Left of the Screen. You should land on "Manage Information Model". You will see a summary of the information models loaded for this installation (if not, press the selection to Manage Information Model in the left hand menu).
- 2.

	Hide cityEHR - Administration - Manage Information Model	
► System	Specialty: Summary - all specialties v Information Model: Summary - All Models	s v
► Database	Specialties (2)	Information Models (6)
▼ Information Model Manage Information Model Import Information Model Import Language Pack	ch/EfR Common Model (#SO-13008 Folder ch/EFRBase)	800 (HR) Class Dugs Ont Dags //apple.init/s050-1506 EHR_Extract-clyEHRInformationModel/clyEHR.Class-CommonModel Dugs-1 xml #850-1506 F.Fdarc-clyEHBlass Speciarly
Local Information Model		cityEHR Common Model (applications/ISO-13606-EHR_Extract-cityEHR/informationModel/cityEHR-Speciality-CommonModel-9 xml
Manage Media Manage Image Maps ► Directory	cityEHR Feature Demo (#ISO-13606 Folder FeatureDemo)	#ISO-1308 Fidder FaduraDerno conferent Fadura Derno /regleterizations: 50% EHFL; Extract-oly:EHFInformationModel(oly:EHF-Specially-Fadura Derno 171 seri
Users and Care Teams Knowledge Sources		RDp.GHR Class Laifest Cast Laboratory Tests /applications/2015/0662HR _Estingl-cbjCHR/indomitionModell/cbjCHR-Class-LaiFest-6.xml
Patient Records Cohort Searches		80-06HR Class Dags Class Dags //apdcalant/05/0.1506 EHR_Estinst-olyEHRInformationModell/olyEHR_Class-Dags-2.vml
Export Data Sets Redirect Notifications My User Account		RD-(HHC Class Diagnosis Crass Dagnosis InglocialantoSO-15906 EHIT_Estract-olyEHIRItatimationModelicbyEHIR Class-Clasgrooks-21 sml
Manage Patient Access Test Web Service		

Base Manage Information Model screen

3. In the selection for Information Model, find the model for Specialty - cityEHR Feature Demo. This is the model that was driving the interaction with the cityEHR that you have just encountered.

	cityEHR - Administration - Manage Information Model	
▶ System	Specialty: cityEHR Feature Demo 🗸 Information Model: Summary - All Models	 Image: A start of the start of
▶ Database		ormation Models (4)
▼ Information Model	styEHR Feature Demo (#ISO-13606:Folder:FeatureDemo)	#ISO-1960F-Folder FeatureDemo Socialty
Manage Information Model	Summary of models contained	Spiciarly cityEHF Feature Demo / rappications/ISO-13906/EHR Extract-cityEHR/reformationModel/cityEHR-Spociality-Feature-Demo-171.xml
Import Information Model	within Feature Demo	#CityEHR.Class.LabTest
Import Language Pack		Class Laboratory Tests
Local Information Model		/applications/ISO-13806-EHR_Extract-cityEHR/information/Model/cityEHR-Class-LabTest-6.xml
Manage Media		#CityEHR Class Drugs Class
Manage Image Maps		Drogs /applications/ISO-13606-EHR_Extract-cityEHR/informationModel/cityEHR-Class-Drugs-2.xml
► Directory		#CityEHR Class Diagnosis Class
 Users and Care Teams 		Diagnosis Jappications/ISO-13606/EHR Extract-city/EHR/information/Model/city/EHR-Class-Diagnosis-21.xml
► Knowledge Sources		
 Patient Records 		
► Cohort Searches		
Export Data Sets		
Redirect Notifications		
My User Account		
Manage Patient Access		
Test Web Service		

Selecting cityEHR Feature Demo information model

4. The model is loaded to cityEHR as an ontology which you can browse by selecting "Feature Demo" from the Information Model drop down shown below. You can then expand the ontology by clicking the + sign. See image below.

	cityEHR - Administration - Manage Information Model
► System	Specialty: ChyErR Facture Demo 🔍 Information Hodel: Specialty - chyErR Facture Demo 🗸 Show ontology summary 🖬 Base/Applied Language English / English Language: an CB-English 🗸
► Database	Solet view: ISO-15866 Browser v DW ISO HITI VO; U
▼ Information Model	Imported from file: /applications/ISO-13006/EHR_Estract-cityEHR/InformationModel/cityEHR.Speciaity=
Manage Information Model	wood type: Total assertions: 12590 Errors: 0
Import Information Model	Variants o 1. Change Information Model to Feature Demo
Import Language Pack	Folders: 4 Verse: 10 here
Local Information Model	⊧oms: ∕b Message: 6
Manage Media	Sections 65 Entires 151 Custers 12
Manage Image Maps	Elements 207 Units 10
Directory	Const. 10 Terms 943
Users and Care Teams	# EM_Editat - otyEHR Feature Demo
Knowledge Sources	
► Patient Records	
Cohort Searches	
Export Data Sets	—
Redirect Notifications	2. Click + to expand and view Ontology
My User Account	
Manage Patient Access	
Test Web Senrice	

Changing information model and viewing ontology

5. You can browse through the ontology by expanding the tree controls - you should see the Folders, Views, Forms, Sections and Entries for the screens you have already worked with. You can select any of the loaded models and browse either as ISO-13606, data dictionary contents, class hierarchies and class nodes, depending on the type of the model (specialty or class hierarchy).

Export the Ontology and Open in Protege

1. Export the ontology by clicking the **Export** button at the top-right. Select **OWL** to download the ontology as a zip file.

Hide	cityEHR - Administration - M	anage Information Model	Show
▶ System		Information Model: Specialy - ctyEHR Feature Demo 🗸 Show ontology summary 🗹 Base/Applied language English / English Language: en-GB - English 🗸	
► Database	Select view: ISO-13606 Browser ~	owi iso mm cori	
▼ Information Model	Imported from file: /applications/ISO Model type:	13606-EHR_Extract-cityEHR/informationModel/cityEHR-Specialty-Feature-Demo-171.xml	
Manage Information Model	Total assertions: 12590 Errors: 0		
Import Information Model	Warrings: 5 Classes: 0	Export Buttons	
Import Language Pack	Folders: 4 Views: 10		
Local Information Model	Forms: 26 Messages: 6	Buttons	
Manage Media	Sections: 85 Entries: 151 Clusters: 12	battonio	
Manage Image Maps	Clusters: 12 Elements: 357 Units: 10		
► Directory	Terms: 943		
 Users and Care Teams 	EHR_Extract - cityEHR Feature Demo		
► Knowledge Sources			
► Patient Records			
► Cohort Searches			
► Export Data Sets			
Redirect Notifications			
Manage Patient Access			
Test Web Senice			

Exporting Ontology models

2. Save the file on your system. Rename it to use a **.zip** extension and unzip it to obtain the ontology (an OWL/XML file). Rename the file to use a **.owl** extension for easier compatibility with Protege.

Hide	cityEHR - Administration - Manage Information Model
▶ System	Specialty: [chyEHR Feature Demo 🗸 Information Model: [Specialty-chyEHR Feature Demo 🗸 Show ontology summary 🖬 BaseApplied Language: English / English Language: [en-GB - English 🗸
► Database	Select view: ISO-13006 Browser 🔹 owi ISO mm 000 🕎
▼ Information Model	Imported from file: /applications/SO-13006-EHR_Extract-city/EHR/information/Modelicity/EHR Specialty Feature-Demo-171.xml Model type
Manage Information Model	Total assertions 12590
Import Information Model	Warnings: 5 Opening 50-13606-Folder-Festuret/Evmo-2021-12-01115-48-28.sip X Classing: 0 Classing: 0 X
Import Language Pack	Faders: 4 Vio have disease to spee: Views: 10 0 1006-646e+FeatureDemo-2021-12-08175-48-28.dp
Local Information Model	Form: 26 which is Compressed Epiped) Folser Messager: 6 for http://tealhout.000
Manage Media	Sections 85 Entries: 151 What should Feefox do with this file? Cluster: 12
Manage Image Maps	Elements: 357 Ogen with Windows Explorer (default)
► Directory	Units: 10 @jsne File Terms: 943 D this patomatically for Files like this from now on.
Users and Care Teams	EHR Estrat - cityEHR Feature Demo
► Knowledge Sources	OK Cancel
► Patient Records	
Cohort Searches	
► Export Data Sets	
Redirect Notifications	
My User Account	
Manage Patient Access	
Test Web Service	

Renaming export file pop-up

- 3. Open the ontology in Protege. Start Protege, select **Open an existing ontology**, navigate to the unzipped file, and open it. You can also double-click the file if it has a **.owl** extension.
- 4. Use the **Classes** tab to view the class hierarchy and the **Individuals** tab for specific instantiations of the Feature Demo model.
- 5. Explore classes corresponding to ISO-13606, HL7 CDA, and cityEHR-specific components.
- 6. Under the **Object Properties** tab, expand **Top Object Property** to view all object properties in cityEHR. These are split into two sets, with names starting 'has' or 'is' each named pair being the inverse of each other.
- 7. Similarly, use the **Data Properties** tab to view all data properties available in the architecture.

Edit the Ontology

In Protege, try adding a new section to a form or new entries to an existing section. Save your changes using **Save As** to preserve the original file in case of errors.

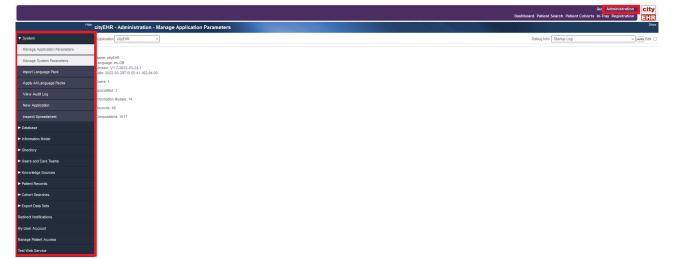
Note: Ensure you follow your workshop instructor's guidance to prevent issues in the ontology structure.

