

cityEHR Quick Start Guide Open Health Informatics John Chelsom and Stephanie Cabrera 10th September 2022

Table of Contents	
1. Introduction	5
2. Verifying the Installation	6
2.1. Log on	6
3. Exploring the Default cityEHR Application	9
3.1. Registering a New Patient	9
3.2. Entering Patient Data	
4. Creating Test Patients	
5. Finding Patients	21
6. Viewing the Patient Record	
6.1. Summary View and Charting	
6.2. Viewing the Longitudinal Record	
6.3. Annotations and Notifications	
7. Cohort Search	
7.1. Demographics	
7.2. Administrative Data	
7.3. Observations	
7.4. Combining Cohorts	
7.5. Printing Conort Lists	
8. Exporting Patient Data from cityEHR	
8.1. Exporting Data for an Individual Patient.	
8.2. Exporting Data for a Conort of Patients	
0.3. EXPOIL Data Sets	
9. Inspecting the XML Store	
9.1. Drowsing Dould Databases	
9.2. Drowsing Physical Databases	
10.1 Browso the Ontology in cityEHP	
10.2 Export the Ontology and Open in Protege	43. /2
10.3. Edit the Ontology and Open in Protege	
10.4 Load the Model to cityEHR	44 14
11 Manipulating the Information Model as a Spreadsheet	++ 45
12 Configuring a Runtime Application	48
12.1 Creating Your Own cityEHR Application – New Application	ייייייייייייייייייייייייייייייייייייי
12.2. Creating a Shipped Application	52
13 Creating an Information Model	56
13.1.13.1 Creating and Configuring the Information Model	56
14. Managing Information Directories	
14.1. Element Directories	
14.2. Entry Directories	
14.3. Importing Directories	
15. Access Control - documentation coming soon!	
15.1. Setting Up User Roles	
15.2. Assigning Roles for a User	
15.3. Role-based Access Control to Functions	
15.4. Restricting Access to Care Team Patients	
16. Care Pathways – documentation coming soon!	67
16.1. Health Lifestyle Pathway	67
16.2. Using Sub-Pathways	67
16.3. Pathways with Repeating Loops	67

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Page 2 of 70

17. Clinical Correspondence	68
17.1. Creating a Letter to the Patient	68
17.2. Creating a Letter to the GP	68
17.3. Printing and Exporting to Wordprocessors	69

Revision History

Date	Version	Changes	Owner
01 Mar 2012	1.0	First Version	JC
24 Sep 2013	2.0	For use outside OHI workshops	JC
10 Jan 2014	2.1	Prepared for first general release	JC
28 Jul 2014	2.2	Updated for new admin features	JC
01 Jul 2015	3.0	Updated and expanded	JC
01 Sep 2015	3.1	Added section on data export	JC
29 Sep 2017	4.0	Updated for cityEHR 1.6 release	JC
02 Feb 2020	5.0	Updated for cityEHR 1.7 release	JC
26 Aug 2020	5.1	Further updates for cityEHR 1.7 release	JC
28 Sep 2021	6.0	Extended to include letters, pathways, directories	JC
04 April 2022	7.0	Major revision	SC
10 Sep 2022	7.1	Updated for latest cityEHR release	JC

1. Introduction

This document describes the basic setup and features of the cityEHR starting from a vanilla installation.

If you don't have an installation of cityEHR yet then you need to follow the instructions in the cityEHR Installation Guide.

With the standard installation running under Tomcat, and if you have the Tomcat server running on your local machine, cityEHR will be available on the URL localhost:8080/cityehr or if running on a remote server, substitute the IP address of your server for 'localhost'.

cityEHR is an XML application which uses declarative code only: xhtml, xml, xforms, xslt and xquery. The source code can be found at

CATALINA_HOME/webapps/cityehr/WEB-INF/resources/apps/ehr

where CATALINA_HOME is the location 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.

This Quick Start Guide will refer to the ehr directory above as CITYEHR_HOME, so equivalent to CATALINA_HOME/webapps/cityehr/WEB-INF/resources/apps/ehr

The remaining sections of this Guide show how to register patients, enter and view clinical data, annotate a patient record, view and plot historical data, find patients, create cohorts of patients and export their data.

It also covers some administration functions (there are many such functions and only a few of them are covered in this guide): accessing user resources, generating test data, managing users and creating export data sets.

cityEHR is designed to be completely configurable, allowing clinicians to create enterprise-scale, secure health records systems that gather clinical data to recognised international standards, yet with data sets defined locally, by clinicians themselves.

So the Quick Start Guide also shows you how to create a new EHR system from scratch, including creation of the information model, configuration of patient labels, patient search criteria and cohort selection terms.

2. Verifying the Installation

2.1. Log on

With Apache Tomcat and cityEHR installed, the log on page of cityEHR can be accessed with the Firefox web browser using the address http://localhost:8080/cityehr if you have the Tomcat server running on your local machine or if running on a remote server, substitute the IP address of your server for 'localhost'.

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

Enter default user credentials. Press Log On to proceed. Log On	city EIR
cityEHR Electronic Heath Record © 2013-2020 John Chelsom Open Health Informatics Research Programme	

When you log onto cityEHR for the very first time using the credentials above, cityEHR can build a default application, with an example information model and configuration. You will be prompted to build the default application or start with an empty database; choose the option to build a default application.



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 below. It take a minute or so for this process to complete, so you will need to wait while before continuing.

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import-informationModel (24/69) importInformationModel-createCompositions Welcome cityEHR Administrator Authentication successful. Start Quit	city EHR
cityEHR Electronic Heath Record 2013-2020 John Chelsom Open Health Informatics Research Programme	

After the default application has been built during your first log-on, and for every other time you log on, the screen will look like this after you have authenticated:



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).

We will now start by exploring the default application.

3. Exploring the Default cityEHR Application

3.1. Registering a New Patient

At the start, the database for the cityEHR application does not contain any patient records, so the first step in using the application is to create some through the patient registration page.

- 1. First log on as the default user (admin / password) as in the steps above.
- 2. To register a new patient click on the Registration button in the purple system navigation pane at the top of the page. You should then see the registration form as shown below.

<u>File Edit View History Bookmarks</u>	Iools Help	- 🗆 🗙
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← → C' ŵ	0 0 25 localhost:8080/cityehr/ehr/cityEHRRegistration/?page=cityE	II\ □ ® Ξ
	Dashboard Patient Search Patient Cohorts In-Tray	Quit Admin city Registration
The second way i		
	26-Feb-2020 - Patient Registration	12
	Patient Demographics NHS Number Hospital Number Title Select Value Gender - Select Value Date of Birth Image: Control of Control	
oltyEHR Version Number - V1.7-2020-02-28-1 U	ser: cityEHR Administrator / cityEHR Feature Demo Logged on: 10:26:37 on Wednesday, 26th February 2020 Last logged on: 10:02:31 on Wednesday, 26th February 202	20

- 3. The Hospital Number is a required entry (shows with a pink background) and is used as the unique identifier for patients stored in the system. All other fields on the form are optional.
- 4. You can fill out the patient details by entering data into each of the fields NHS Number, Title, Forename, etc.
- 5. Alternatively, you can fill out all the patient details using a simulated demographics service, which is configured to generate a set of random patient demographics. In a live installation, such a service may be configured to lookup from a local EPR system or a national demographics service.
- 6. To use the lookup service, fill out the NHS Number (in the default application this simulates a national patient identifier) and then check the Find Demographics check box that will appear once an NHS number has been filled out.