Load the Model to cityEHR

- 1. Return to the cityEHR Admin page and select **Import Information Model** from the left-hand menu. Browse to your OWL/XML file, upload it, and then click **Import**.
- 2. Once the import completes, a summary of the loaded model will appear. If errors are found, the model will not be loaded, and the errors will be reported.
- 3. After a successful import, return to the Patient Search screen. Select a patient and navigate to the updated form to verify the changes.

Manipulating the Information Model as a Spreadsheet

If you have administrative access, your Administration Page, Figure 109.



Administration Page

Manipulating the information model as an ontology is quite difficult and it is easy to make a mistake. There are several underlying reasons for this:

- the atomic assertions in an ontology mean that two or three related assertions need to be made to specify fairly simple associations (for example, to create a section which has a title and two subsections will take at least six separate assertions)
- ontologies are used to classify and reason, but are not good for constraining users in the models they can create - we can easily find that a model is inconsistent, but its not so easy to prevent users from creating an inconsistent model in the first place.

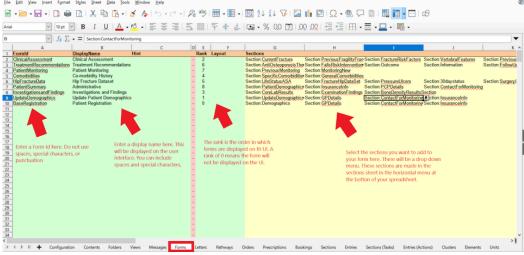
To get around these issues, and to create tooling that clinical users are able to work with more easily, the information model for cityEHR can also be created and modified using a standard spreadsheet package.

The open source Open Office spreadsheet is used to create a model in a way that is easier to control, in terms of the constraints that can be applied.

When the spreadsheet model is ready it is then saved as an XML file and is transformed from that to an ontology in OWL/XML format as it is loaded to the cityEHR.

- 1. Using Open Office, open the file cityEHR Specialty Feature Demo.ods in the information model directory of the materials
- 2. This is an open office spreadsheet set up with a cityEHR information model. It has about 20 sheets (see the tabs along the bottom left) and you will see that some of these correspond to components in the ISO-13606 model Folders, Sections, Entries, Clusters, Elements
- 3. Other sheets correspond to particular types of Composition Views, Forms, Letters, etc

- 4. We are going to use the spreadsheet to add our own new form to the information model.
- 5. To do this, move to the Forms sheet and enter details of the new form on one of the blank lines (don't insert a new line, just use one of the existing blank lines the sheet should be protected to prevent you from inserting or deleting lines).
- 6. In the column called Form Id enter an identity for your form this must use only the characters a-zA-Z0-9 (i.e. no spaces or special characters, including dashes). The form will use the Display Name you enter in the second column this is the title of the form and can contain any characters, including spaces and special characters. We will set our Form ID to Test Form and Display Name to Test Form so that it is easily identifiable in the interface.



Specialty - Feature Demo.ods Information Model

- 7. The Rank column determines the order in which your form will be listed, relative to the other forms already defined enter a low number to see it near the top of the list or a high number to see it at the bottom
- 8. The fields that are buff coloured and headed Sections are where you can select the sections that will appear on your form-you pick these from the drop down lists in each field. Sections will appear on your form in the order in which they are listed here.
- 9. The sections in those drop down lists come from the Sections sheet. You can move there to see how sections are defined in a similar way to Forms. You can add a new section here and add Entries to it, in the same way that you added sections to a form.
- 10. In the Entries sheet you can add new entries, each with a list of elements as contents. Finally, you can defined elements on the Elements sheet, with their data types, including lists of enumerated values, if required.
- 11. Once you are happy with your changes save the spreadsheet under a new name (its important to do this in case you have made a mistake and need to revert to the previous version).

Note: skip the next steps if you are instructed by your workshop organiser to load models directly as a spreadsheet file.

- 12. Having saved the new spreadsheet you now need to save it again, but this time in XML format. To do that use Save As and select in the File type dialogue at the bottom of the screen for Microsoft Excel 2003 XML (.XML) note that this option may be scrolled off the bottom of the list of file types when you first select the list.
- 13. The save as XML will take about 30 seconds. Once successfully saved, make sure you close the spreadsheet since it is now in XML format and any additional changes you make to it will not be properly recorded in the spreadsheet. (to make further edits, reopen the .ods file and re-save as XML when you are done).
- 14. Back in the cityEHR interface, navigate to the Admin page and select Import Information Model from the list of selections on the left.

cityEHR	×	+												
$\leftarrow \ \ \rightarrow \ \ {\bf C}$	(0 0	localhost:8080	/cityehr1-7-RC;	2/ehr/cityEHRAd	imin/?userId	d=admin&ses	ssionId=dd8aa	a5162906c31403af	792d3e82c24		☆		⊚ ≡
									Dashboard	Patient Searc	h Patlent Cohorts		Administration Registration	city EHR
		Hide	cityEHR /	ISO-13606-	Folder-Elfin	2 - Admi	inistration	n - Manage	Application P	arameters			•	Show
▼ System			Application	ityEHR 🗸						Debug Info:	Startup Log		~	anto Edit 🗌
Manage Application Parame	otors		Name: cityEH	8										
Manage System Parameters	8		Version: V1.7		2-07:00									
View Audit Log			Users: 1											
New Application			Specialties: 3											
Inspect Spreadsheet			Information M Records: 1	odels: 7										
► Database			Compositions	2										
Information Model														
Directory														
Users and Care Teams														
Knowledge Sources														
Patient Records														
Cohort Searches														
Export Data Sets														
Redirect Notifications														
My User Account														
Manage Patient Access cityEHR Version Number - V1.7-RC2	User: cl	IYEHR Ad	ministrator / Elfin 2	Logged on: 09:41	18 on Monday, 18th	October 2021	Last logged on	n: 08:00:24 on Mor	nday, 18th October 2021					

Navigating to the Information Model page

- 15. Browse to the information model spreadsheet you have just created and press to open it. The file will now be 'uploaded' to the cityEHR server. Once that has completed, an Import button will appear on the right of the display screen.
- 16. Press the import button and wait for the model to import to the database. This may take between 20 seconds and a couple of minutes, depending on the power of your machine.
- 17. Once completed, you will see a summary of all the processing that has been made, including lists of an errors found in your model.
- 18. If the model loaded successfully you can now navigate to the Patient Search page, find a patient, select Forms and you should see your new form available in the list of forms to create.



Forms page displaying new form

Configuring a Runtime Application

There are two types of applications you can create. You can either create a new one from scratch, or one that is shipped with cityEHR (like Elfin, Elfin2, or Ponseti). Instructions for making a New Application can be found in Section 13.1, and instructions for making an application that is shipped can be found in Section 13.2

Creating Your Own cityEHR Application – New Application

These instructions assume you are making an application with the identifier myEHR. Note that this identifier can contain upper/lower case characters and digits but no spaces.

- 1. Navigate to cityEHR Log-in Page
- 2. Enter user credentials. If you are starting from a blank database, the admin page will take a while to load. For this initial log-on, you will have to authenticate with username: user and password: password. This log-on may take some time as the system builds the application. Your screen may look like this:

	Loading
Import informationModel (51/55) ImportInformationModel createCompositions	
Welcome cityEHR Administrator Authentication successful	
Start Quit	
Star Gut	and the second second
abgel HE Eindersche Hach Rezerd 0 2013 2020 John Chelse and Ogel Hi Ham Montacks, Research Programme	

cityEHR log on page loading

3. Click "Start"

Welcome cityEHR Administrator Authentication successful. Start Quit	city
	EHR
cityEHR Electronic Heath Record © 2013-2020 John Chelsom Open Health Informatics Research Programme	

cityEHR log on page start up button

4. Navigate to the Administration Page at the top right of the screen next to "Quit". Click "Administration".

		Quit Administration City Dashboard Patient Search Patient Cohorts In-Tray Registration
	Hise cityEHR - Administration - Manage Application Parameters	Show
▼ System	Application cityEHR V	Debug Info: Startup Log v anno Edit 🗌
Manage Application Parameters		
Manage System Parameters	Name: cityEHR Language: en-GB	Click "Administration"
View Audit Log	Version: V1.7-2021-12-05-1 Date: 2021-12-07T15:26:32.276Z	
New Application	Users: 1	
Inspect Spreadsheet	Specialties: 2	
► Database	Information Models: 6 Records: 0	
Information Model	Compositions: 0	
Directory		
 Users and Care Teams 		
Knowledge Sources		
 Patient Records 		
Cohort Searches		
► Export Data Sets		
Redirect Notifications		
My User Account		
Manage Patient Access	×	

Primary Administrative page

5. Now navigate to and click on "New Application" in the menu left of the screen. See below.

[Quit /	Administration	city
		Dashboard	Patient Search	Patient Cohorts	In-Tray	Registration	EHR
His	⁵⁰ cityEHR - Administration - New Application						Show
▼ System	waiting						
Manage Application Parameters	Enter identifier for the new application						
Manage System Parameters	Application Id:						
View Audit Log							ation
New Application							
Inspect Spreadsheet	Click "New Application" and then enter an Id in the box						
► Database	called"Application Id"						
Information Model							
► Directory							
Users and Care Teams							
Knowledge Sources							
 Patient Records 							
► Cohort Searches							
► Export Data Sets							
Redirect Notifications							
My User Account							
Manage Patient Access	v						

New Application page within Administration

- 6. Now enter an Application Id. For this exercise, we will name the Application Id "myEHR". Ids can be made up of upper and lower case characters a-z, digits 0 to 9, and dashes (-) or underscores (_). There cannot be spaces in the Id. Some installation Ids have configurations shipped with the cityEHR installation and if you pick one of those Ids it will install that configuration for you. if you pick a new Id, then it starts from scratch. myEHR will be our new Id for this exercise.
- 7. Now click the button that has a check mark to verify your application Id.