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← → C O D =* localhost:8080/cityehr1-7-RC3/ehr/cityEHRRegistration/?userId=admin&sessionId=7e8cfae47ecf3bfb72ca780e9c7c71bc 99% ☆ ♡ d ♡ d ♡ d ♡ d ♡ d ♡ d 0 d d 0 d d 0 d <	5 ≡
Quit Administration	city
Dashboard Patient Search Patient Cohorts In-Tray Registration	EHR
08-Dec-2021 - Patient Registration *	5 I≣
Patient Demographics	
NHS Number 1234 Hospital Number 44521026 Overseas Patient Demographics 😰	
788e Select Value y Forename Jack Surname Hicks	
Date of Birth 18-4-1972 B Set Male v Gender Identity - Select Value v	
Street Address	
Assessment Stimut - Salect Value	
GP Details	
Code Dr Practice Find OP	
Street Address Town/City Post Code	
Contact for Monitoring	
Formal Advance Sumame Phone Number	

- 7. The demographics service will now fill out the remaining patient details, using a randomly generated set of demographics.
- 8. Similarly, you can fill out the GP Details by typing in the fields, or by using the Find GP service. The demonstration service is quite limited you must type 'Oxford' as the Town/City and then check the Find GP checkbox.
- 9. This will return a selection of two GPs select one from the dropdown and the GP details will be filled out for you.

vancouverEHR × +			
€ ⇒ ¢ ≙	O localhost 8080/cityehr/ehr/cityEH8Registration/?userid=admin&sessionid=cf969a60c7ef464a84962e8db7a914f	(99%) ···· 🗵 🟠	lin ⊡ st ≡
	Dathbo	Quit sard Patient Search Patient Cohorts In-Tri	Administration
	22-Mar-2022 - Patient Registration *		(a 💷
	Patient Demographics Not Kimber Taxas Houst Number Taxas Deprese Refer Concernent Refer Con		
	Tille Minime Bat Sumare Man		
	Gender Male • Date of Birth 10-3-1970		
	Address 2765 Oxford st Town/C/I/ Oxford Postcode OX4 0C2		
	Code 5989 Dr Applesauce Practice Family Find GP	Click Pog	ictor
	Address 1111 London St ToervClty Landon Postcode OV6 7EN	CIICK REY	ISLEI
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	0 0 Socialhost:8080/citvehr/ehr/citvEHRRegistration/?page=citvE	☑ ☆	
			Quit Admin city
S	Dashboard Patient Sea	arch Patient Cohorts In-Tray	Registration EHR
	26-Feb-2020 - Patient Registration *		6
	Patient Demographics		
	NHS Number 1234567890 Hospital Number 16871921 Overseas Patient	Find Demographics	
	Title Mr Forename Charles Surname	Carruthers	
	Gender Male V Date of Birth 13-1-1990		
	Address 17 Sandy Lane Town/City Crowdon		
	Postcode CD1 DEV		
	GP Details		
			Select Match 🗸
	Address Town/City oxford		- Select Match
	Postcode	1	01 Oxford
			*
		10.00.01 Wednesday, Obit Falance, O	000

- 10. Once all the details are entered (either by typing in the fields or by using the lookup services) then press the Register button at the top right of the form (the name of this button will show when you hold your mouse over it)
- 11. Provided that you have entered a Hospital Number and this hasn't already been used for a patient in the application, then you will be asked to confirm that you want to create a new re cord (see the figure below). This dialogue also allows you to select where to navigate to next in the record of the new patient you should leave this as the default (Go to Hospital Anxiety and Depression Scale form) so that you can continue to enter data for the patient.
- 12. If the Hospital Number is not entered or a patient already exists for that number then you will be shown an error message which must be dismissed (press the Cancel button) before

	유해 김 부분이는 부분이는 다르아 그 다르아 가지 구나 가지 구나 가지 않는 것이 못 했다.	Dashboard Patient Search	Patient Cohorts	Quit Administration In-Tray Registration	city EHR
				ومرجوبة والألا	
10-Dec-2021 - Patien	it Registration *				5 1=
10-Dec-2021 - Patient Patient Demograph NHS Number Title Gender Addreas GP Details Colo Addreas	It Registration * Note It Registration * Note It Registration * Note It rest:				

you can continue. In this case, fill out or change the Hospital Number and try again to register the patient.

13. Click the Register button and your patient should be registered!

3.2. Entering Patient Data

1. After registering the new patient you should be taken to the page for entering patient data through web forms. This page is on the 'Forms' tab – if for some reason this page is not loaded for you directly, then press the Forms tab and wait for the page to load.



- 3. 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 'ctyEHR Feature Demo' containing all the forms available and the others containing smaller sets of forms for Administration and for Clinical Care.
- 4. You can now select a form to enter new data for the patient. We will start using the form for HADS Hospital Anxiety and Depression Scale, so just press on this tab in the list on the left hand side of the page.



- 5. 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 just make sure you continue to the bottom of the page and select an answer for every question.
- 6. At the top of the HADS form are two calculated entries for Anxiety Score and Depression Score. These will be calculated as soon as you have entered the answers to all the guestions.

CHUMLEY-WARREN, Arthur (Mr) Bor Hospital Number 123456789 NHS Nu	n 01-Oct-1980 (33 years) Gender Male mber 123456789 Dashbo	Quit Admin ard Patient Search Patient Cohorts In-Tray Care Teams Registration	;ity HR
In Progress New Hide	Events Summaries Letters Forms Pathways Care Setting: c	ityEHR Feature Demo	Show
▼ cityEHR Feature Demo (13)	03-Oct-2013 - Hospital Anxiety and Depression Scale	🕬 🐨 Effective Time 03-Oct-201: 🗷 5:30:14 p.m. 🥑 👿 🜢	9
Allergies and Warnings	Anxiety Score 13 Moderate		
Laboratory Test Results	Depression Score 11 Moderate		
Update Patient Demographics	I feel tense or 'wound up'	Most of the time	
Feature Demonstration	I still enjoy the things I used to	Not quite as much	
Hospital Anxiety and Depression Scale	I get a sort of frightened feeling as if something awful is about to happen	Yes, but not too badly	
DAS 28	I can laugh and see the funny side of things	Not quite so much now	
DAS 68	Worrying thoughts go through my mind	A lot of the time	
Diagnosis	I feel cheerful	Not at all	U
Family History	I can sit at ease and feel relaxed	Usually	
Fracture Record	I feel as if I am slowed down	Nearly all the time	
Medication	I get a sort of frigthened feeling like 'butterflies' in the stomach	Not at all	
Body Mass Index	I have lost interest in my appearance	I don't take as much care as I should -	
Diet and Exercise Plan	I feel restless as if I have to be on the move	Quite a lot	
Patient Administration (1)	I look forward with enjoyment to things	As much as I ever did	
Clinical Care (2)	I get sudden feelings of panic	Very often indeed	4
cityEHR V0.98 User: cityEHR User Logged on	I can enjoy a good book or radio or TV program : 14:38:09 on Thursday, 3rd October 2013 Last logged on: 0000-00-00T00:00:00.00+00:00	Sometimes +	

7. Once you have finished entering data you can 'publish' the form to the patient record by clicking the Publish button at the top right of the form (the name of this button will show when you hold your mouse over it)

- 8. Press the "Commit Form" button with the radio button "Show patient record" selected.
- 9. Once the data have been committed to the patient record you will be moved back to the patient record folder which shows a list of all data in the record for your patient, including the HADS data that you just entered.



10. Return to the Forms tab and this time 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 image (called a homunculus).

CHUMLEY-WARREN, Cecil (Mr) Born: 30- Patient Id K1992183 NHS Number 75636282	-sep-1959 (60 years) Gender: Male Quit Admin 274 A Dashboard Patient Search Patient Cohorts In-Tray Registration
In Progress New Hide	Events Summaries Forms Letters Pathways Care Setting: CityEHR Feature Demo 🗸
▼ cityEHR Feature Demo (22)	25-Aug-2020 - DAS 28 * Page load time: PT4 2045 anni Highlight Entries - None - 🗸 💽 S 🖨
Current Observations	Disease Activity Score (DAS 28)
Allergies and Warnings	Count Swollen Joints 5 Tender Joints 2
Bone Chemistry	Tender Visual Analogue Scale
Laboratory Test Results	DAS Score 2.56
Update Patient Demographics	
Feature Demonstration	Right Left
Hospital Anxiety and Depression Scale	
DAS 28	GT A BT
Disease Activity Score (DAS 28)	ST ST
DAS 68	ST
Diagnosis	
Family History	
Fracture History	
Fracture Record	
cityEHR Version Number - V1.7-2020-03-02-2 Use	er: otlyEHR Administrator / otlyEHR Feature Demo Logged on: 10:09:44 on Tuesday, 25th August 2020 Last logged on: 14:33:58 on Thursday, 19th March 2020

- 11. 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 you will see the DAS Score calculated.
- 12. The DAS Score will be recalculated each time you select a tender or swollen joint or change either the ESR or Visual Analogue Score.