Hise cityEHR - Administration - New Application	
em myEHR / waiting	
lanage Application Parameters	
tanage System Parameters Application Id. TmyEHR	
/iew Audit Log	ten j rippied en te
New Application	Dashboard Patient Search Patient Cohorts In-Tray Registration VEHR - Administration - New Application Image: Cohort Search Imag
Inspect Spreadsheet	
Database	
nformation Model	
Directory	
Jsers and Care Teams	
Knowledge Sources	
Patient Records	
Cohort Searches	
Export Data Sets	
direct Notifications	
y User Account	
Indee Patient Access	

Verifying the Application ID

8. If this ID has never been used before, your screen will look like this:

	Dashboard Patient Search Patient Col	Quit Administration horts In-Tray Registration	City Elik
Hit	° cityEHR - Administration - New Application		Show
▼ System	myEHR / application-parameters-built You can change the display name here		5 5
Manage Application Parameters			
Manage System Parameters	Application Configuration (application)		
View Audit Log	iso-13006:EHR_Extract id: #ISO-13006 EHR_Extract.myEHR display/lame myEHR baseLanguageCode en-GB commonModeL of	defaultSpecialty:	
New Application	city		
Inspect Spreadsheet	Application logo hint: 60 x 60 px value: /applications/ISO-13606-EHR_Extract-cityEHR/mages/cityEHRLogoTall-Small png	You can also change the logos	
► Database	Application favicon hint: 16 x 16 px value: /applications/ISO-13606-EHR_Extract-cityEHR/mages/cityEHRLogoTall-Small.ico 🗙 🚟	here	
Information Model	Splash page header logo hint: Recommended width is 720px value: Browse No file selected.		
Directory			
Users and Care Teams		CITY	
Knowledge Sources			
Patient Records		EHR	
Cohort Searches	Splash page image, left hint: Recommended width 360px or 180px value: /applications/ISO-13606-EHR Extract-cityEHR/mages/cityEHRLogoTall-Medium.png 🗙		
 Export Data Sets 	Splash page image, rent mini recommended with 300px or 100px value. Browse No file selected.		
Redirect Notifications			
My User Account			
Manage Patient Access			

New application configuration

- 9. You can change the display name of your new application and change the logos.
- 10. Once you are finished changing the display name and logos (if you want), you can now click on "Create New Application ID" identified by the lighting bolt. See image below.

	cityEHR - Administration - New Application	Show
▼ System	m/ER4 / aplcatio-parameters-bult	*
Manage Application Parameters		_
Manage System Parameters	Application Configuration (application)	
	Iso-1300EEHR_Extract id: HISO-1300EEHR_Extract.mg/EHR deplay/lame: mg/EHR baseLanguageCode: en-G8 commonNodel: defaultSpecialty: Images	
New Application	city	
Inspect Spreadsheet	Application logo hint. 60 x 60 px value: /applications/ISO-13666EHR_Extract-chyEHR/mages/chyEHRLogoTal/Small.png 🗙 💷	
► Database	Application favicon / hist. 16 x 16 px value: /applications/SOC-13606-EHP_Extract-cityEHPRI.ogsTail-Small.co 🗙 🚟	
Information Model	Splash page header logo hint: Recommended width is 720px value: Trouss. Its file selected.	
► Directory		
Users and Care Teams	City EHR	
Knowledge Sources		
▶ Patient Records		
► Cohort Searches	Splash page image, left hint: Recommended width 300px or 100px value: /applications/ISO-13006/EFR_Extract-chyEHR/imagesichyEHR/ing/Sial-Medium.png	
► Export Data Sets	Splash page image, right hirt: Recommended with 350pc or 180pc value. (Browne, No Bie selected.	
Redirect Notifications		
Manage Patient Access		
Test Web Service		

Creating a new application ID

11. A Dialogue Box will appear. Click Confirm.

	Quit Administration Deshboard Patient Search Patient Cohors In Tray Registration	
Hde		1011
	myEHR / application-parameters-built	*
	Application Configuration (seplication)	
	Iso12806:EIR_Extract of #100-13006.EIR_Extract.m;EIR display/lame: m;EIR baseLanguageCode en-GB commonMode/ defaultSpecialy:	
New Application	inger City	
	Application kogo Ant. 60 x 60 px value: Applications/SD-13665-EHR_Estrat-ts/EHR/imagesich/EHR_Lop/Tat/Small pn x	
	Application favicon / hirt 16 x 16 px value: /applications150-13606- imali ico 🗙 🚟	
	Splash page header fogo hint: Recommended widh is 720pr. value: Create new aplication	
	Create a new ch/ER application with the id. my/ER Continue Contin Continue Continue Continue Continue Continue Continue	
	m/OR Confine Cancel	
	Splash page image, left hint. Recommended width 360px or 180px value / applications/SO-13006/EHR Extract-chyEHR/images/chyEHRLoppTall-Medium.pog	
	opene programme met in in in international with 300pc of 100pc value. Beyond the first selected.	
Test Web Service		

Dialogue box to create new application

12. cityEHR will now create your new application. This may take a few moments. Your screen should now look like this, with three completed steps:

	uit Ammustreon Dashboard Patient Saarch Patient Saarch Patient Saarch	
Hde	chyEHR - Administration - New Application	
System	canadaENR / compiled-ormain-application	
	2028-8527119242443-96407973753 (1/1) (rinte-galación / simalinguintanian and minaminani / PT) 3005	
	(2)() (rest)-splatebox (rest)-splatebox self-splatebox (rest) (FI3.155 (2)) (rest)-splatebox (rest)-splatebox self-splatebox (rest) (FI3.155 (2)) (rest)-splatebox (rest)-splate	
pply All Language Packs		
iew Audit Log		
ew Application		
abase		
rmation Model		
rs and Care Teams		
wiedge Sources		
ient Records		
ort Searches		
ort Data Sets		
ct Notifications		
ge Patient Access		

Page displayed when new application is created

- 13. Once cityEHR has finished creating your application, navigate to "Quit" in the Purple Dashboard.
- 14. On the log-in page, you should now be able to select your new application in the drop-down menu.

Witten and the state of the sta	
and Click Start	
and click Start	
	Click Start

Selecting alternative application on cityEHR log on page

15. your application will be "empty" until you create, configure, and import an information model for your application. Navigate to section 13 called "Manipulating an Information Model" for instructions on how to do this.

Creating a Shipped Application

This section will teach you how to create an application that ships with cityEHR, such as Elfin or Elfin2. For this example, we will create an application with the id Elfin.

1. Navigate to Administration page and then to "New Application" under "System" in the menu on the left of the screen.

		Dashboard	Patient Search			dministration		
Hde	cityEHR - Administration - Manage Application Parameters	and the second					Show	1
▼ System	Application cityEHR 🗸		Debug Info: S	tartup Log		T	antis Edit)
Manage Application Parameters								
Manage System Parameters	Name.cityEHR Language: en-GB		1 N		A			
View Audit Log	Version: V1.7-2021-12-08-1 Date: 2021-12-08T10-09-57-32Z		1. INA	vigate to	Adm	iinistra	uon	
New Application	Users: 1							
Inspect Spreadsheet	Specialities 3							
▶ Database	Record A							
Information Model	Compositions: 911 2. Navigate to New Application							
► Directory	under "System"							
Users and Care Teams								
Knowledge Sources								
► Patient Records								
► Cohort Searches								
 Export Data Sets 								
Redirect Notifications								
Manage Patient Access								
Test Web Service								

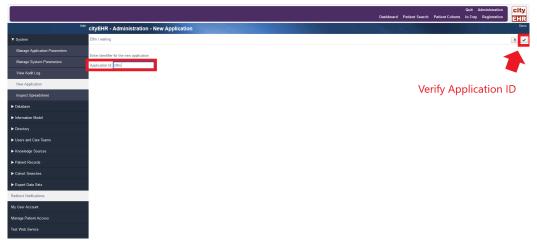
Navigating to New Application in Administration

2. Enter the shipped application id "Elfin" or "Elfin2" or "Ponseti". For this exercise, enter the application ID "Elfin2".

						Administration	
		Dashboard	Patient Search	Patient Cohorts	In-Tray	Registration	
	⁴⁶ cityEHR - Administration - New Application						
System	Elfin / waiting						
Manage Application Parameters	Enter identifier for the new application						
Manage System Parameters	Application Id. Effin						
New Application							
Inspect Spreadsheet							
Database							
Information Model							
Directory							
Users and Care Teams							
Knowledge Sources							
Patient Records							
Cohort Searches							
Export Data Sets							
edirect Notifications							
ly User Account							
anage Patient Access							
st Web Service							

Entering the shipped application name "Elfin2"

3. Click "Verify Application Id" (the check mark icon) in the top right of the display screen.



Verifying the new application "Efin2"

4. Your screen should now look like the one below if you have typed in Elfin2.

	Dashboard Patient Scarch Patient Cohors In Fire Registration
Hde	cityEHR - Administration - New Application 3000
	Effin / application parameters built
	^
	Application Configuration (application)
	lao-DMMEEM_Extract id: #ISO-1566EPR_ExtractElfin displayNamer Ethin baseLanguageCode: en-G8 commonModel: #ISO-1566EF8der1NOC defaultSpecially: #ISO-1566E84EF8der1NOC defaultSpecially:
New Application	
	Application logo hnt: 60 x 60 pc valve: lapplications/SO-1500FEHR_ExtractElInimages/allinicon prg 🗙 🐨
	Application function hint: 16 x 16 pic value:
	Create new aplication
	Create a new cityEHR application with the ldt.
	Confine Cancel
	Splash page haader logo hint. Recommended width is 720pc value: /applications/SD-13006-EHR_Estract-Efin/images/efinSplash png 🗙
	Splash page image, kef hrit: Recommended width 360pc or 180pc - value: /applications/ISO-1366 EHR Extract Efin/images/efin/opp yra
	TRISCI

Configuration page and dialogue box for Elfin

5. If you have typed in "Ponseti" as the application ID, your screen will look like the one below.

	How cityEHR - Administration - New Application	Show
▼ System	Ponseti / application-parameters-built	5 5
Manage Application Parameters		^
Manage System Parameters	Application Configuration (application)	
View Audit Log	Iso-13606:EHR_Extract id: #ISO-13606 EHR_Extract Ponseti displayName: dbbFOOT Database baseLanguageCode: en-68 commonModel: defaultSpecially: #ISO-13606 Folder P	onseti
New Application	club	
Inspect Spreadsheet	Application logo hint: 60 x 60 px value: /applications/ISO-13606-EHR_Extract Ponseti/mages/clubFootDBlicon pro	
► Database	Application favicon hint: 16 x 16 px value: /applications/ISO-13806-EHR_Extract-cityEHR/mages/cityEHRLogoTall-Small.ico 🗙 🚟	
Information Model		
► Directory	clubF00	• •
 Users and Care Teams 	Splash page header logo hint: Recommended width is 720px value: /applications/ISO-15806/EHR Extract-Ponset/images/dubFoot/BB8anner.png	
Knowledge Sources		
 Patient Records 		
Cohort Searches		
Export Data Sets		
Redirect Notifications		
My User Account	Splash page image, left hint: Recommended width 360px or 180px value: /applications/ISO-13606.EHR_Extract-Ponseti/images/BootsAndBarjog 🗙	
	Splash page image, right hint: Recommended width 360px or 180px value: Browse No file selected.	~

Shipped application, Ponseti configuration page

6. These are two applications that ship with cityEHR that can be created in your local database.

	¹⁶⁶ cityEHR - Administration - New Application	Stow
▼ System	Elfin / completed create application	5
Manage Application Parameters	2021-12-0113-33-29-80227 (PT7N31-096S)	
Manage System Parameters	(1/22) create-application / createApplication-saveParameters / PT2.3915 (2/22) create-application/ createApplication-saveParameters / PT2.3915	
	(J22) impot-informationModel / importingmatindhodi-imply / PT 107S (H22) impot-informationModel / importingmatindhodi-imply / PT 99 12S	
New Application	(5/2) import-informatice/Mode/ i importinformation/Mode/-same / PT9-113S (6/2) import-informatice/Mode/ i importinformation/Mode/-same / PT9-417S	
топ торганот	(7/32) import-informatice/Model / importInformation/Model-createCompositions / PT58.119S	
Inspect Spreadsheet	(8/2) import-informationModel / importinformationModel rebuil/Directories / PT25 5515 (9/2) import-informationModel / importinformationModel rebuil/2017 PT14195	
► Database	(10/2) import informationModel / importinformationModel-learFormCable / PTI 028 (11/2) create-spaciation / create/spaciationmont / 2019-05-1-1-16III-SpaciationFLS-DB-2018 xm / / PTI 9525	
Information Model	(12/2) import-informationModel / importingmentionModel energy (FTI 10/23) (13/2) import-informationModel / importingment/model energy (FTI 10/23)	
	(14/32) import-informationModel / importInformationModel-sawe / PT9.715S	
Directory	(1532) import-informationModel / importInformationModel-prevateOncicionary / PT27 8975 (1632) import-informationModel / importInformationModel-prevateOncicionary / PT108 4485	
Users and Care Teams	(17/32) import-informationModel / importInformationModel-rebuildDirectories / PT24.112S	
Knowledge Sources	(1822) import-informationModel / importinformationModel-iupdate_magaagePacks / PT1 0815 (1922) import-informationModel / importinformationModel-iupdate_Packs / PT1 0815	
	(2012) create-application / createApplication-import / 2020-12/40-7-Elm-Speciaty-FLS-DB-2020ml / PT7.457S (2132) import-information/dodd / import/import/mation/dodd-import/import/application/floating/import-information/dodd-import/import/import/application/floating	
Patient Records	(22/32) import-informationModel / importInformationModel-merge / PT7.494S	
Cohort Searches	(23/2) import-informationModel import / ImportInformationModel-awa / PTB 3935 (24/2) import-informationModel importInformationModel-awar / PTB 3935	
Export Data Sets	(25.22) import - informationModel / importinformationModel -create-Compositions / IPT1M5.3498 (26.22) import - informationModel / importinformationModel -categories / 2014.0658	
Redirect Notifications	(27/32) import-informationModel / importInformationModel-updateLanguagePacks / PT1.234S	
	(2022) import-information/Model / import/information/Model -/sarf-orm/Cache/ PT0 556S (2023) create-aptication / create-daptication-import/Model / PT0 555S	
	[0422] create-application / createApplication-importDirectories / PT1 0198 01/22 create-application / createApplication-setApplication(PT1 5145	
Manage Patient Access	(1112) triate application (relatedapplication) set/original (relation) (relat	
Test Web Service		
Test treb Genuce		

Page displayed when new application (Elfin) is created

- 7. Now click "Create New Application" (lightning bolt icon) and wait for it to load. This may take a few minutes.
- 8. Once it has finished creating, navigate to Quit in the Purple Dashboard
- 9. You should now be able to select "Elfin 2" as an application from the log-in page
- 10. Click Start and you will be navigated to the start-up home page for Elfin2.

Creating an Information Model

Creating and Configuring the Information Model

The information model for your EHR application can be created in a spreadsheet by copying the model for the default cityEHR application that is found in the files:

- cityEHR Specialty Feature Demo
- cityEHR Class Diagnosis
- cityEHR Class Drugs
- cityEHR Class LabTest

All four spreadsheets have a Configuration sheet at the front which looks as follows:

	24 24	
B15 Fx ≥ = allow A B C Parameter Values C 2 Application cityEHR cityEHR Base Ag 3 Specialty FeatureDemo cityEHR Feature 4 Layout Ranked Unranked 5 CRUD R CRU 6 Occurrence Single MultipleEntry 7 InitialValue Empty Pre-filled 8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form <		
A B C 1 Parameter Values Values 2 Application cityEHR cityEHR Base Ag 3 Specialty FeatureDemo cityEHR Feature 4 Layout Ranked Unranked 5 CRUD R CRU 6 Occurrence Single MultipleEntry 7 InitialValue Empty Pre-filled 8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section	D E F	
Parameter Values 2 Application cityEHR cityEHR Base Ag 3 Specialty FeatureDemo cityEHR Feature 4 Layout Ranked Unranked 5 CRUD R CRU 6 Occurrence Single MultipleEntry 7 InitialValue Empty Pre-filled 8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /	D E F	
2 Application cityEHR cityEHR Base Ag 3 Specialty FeatureDemo cityEHR Feature 4 Layout Ranked Unranked 5 CRUD R CRU 6 Occurrence Single MultipleEntry 7 InitialValue Empty Pre-filled 8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator / Section		
3 Specialty FeatureDemo cttyEHR Feature 4 Layout Ranked Unranked 5 CRUD R CRU 6 Occurrence Single MultipleEntry 7 InitialValue Empty Pre-filled 8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /		
4 Layout Ranked Unranked 5 CRUD R CRU 6 Occurrence Single MultipleEntry 7 InitialValue Empty Pre-filled 8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator / Yettion		
5 CRUD R CRU 6 Occurrence Single MultipleEntry 7 InitialValue Empty Pre-filled 8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /		
6 Occurrence Single MultipleEntry 7 InitialValue Empty Pre-filled 8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /	Ascending Descending	
7 InitialValue Empty Pre-filled 8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator / Section	CRD CRUD	
8 DataType boolean date 9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator / Yet		
9 EntryType Act Encounter 10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElemenType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /	Default	
10 ValueRequired Optional Required 11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /	dateTime time duration	
11 ViewType Folder Composition 12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /	Observation Procedure RegionOfInterest	
12 Rendition Form ImageMap 13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /		
13 ElementType memo media 14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /		
14 CohortSearch PrimarySearch Searchable 15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /	Standalone	
15 RBACtype allow deny 16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /	patientMedia calculatedValue enumeratedValue	
16 Roles clinician administrator 17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /	NotSearchable	
17 Scope Full Defined 18 FormLayout Form Section 19 PathSeparator /		
FormLayout Form Section 19 PathSeparator / /		
19 PathSeparator /	Expanded	
	Entry	
20		
20		
21		
Configuration Contents Folders Views Configuration Contents Folders Views Configuration) ▲ - ⊕ 1

Configuration page of information models

- 1. To begin doing this, open the cityEHR webapps folder
- 2. 2. Navigate to the following folder: *webapps/cityehr/WEB-inf/resources/apps/ ehr/resources/applications/ISO-13606-EHR-Extract-cityEHR/informationModel*



Folder path of information models You should land on the page above

- 3. Open the file named: Open the file named cityEHR-Specialty-CommonModel.
- 4. Go to File # Save a Copy # Rename it to your applicationId-CommonModel
- 5. Save your copy somewhere convenient.

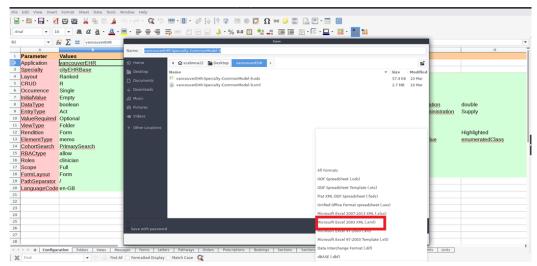
6. Close the original cityEHR-Specialty-CommonModel

- 7. Open the copy you have saved at the location you saved it in.
- 8. Change the ApplicationId on the Configuration page to exactly match the ApplicationId you assigned your new application. This is found on Line 2, Cell B on the Configuration Sheet (1st sheet).

				vancouverEHR-Specialty-Co	ommonModel-9.ods - LibreOffice (Tale		- 0
File	Edit View Insert	Format Sheet Data Tools W	indow Help					
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82	- 3	x Σ = vancouverEHR						
	A	в	с	D	E	F	G	н
1	Parameter	Values						
2	Application	vancouverEHR	tyEHR Base Application	City University, London				T
3	Specialty	cityEHRBase	cityEHR Common Model					
4	Layout	Ranked	Unranked	Ascending	Descending			<u></u>
5	CRUD	R	CRU	CRD	CRUD	UL	L	0
6	Occurrence	Single	MultipleEntry					fi fi
7	InitialValue	Empty	Pre-filled	DistinctValues	Default			78
8	DataType	boolean	date	dateTime	time	dayTimeDuration	yearMonthDuration	double
9	EntryType	Act	Encounter	Observation	Procedure	RegionOfInterest	SubstanceAdministration	Supply
10	ValueRequired	Optional	Required					
11	ViewType	Folder	Composition					
12	Rendition	Form	ImageMap	Denoted	Enumerated	Standalone	Chart	Highlighted
13	ElementType	memo	media	patientMedia	calculatedValue	staticValue	enumeratedValue	enumeratedClass
14	CohortSearch	PrimarySearch	Searchable	NotSearchable				
15	RBACtype	allow	deny					1
16	Roles	clinician	administrator					
17	Scope	Full	Defined	Expanded	Hidden			
	FormLayout	Form	Section	Entry				
19	PathSeparator	/						
	LanguageCode	en-GB (han	ge this to	NOUR				
21		Chan	ge tins to	y your				
22				-				
23		Appli	cation IC					
24 25		Appli	cation ID					
25								
20		Make sure you are	on the					
28		Configuration Page						
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					ookings Sections Sections (Task	s) Entries Entries (Actions)	Clusters Elements Units	
X	Find	🔻 🕎 👘 Find All	Formatted Display Match Cas	• 🕰				

Changing the Application ID within the information model

- 9. Save your changes (File # Save)
- Now, navigate to File ---> Save As --> keep the name the same --> change the format to .xml under "All Formats" in the bottom right of the pop-up window. See image below.



Saving the file as an XML

- 11. Close your windows
- 12. Open cityEHR back up.
- 13. Log-in using the same credentials
- 14. Now navigate to your EHR. This should be added in the drop-down under "You can access more than one application"



Selecting your application on cityEHR log on page Click Start

- 15. Navigate to Administration
- 16. Navigate to Information Model --> import information model on the menu on the left-side of the screen
- 17. Click Browse
- 18. Find the .xml file you just saved. Note: It will not work if you don't select the .xml file
- 19. Select the .xml file

-)→ ଙ ŵ	O localhost:808	0/cityehr/ehr/cityEHR/	Admin/?userId=admin&sessionId=cf9d9a60c7	ef4d4a84962e8dfb7a914f			90%	🖂 🕁		III\ 🖸	
		-		File Upload			earch	Patient Cohorts	Quit Adm In-Tray Re		my
	vancouverEHR		4 🏠 scabrera 22 🔚 Desktop 🛛 vancouve	rehr 🕨							51-0
System	The model must confo	습 Home	Name	-+	Size 57.4 kB	Modified 10 Mar					
	Ontology - OWL/XML Graph - graphML (crea Spreadsheet - MS 200	Desktop	vancouverEHR-Specialty-CommonModel-9.		2.7 MB	10 Mar					
	Information model for										
	information model for	J Music									
Import Information Model	_	D Pictures									
Local Information Model		⊨∎ Videos									
		+ Other Locations									
nowledge Sources											
						All Files 👻					
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Selecting new XML file for import

20. Import the information model using the icon at the top-right of the window. See image below.

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Button to begin import of new information model

- 21. You should now land on a page that shows you the completion of 8 steps.
- 22. Navigate to Quit.
- 23. Log back into your application.
- 24. Navigate to Administration
- 25. Navigate to Application Parameters found in the menu on the left-hand side of the screen.
- 26. Click "Edit"

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Editing Application parameters

27. Navigate to the "commonModel" option on the screen and ensure that the option #ISO-13606:Folder:cityEHRBase is selected (see below)

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Selecting the cityEHR Base folder

28. Click Save and Navigate to Quit

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Saving Application Parameters

- 29. Log back into your application
- 30. Navigate to Patient Search and Registration in the top-right fo the screen on the purple dashboard
- 31. You should see a fully formed Patient Search Page and a Registration Page. See below:

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Populated patient search page on your application

- 32. Navigate to Registration page
- 33. On the Registration page, register one patient. Click the menu button at the top right of the screen to finalize the registration.

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populated patient registration page on your application

Congratulations! You have registered one patient and made your own base application.

Activity complete! Quit cityEHR. If you would like to learn how to make changes to the spreadsheet to add Forms, Sections, Entries, Clusters, and Elements, please refer to the separate Information Modelling Guide.

Managing Information Directories

Element Directories

Directories are stored text that the user can edit. This section will show you how to access and edit element directories in cityEHR.

1. Navigate to the Admin screen of your chosen application. For this example, we will use Elfin 2.

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Test Web Service		

Manage application parameters within administration

- 2. Navigate to the "Directory" menu on the left of the screen.
- 3. Click on "Manage Directory"



Manage Directory administration page

- 4. Ensure that the correct Speciality and Directory Type are selected. For this exercise, it should be set at Elfin2 and Element, respectively.
- 5. In the "Directory" dropdown list at the top right of the screen, select the directory you wish to edit or add to. For this example, we have selected "Adverse Effects" as our Element Directory.

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Selecting the desired directory from the dropdown list

6. You can add or edit this directory by clicking on the "+" sign at the top left of the directory or by editing the text boxes.

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Cohort Searches					
ledirect Notifications					
anage Patient Access					
eat Web Service					

Editing the directory

7. Click the icon "Rebuild Directory" at the top left of the Manage Directory form to save and rebuild the directories into your application.

	Hos cityEHR - Administration - Manage Directory		\$
► System	BMI Interpretation Text (BitlinterpretationText) 💽 4	Specialty: Elfin 2 v Directory Type: Element v Directory: BM/ interpretation Text (BM/InterpretationText)	~ 1
► Databose	Display Name (required)	Value (default is Display Name)	-
Information Medel	Underweight	underweight	
	Normal BML Overweight	norma@MI overweight	
Manage Directory	Obese	obese Click	the icon
Import Directory		"Reb	uild
Users and Care Teams		Direc	tory" to
Knowledge Sources		save	and rebuild
Patient Records		direc	tories into
		vour	application
		,,,,,,,,,	
edirect Notifications			
anage Patient Access			
est Web Service			

Rebuilding the directory

8. Navigate to the screen that contains this directory (form, letter, etc.) and view your changes

Entry Directories

1. Entry Directories work like Element Directories, but for Entries. You can edit Entry Directories the same way as Element Directories. To do this, navigate to Manage Directory and then Select "entry" in the Element Type drop down.

		Quit Administration city
		Dashboard Patient Search Patient Cohorts In-Tray Registration
	cityEHR - Administration - Manage Directo	ny Stow
► System	Clinic Code (ClinicCode) 💽 0	Specialty: cityEHR Feature Demo 🔹 Directory Type: Element 😒 irrectory: Clinic Code (ClinicCode) 💙 🖆 💋
► Database	Display Hame (required)	Value (default is Display Name) Element Element
► Information Model		
▼ Directory		
Manage Directory		T
Import Directory		
Users and Care Teams		Calant Future in Directory Trues
Knowledge Sources		Select Entry in Directory Type
 Patient Records 		Drop-down
Cohort Searches		
Export Data Sets		
Redirect Notifications		
Manage Patient Access		
Test Web Service		
cityEHR Version Number - V1.7-2021-12-08-1	User: cbyEHR Administrator / Elfin 2 / en-gb Logged or: 09:23:19 Thursday, 9th Dec	amber 2021 Last topped on: 09/29:56 Thursday, 9h December 2021

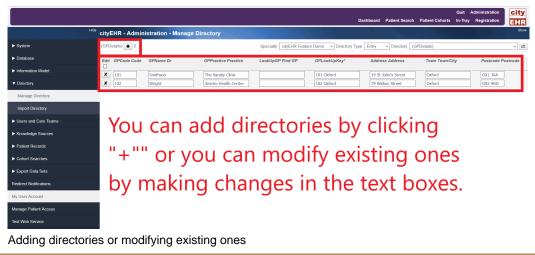
Selecting the type of directory

2. Select the Name of the Directory you want to modify.

	Quit Administration Ci Dashboard Patient Search Patient Cohorts In-Tray Registration				
	Hoe cityEHR - Administration - Manage Directory				
► System	(GPDetails) 💽 2 Specialty: [cityEHR Feature Demo 🗸 Directory Type: [Entry 🗸 Directory.] (GPDetails)				
Database Information Model	Edit GPCode Code GPPractice LoskUpRP Find 0P GPLoskUpKey* Address (CPCode) Image: Code Code GPH and Code Code				
Directory Manage Directory	101 Samtesion Life Variaty Canc 100 Uniter 13 Schoff Schoff Schoff Registration Configuration (RegistrationConfiguration) X 102 Wright Derich Health Centre 102 Quford 79 Walket				
Import Directory					
 Users and Care Teams 					
Knowledge Sources					
Patient Records Cohort Searches	Select which entry directory you would like to modify				
 Export Data Sets 	mouny				
Redirect Notifications					
My User Account					
Manage Patient Access					
Test Web Service					
cityEHR Version Number - V1.7-2021-12-08-1	User oft/DHR Administrator / Ellin 2 (en.gb. Logged on: 14:08:52 Thursday, 9th December 2021 Last logged on: 09:22:19 Thursday, 9th December 2021				

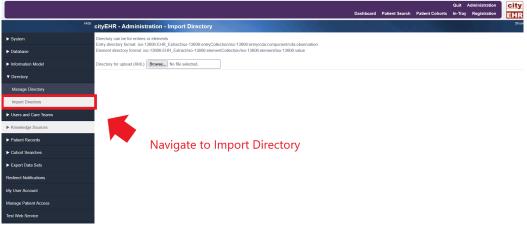
Selecting the directory to modify

3. You can make changes in the existing directories or add new ones.



Importing Directories

- 1. To import a directory, first navigate to the Administration page, and then to Directory in the menu on the left.
- 2. Now Navigate to "Import Directories" under "Directory".



Import directory page

3. Click the "Browse" button in the display window and navigate to the folder shown in the image below.

⊌ File Upload _							_		\times	-	ðХ
← → v 1]	≪ webapps > cityehr	> WEB-INF > resources >	apps > ehr > resources	> applications > ISO-	13606-EHR_Extract-cityEl	HR > directories	0 v				⊚ ≡
Organize • Ne	ew folder							(H · C	• •	Administration	
📰 Pictures 🕄 exist-data	A Name GPDetails	~	Date modified 4/3/2021 2:55 PM	Type XML Document	Size 7 KB					Administration	city EHR Show
 This PC 3D Objects Desktop Documents Downloads Music Pictures Videos Windows (C2 Windows (C2 		2. Select th	is file			-	ate to this ncat folder		m		
1	File name:						<u> </u>	All Files Open Car	~ ncel		
 Patient Records 											
Cohort Searches											
 Export Data Sets 											

Selecting GP details file for import

- 4. Select the file "GP Details".
- 5. Click the import button.

H Contraction of the second	64 cityEHR - Administration - Import Directory	Show
► System	Directory can be for entries or elements Entry directory format: iso-13606 EHR Extract/iso-13606 entryCollection/iso-13606 entry/cda component/cda observation	
► Database	Element directory format: los 13606 EHR_Extractios-13606 elementCollection/so-13606 element/so-13606 value	
Information Model	Directory for upload (XML); GPDetails xml 6 6 KB 🕱 Specially: Elfin 2	2
▼ Directory	Loaded file to: file:/C./Program%20Files%20(x86)/Apache%20Software%20Foundation/Tomca%209.0 Tomcat9SC/temp/xforms upload 7264020527020065563 tmp	
Manage Directory	Load data from file ready for processing. Data file from file ready for processing. Data file is XML with not EHR Extract	1
Import Directory	Filename: GPDetails xml	
Users and Care Teams	Type-text/xml Size: 6741	Import Button
Knowledge Sources	Content: file:/C//Program%20Files%20(x86)/Apache%20Software%20Foundation/Tomcat%209.0_Tomcat9SC/temp/xforms_upload_7264020527020085563 tmp	
▶ Patient Records	Root Element: EHR_Extract	
Cohort Searches	Uploaded file contains: entryCollection	
► Export Data Sets	enny-Generatori.	
Redirect Notifications		
My User Account		
Manage Patient Access		
Test Web Service		

Importing the GP details file

6. Now navigate to "Manage Directory" and navigate to your Entry Directories and you should be able to see "GP Details" as an option to edit!

Directory Look Up Using a Web Service

There is an example of a directory lookup using a web service on the Registration form in the Feature Demo information model that ships with cityEHR. The web service is a demonstration service that returns a randomly generated set of demographics data, given the patientId as an input parameter.

15-Aug-2024 - Patie	nt Registration Page load time:
Patient Demograp	nics
NHS Number	Hospital Number Overseas Patient
Title	Select Value v Forename Surname
Sex Assigned at Birth	Select Value v Date of Birth
Address	Town/City Postcode
GP Details	
Code	Dr Practice Find GP
Address	Town/City Postcode

Empty patient registration form

15-Aug-2024	- Patient	Registration	*	Page load time:
-------------	-----------	--------------	---	-----------------

Patient Demograp	hics
NHS Number	8372675093 Hospital Number Overseas Patient Find Demographics
Title	Select Value v Forename Surname
Sex Assigned at Birth	Select Value v Gender Identity Select Value v Date of Birth
Address	Town/City Postcode
GP Details	
Code	Dr Practice Find GP
Address	Town/City Postcode

NHS number filled in patient registration form

	Patient Demograph	lics
	NHS Number	8372675093 Hospital Number 15444231 Overseas Patient 🗌 Find Demographics 🗹 8372675093
	Title	Mr v Forename Corey Surname Collymore
	Sex Assigned at Birth	Male Gender Identity Male Date of Birth 13-1-1995
	Address	16 Sandy Lane Town/City Croydon Postcode CR1 9DW
(GP Details	
	Code	Dr Practice Find GP
	Address	Town/City Postcode

Lookup service used in patient registration form

Access Control - documentation coming soon!

cityEHR has a role-based access control system that can be configured to restrict user access to specific functions, based on the role of the user. In addition, users can be restricted so that they can access only the data of patients who are assigned to the care team(s) of which that user is a member.

Setting Up User Roles

Assigning Roles for a User

Role-based Access Control to Functions

Restricting Access to Care Team Patients

Care Pathways – documentation coming soon!

Health Lifestyle Pathway

- 1. To review the pathways functionality in cityEHR, we will navigate through the Healthy Lifestyle pathway in the cityEHR Feature Demo application.
- 2. Log-in to the cityEHR Feature Demo application.
- 3. Navigate to Patient Search and select a patient.
- 4. Navigate to Pathways in the blue dashboard. See below.

STRANGE, Susan (Miss) Born 26-Aug-1		idmentation city
Patient Id 86085254 NHS Number 96	Bailingerd Patient Sourch Patient Colorship In-Terr	كتلعك ا
In Progress New Hide	ests Summaries Forms Letters Pathneys Care Setting Chfrift Fathre Denn -	Show
▼ citytHR Feature Demo (3)	are Pathways	
	elect a template to create a care pathway for this patient.	

patient pathways page in cityEHR

5. In the menu on the left-hand side, navigate to the pathway called "Lifestyle Assessment".

STRANGE, Susan (Miss) Born: 26-Aug-11 Patient Id 86085254 NHS Number 96		Cuit Advantatration
n Progress New Hide	Events Summaries Forms Letters Pathways Care Setting Reg. Philosophia Philosophia Care Setting Reg. Philosophia Care Setting Reg. Philosophia Philosophia Care Setting Reg. Philosophia Ph	Show
▼ cityEHR Feature Demo (3)	Care Pathways	
Lifestyle Assessment	Select a lengiale to create a care pathway for this patient.	
Monitor Patient Progress		

Lifestyle assessment pathway

6. Click the checkmark icon at the top-right of the screen below the blue and purple dashboards. See below.

Untpl/stansmit Untpl/stansmit Untpl/stansmit Untpl/stansmit Untpl/stansmit Delvy (reg r)	ient /d 81082506 NHS Number	5-Aug-1947 (74 years) Gender: Female	Guit Administration 🧰 Daaisteerd Paterit, Search Paterit, Sea
holyb Advestment UBeryle Advestment UBeryle Advestment UBIS Caured	ogress New	Hóle Eventa Summaries Forms Letters Pathways Care Setting: clyEHR Feature Dano v	
Maps AdvanceM Bits [Cacked -] Maps AdvanceM Data (Maps and)	styEHR Feature Damo (3)	26-Apr-2022 - Lifestyle Assessment	Action Display Current Status 👻 👿 💩 🛩
Ange Ansandini Undry Ange Angenerative Ange Manmander v Ange Ma	style Assessment	Lifestyle Assessment	
der Paral Royeas Assessment Follow Up		Utstyle Assessment	
Silizz Charled V		Assessment Follow Up	
	ight Loss Program	Unartid v	

Starting the lifestyle assessment

7. Once clicking Start Pathway, you will notice that the italicized "Lifestyle Assessment" turns into a blue hyperlink. Click this.

Patient Id 81082506 NHS Number 9809	A1947 (74 years) Gender: Female	Guit Administration Bainhteord Patient Search Patient Cebarts in Tray Registration
In Progress New H	Kilo Eventa Summaries Forms Letters Pathways Care Setting objEHR Feature Dano 🗸	Store .
▼ cityEHR Feature Demo (3)	26 Apr-2022 - Lifestyle Assessment	Action Display Current Status 🗸 👿 🔊 🕨 🖨
Lifestyle Assessment	Lifestyle Assessment	
Lifestyle Assessment Assessment Follow Up	Unerplie Assessment	
Montor Patient Progress	Assessment Follow	
Weight Loss Program	Statuz Charted	
	Click here	

Lifestyle assessment hyperlink

8. Now click the "Action" button that appears at the top-right of the screen. The icon looks like an open book. See below.

RIVERS, Queenie (Mrs) Som 25-Aug-1 Patient Id 81082506 NHS Number 9809		Guit Advantation Gaabbband Patient Search Parlent Cobartis In-Tray Registration
In Progress New Ho	Events Summaries Forms Letters Pathways Care Setting ClyEHR Feature Demo 🗸	Show
▼ cityEHR Feature Demo (3)	26-Apr-2022 - Lifestyle Assessment	Action 🕮 splay Current Status 🧹 🗑 🕭 🗭
Lifestyle Assessment	Lifestyle Assessment Status in Progress v	
Lifestyle Assessment Assessment Follow Up	Ubstyle Assenser Deby (days) Onlow In Progress v Moler Administrator Deby (days) Onlow In Progress v	
Nanitor Patient Progress Weight Loss Program	Assessment Follow Up Statist Charted v	

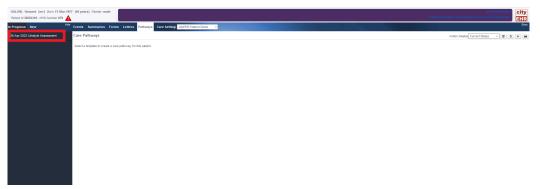
Action button for Lifestyle assessment

9. You should be navigated to a Lifestyle Assessment form. Fill out some values in this form.

RIVERS, Queenie (Mrs) Born 25-Aug Patient id 81082506 NHS Number 9809				Guit Administration city Disabacend Patient Search Parlent Cohorts In-Tray Registration
In Progress New 16	^{ise} Events Summaries <mark>Forms</mark> Letters Pathways C	re Setting: cityEHR Feature Denso v	and the second	Stor
	26-Apr-2022 - Lifestyle Assessment *			Highlight Entries - None - 🗸 🖬 🗑 🖨
	Fulfills care pathway action:			
	Lifestyle			^
	Level Of Mobility	Smoking Habits		
	Walking for a quarter of a mile	- Select Value Select Value Select Value		
	Walking up 10 steps without resting	- Select Value v		
	Stopping, crouching or kneeling	- Select Value		
	Doing chores around the house			
		Select Value		
	Walking from one room to another on the same level	- Select Value		
	Getting in or out of bed	- Select Value - v		
	Lifestyle Scale Questionnaire			
	Rezultz			
	Total 0 Questions applicable 0			
	Average score			
	Please answer all the questions.			
	Lifestyle Questions			
	I eat five portions of fruit and vegetables per day	Not applicable v		
	I get at least 8 hours sleep each night	Not applicable v		
	I exercise for 30 mins twice or more each week	Not applicable v		
	I drink moderate amounts of alcohol	Not applicable v		
	I tend to tell the truth in lifestyle questionnaires	Not applicable v		
	Body Mass Index			
	Body Maaa Index 🔶			

Empty Lifestyle assessment

- 10. Click the Publish icon at the top-right of the screen and click Commit Form.
- 11. Your in-progress pathway will appear on the left-hand side of the screen. Click on it.



In progress lifestyle assessment

12. You should now see that the Lifestyle assessment section of your pathway has been completed. You can now click the icon called "Progress" to continue documenting in the section Assessment Follow Up.

Using Sub-Pathways

- one with sub pathways

Pathways with Repeating Loops

- one with repeating loops

--- a lifestyle assessment - takes BMI, if your BMI is > 30 --> diet and exercise plan

Clinical Correspondence

Creating a Letter Template

Letter templates are word processor documents (either LibreOffice or MS Office) which contain fields that reference Sections, Entries or Element components in the clinical information model. The template can then be associated with a Letter composition that contains those components, which are then extracted from the composition and used to instantiate the fields in the template.

The letter templates are created outside of cityEHR as any regular document using LibreOffice Write or MS Word. An example of a template is shown below.

The cityEHR Clini	c NHS		
NHS Trust			
#ISO-13606:Section:LetterHeadLeft	#ISO-13606:Section:LetterHeadRight		
#ISO-13606:Section:LetterHeadTarget	#ISO-13606:Section:LetterHeadSupplement		
#ISO-13606:Section:I	LetterHeadSubject		

#ISO-13606:Entry:patientLetterIntroduction

000	#ISO-13606:Entry:patientLetterMedicationAdvice/#ISO- 13606:Element:patientLetterMedicationAdvice
	#ISO-13606:Entry:patientLetterCalciumAdvice/#ISO- 13606:Element:patientLetterCalciumAdvice
	#ISO-13606:Entry:patientLetterVitamindAdvice/#ISO- 13606:Element:patientLetterVitamindAdvice
5	#ISO-13606:Entry:patientLetterExerciseAdvice/#ISO- 13606:Element:patientLetterExerciseAdvice
	#ISO-13606:Entry:patientLetterSmokingAdvice/#ISO- 13606:Element:patientLetterSmokingAdvice

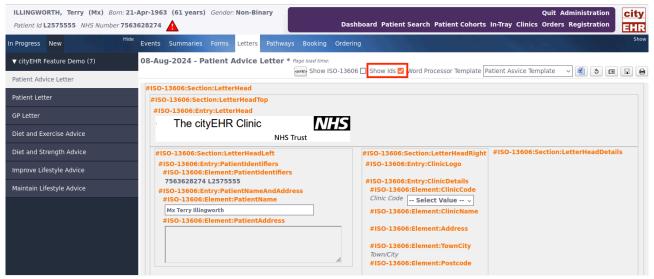
Page 1 of 2

Letter Template for Patient Advice using LibreOffice Writer

A Letter Template can contain any text and graphics, together with the fields which reference content in the patient record. The text for those fields is then pulled into the template from the Letter in cityEHR with which the template is associated.

#ISO-13606:Section:sectionId	The values of all Elements for all Entries in the specified Section
#ISO-13606:Entry:entryId	The values of all Elements in the specified Entry
#ISO-13606:Entry:entryId/ #ISO-13606:Element:elementId	The value of the specified Element

Note that the components with the referenced identifiers must be present in the Letter with which the template is associated – if not, then the referenced field will be blank. When developing templates you can find the identifiers to use by accessing a Letter in cityEHR running in debugging mode. Click the checkbox to Show Ids and the identifiers for each component will be displayed.



Show Ids When Running cityEHR in Debugging Mode

Importing and Associating a Template

Letter Templates can be imported from the Administration page by selecting the option for Manage Letters | Manage Letter Templates. This page lists all currently loaded templates and you can add a new one by pressing the + button in the top right menu and then browsing to the file location of the word processor document you with to import. Pressing the red X button next to any existing template in the list allows you to change (re-import) the associated word processor file.

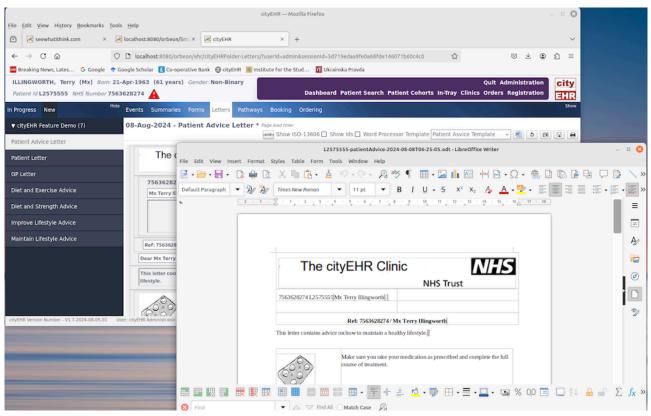
		Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration	city EHR
	Hide cityEHR - Administration - Manage Lette	r Templates	Show
► Directory			+
Users and Care Teams	Letter Template Name Template File	Content Type	
. Kanada dan Gaunaa	Patient Asvice Template Patient Asvice Template.odt 🗙	Shipped template	
Knowledge Sources	Attachment Template cityEHRAttachmentTemplate.docx	🗙 MS Word	
 Patient Records 	ODF Default Template ODF Default Template.odt 🗙	Shipped template	
▼ Manage Letters	MS Word Default Template MS Word Default Template.docx	Shipped template	
	GP Letter Template GP Letter Template .odt 🗙	Shipped template	
Manage Letter Templates	Patient Letter Template Patient Letter Template.odt 🗙	Shipped template	
Associate Templates			
Cohort Searches			
▶ Export Data Sets			
► Manage Scheduling			
 Order Communications 			
Manage Interfaces			
etter templates			

Once your chosen template is loaded you can associate it with one or more Compositions in the clinical information model by selecting Manage Letters | Associate Templates

	Dashboard	Quit Administration I Patient Search Patient Cohorts In-Tray Clinics Orders Registration	city EffR
Hide	cityEHR - Administration - Associate Templates	and the second	Show
► Directory	Specialty: cityEHR Feature Demo V Letter Template Name Patient Asv	rice Template v	Ø U
► Users and Care Teams	Template Variables	Associated Compositions	
► Knowledge Sources	#ISO-13606:Section:LetterHeadLeft #ISO-13606:Section:LetterHeadRight	All Compositions	
► Patient Records	#ISO-13606:Section:LetterHeadTarget #ISO-13606:Section:LetterHeadTarget	Patient Advice Letter	
▼ Manage Letters	#ISO-13606:Section:LetterHeadSubject #ISO-13606:Entry:patientLetterIntroduction		
Manage Letter Templates	#ISO-13606:Entry:patientLetterMedicationAdvice/ #ISO-13606:Element:patientLetterMedicationAdvice		
Associate Templates	#ISO-13606:Entry:patientLetterCalciumAdvice/ #ISO-13606:Element:patientLetterCalciumAdvice		
► Cohort Searches	#ISO-13606:Entry:patientLetterVitamindAdvice/ #ISO-13606:Element:patientLetterVitamindAdvice #ISO-13606:Entry:patientLetterExerciseAdvice/		
► Export Data Sets	#ISO-13606:Element:patientLetterExerciseAdvice #ISO-13606:Element:patientLetterExerciseAdvice #ISO-13606:Entry:patientLetterSmokingAdvice/		
► Manage Scheduling	#ISO-13606:Element:patientLetterSmokingAdvice #ISO-13606:Element:patientLetterSmokingAdvice		
Order Communications	#ISO-13606:Element:patientLetterAlcoholAdvice #ISO-13606:Entry:LetterSignatureBlock/#ISO-13606:Element:SignatoryName		
Manage Interfaces			
Associating letter templa	ates with compositions		

Using a Template with a Letter

The templates associated with a Letter are available to select when it is being edited. Select the template and press the Wordprocessor button.



Screenshot of Letter template being edited

ILLINGWORTH, Terry (Mx) Born: 21-	Apr-1963 (61 years) Gender: Non-Binary Quit Administration Cit	Y			
Patient Id L2575555 NHS Number 7563	1628274 🛕 Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration	R			
In Progress New Hide	Events Summaries Forms Letters Pathways Booking Ordering	ow			
▼ cityEHR Feature Demo (7)	08-Aug-2024 - Patient Advice Letter * Page load time:	-			
Patient Advice Letter		8			
Patient Letter	The cityEHR Clinic NHS				
GP Letter	NHS Trust				
Diet and Exercise Advice	7563628274 L2575555 Mx Terry Illingworth Clinic Code Select Value v				
Diet and Strength Advice					
Improve Lifestyle Advice	Town/City				
Maintain Lifestyle Advice	Ref: 7563628274 / Mx Terry Illingworth				
	Dear Mx Terry Illingworth				
	This letter contains advice on how to maintain a healthy				
	lifestyle.				
	Make sure you take your medication as prescribed and complete the full course of treatment.				

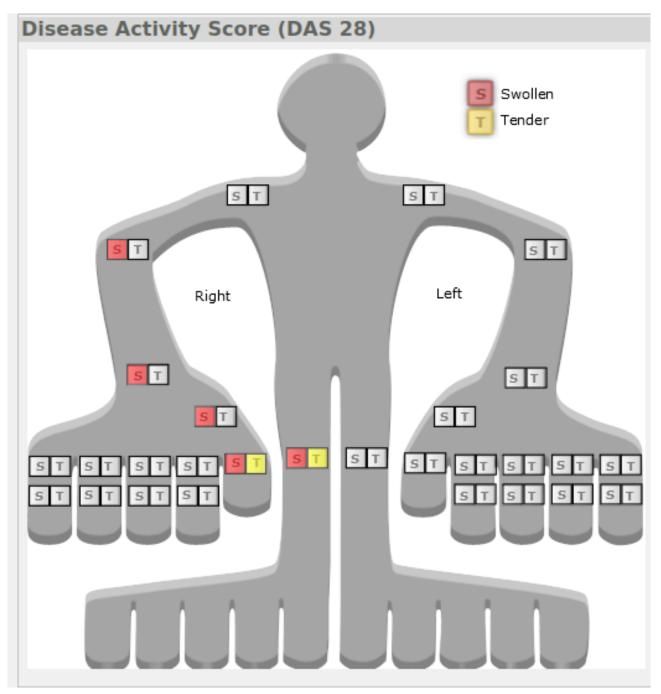
Patient advice letter template

Interactive Image Maps

There are two ways in which an Entry in the clinical model can be linked to an image for data entry and several ways in which the image maps themselves can be created. This section explains how the different types of linkage work, using the sample image maps that ship with the Feature Demo application.

Linking to a Simple Entry

The DAS 28 and DAS 68 forms in the Feature Demo contain examples of linking simple entries. The image map is used to set the values of Elements in the Entry.



DAS 28 Image Map Display

Disease Activity Score (DAS	; 28)		
1st IP (hand) right swollen 1st IP (hand) right tender 1st MCP (hand) right swollen Elbow right swollen Knee right swollen Knee right tender	<i>Count ESR Visual Analogue Scale DAS Score</i>	Swollen Joints 5 4 2 2.67	Tender Joints 2
Wrist right swollen			

DAS 28 Recorded Values

Linking to a Multiple Entry

The Family History form in the Feature Demo contains an example of an image map linked to a multiple entry; each click in the image map adds another entry, with the value of an enumerated value element set through the selection in the map.



Creating a New Image Map

There are several steps to creating a new image map for an Entry in the clinical information model:

- 1. Set the Rendition of the Entry to ImageMap
- 2. Create the SVG image map in an external file
- 3. Upload the SVG image map, linked to the Entry

To illustrate this process you can create a new image map for the

Creating Language Variants

Create Language Pack

	Quit Administration	my
	Dashboard Patient Search Patient Cohorts In-Tray Registration	EHR
Hide	newEHR - Administration - Manage Application Parameters	Show
▼ System	Specialties: HIV Data Collection 🗸 Debug Info: Startup Log	✓ <ami></ami>
Manage Application Parameters	Parameter Set Language Packs v Base language: en-gb - English / en-gb - English v	Edit 🗹
Manage System Parameters	Language Packs (languagePacks)	
Manage System Icons	➡ language	
Import Language Pack	language code: en-GB displayName: English	
Apply All Language Packs	Ianguage code: es-ES displayName: Spanish	
View Audit Log	Ianguage code: uk-UA displayName: Ukrainian	
New Application		
Inspect Spreadsheet		
► Database		
► Information Model		

Create new language pack

Enable user selection of language

		ny IR
Hide	newEHR - Administration - Manage System Parameters	Show
▼ System		<xmi></xmi>
Manage Application Parameters	Parameter Set Dynamic Parameters V Base language: en-gb - English / en-gb - English V Ed	dit 🗹
Manage System Parameters	Dynamic Parameters (dynamicParameters)	
Manage System Icons	Debugging Mode 🔽	
Import Language Pack	Record Audit Log 🔽	
Apply All Language Packs	Cache Forms Page load timeout PT10M	
View Audit Log	Check database node status (online/offline)	
New Application	Default application Id newEHR	
Inspect Spreadsheet	Default application IRI prefix: #ISO-13606:EHR_Extract: value: #ISO-13606:EHR_Extract:newEHR	
▶ Database	language code: en-GB displayName: English userSelection:	
► Information Model		
► Directory		

Enable user selection of language

Using the cityEHR API

Enabling API Access

cityEHR has an Application Programming Interface (API) exposed as a RESTful web service. API For any installation API access can be enabled in the Administration page System | Manage System Parameters by clicking the Edit check box, then checking API Access and pressing Save.

	Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Clinics Orders Registration
Hide	cityEHR - Administration - Manage System Parameters
▼ System	
Manage Application Parameters	Parameter Set Dynamic Parameters 🗸 Base language: en-gb - English / en-gb - English 🗸 Edit 🗹
Manage System Parameters	Dynamic Parameters (dynamicParameters)
Manage System Icons	Debugging Mode 🔽
Import Language Pack	Record Audit Log 🗹
Apply All Language Packs	Cache Forms API Access
View Audit Log	Page load timeout PT10M
New Application	Check database node status (online/offline)
Inspect Spreadsheet	Default application Id dityEHR
Show Wireframe	Default application IRI prefix: #ISO-13606:EHR_Extract: value: #ISO-13606:EHR_Extract:cityEHR language code: en-GB displayName: English userSelection:
▶ Database	language code: en-GB displayName: English userSelection:
▶ Information Model	
► Directory	
► Users and Care Teams	
► Knowledge Sources	
Enabling API access	

With cityEHR accessible on http://localhost:8080/cityehr, the API can be invoked using the URL

http://localhost:8080/cityehr//ehr/api

When the API is disabled, the response (as shown in the Firefox web browser) is a simple statement with guidance on how to enable it.

```
-<cityEHRapi>
-<cityEHRapiDisabled>
API is disabled for this installation. Set access using system parameters Enable API option
</cityEHRapiDisabled>
</cityEHRapi>
```

Disabled API message

When the API is enabled the response (as shown in the Firefox web browser) provides a summary of the API specification.

```
-<cityEHRapi>
+<command name="authenticate"></command>
+<command name="getApplicationList"></command>
+<command name="getDemographics"></command>
+<command name="getCompositionList"></command>
+<command name="getCompositionList"></command>
+<command name="getComposition"></command>
+<command>
</command>
</command>
```

Enabled API message

Each command is shown with an example call, response and a list of its parameters.

```
-<cityEHRapi>
 -<command name="authenticate">
    <description/>
    <example>/ehr/api/authenticate/?userId=user&password=secret</example>
  -<cityEHRapiResponse>
     <sessionId>863fa22fd0253e00333d96bb4417973a</sessionId>
    </cityEHRapiResponse>
  -<cityEHRapiResponse>
     <userAuthenticationFailed/>
    </cityEHRapiResponse>
  -<parameters>
     <parameter name="userId"/>
     <parameter name="password"/>
    </parameters>
  </command>
 +<command name="getApplicationList"></command>
 +<command name="getDemographics"></command>
 +<command name="getCompositionList"></command>
 +<command name="getComposition"></command>
 +<command name="postComposition"></command>
 </cityEHRapi>
```

API command parameters

There are two styles of API call - either style invokes the same command:

/ehr/api/authenticate/?userId=user&password=secret

or

/ehr/api/?command=authenticate&userId=user&password=secret

Using the cityEHR API

Authenticate and Start a Session

http://localhost:8080/cityehr/ehr/api/authenticate/?userId=admin&password=password

-<cityEHRapiResponse> <sessionId>863fa22fd0253e00333d96bb4417973a</sessionId> </cityEHRapiResponse>

http://localhost:8080/cityehr/ehr/api/authenticate/?userId=admin&password=wrong

-<cityEHRapiResponse> <userAuthenticationFailed/> </cityEHRapiResponse>

1. Get List of Applications

http://localhost:8080/cityehr/ehr/api/getApplicationList/? userId=admin&sessionId=863fa22fd0253e00333d96bb4417973a

Get Patient Demographics

http://localhost:8080/cityehr/ehr/api/getDemographics/? userId=admin&sessionId=863fa22fd0253e00333d96bb4417973a&applicationId=TSO-13606-EHR_Extract-cityEHR&patientId=K123456789

Get List of Patient Compositions

http://localhost:8080/cityehr/ehr/api/getCompositionList/? userId=admin&sessionId=863fa22fd0253e00333d96bb4417973a&applicationId=TSO-13606-EHR_Extract-cityEHR&patientId=K123456789

Get Patient Composition

/ehr/api/getComposition/? userId=admin&sessionId=863fa22fd0253e00333d96bb4417973a&applicationId=TSO-13606-EHR_Extract-cityEHR&patientId=K123456789&compositionId=2023-10-26T20-52-40.71*01-00-CityEHR-Form-BaseRegistration-admin&mime=application/pdf