In Progress New Hide	^{le} Events Summaries Forms Letters Pathways Care Setting: CityEHR Feature Demo 🗸	Show
▼ cityEHR Feature Demo (24)	10-Dec-2021 - DAS 28 *	Highlight Entries - None - 🗸 💽 🔊 🖨
Current Observations	Disease Activity Score (DAS 28)	î î
Allergies and Warnings	Count Swollen Joints 2 Tender Joints 2	
Bone Chemistry	Tender Visual Analogue Scale 6	
Laboratory Test Results	DAS Score 3	
Update Patient Demographics		
Feature Demonstration	Right Left	
Hospital Anxiety and Depression Scale	Publishing Form	
DAS 28		
Disease Activity Score (DAS 28)	SIT Form will be committed to the patient record - data cannot be modified once committed.	
DAS 68	ST S	
Diagnosis		
Family History		
Fracture History		
Fracture Record		
Medication		
Patient Images		
Body Mass Index		
Bone Mineral Density		
COMPANY AND IN MARK		

13. 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 you will see the DAS 28 data stored in the patient record.



- 14. Press Commit Form on the Dialogue Box that appears after clicking Publish.
- 15. Return to the Forms page (press the Forms tab on the menu) and this time select the Fracture Record form.
- 16. 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.

CHUMLEY-WARREN, Ceolii (Mr) Born: 3 Fatient Id K1992188 NHS Number 768382	0-16-0-1660 (80 years) - Gender: Male	Guit Admin City Dashboard Patient Search Patient Cohorts In-Tray Registration
In Progress New Hide	Events Bummarles Forms Letters Pathways Care Betting: cit/EHR Feature Demo	. 2001
▼ cityEHR Feature Demo (22)	25-Aug-2020 - Fracture Record * Age Record Structure Structure	www Highlight Entries - None - 🙀 🕼 😆
Current Observations	Fractures	^
Allergies and Warnings	Right Left	Pecture
Bone Chemistry	Skull OO Clobe	X 09-7-2015 Z Left Clay/cle V Traumatic V Yes V
Laboratory Test Results	Mandible Clavical D Carvical D Carvical D	
Update Patient Demographics	Scapula	
Feature Demonstration	Ribs Thoracic 0 Spind Spind Thoracic 0 Spind SpindSpind Spind	
Hospital Anxiety and Depression Scale	Prostant Humerus - A Second A	
DAS 28	Sacrum A C C C C C C C C C C C C C C C C C C	
DAS 68	Coceya Coceya Tia	
Disgnosis	Breetcocharderic And Control of C	
Family History	Colors (distatration) Thi2-	
Fracture History	Metacarpais 12	
Fracture Record	(hand) superior public rans	
Fractures	- distal > Femur distal > Femur	
Medication	Patella Or una	
Patient images	pressinal Tibia	
Body Mass Index	distal Fibula	
Bone Mineral Density	Calcaneus	
Diet and Exercise Plan	Tarsals Metatarsals	
Book Services	Phalanges (foot)	
Lifestyle	Current Practices	
Blood Pressure History		
Lifestyle Scale Questionnaire		
cilj GHR Varsion Kumber- V1.7-0000-00-00-0	Dif Semisrar ing Dif Rause Dens Lugges on toblets of Takasy, 35h Juger 5000 – Laungges on tid SSS of Thursey, 14h Norh 500	~

- 17. This form has an image of a skeleton that can be used to select fracture sites. Click on the red squares in the image to select a site this will then add a new line to the list of fractures where you can fill out the date and other details of the fracture.
- 18. You can also add fractures by pressing the small '+' button at the top of the fracture list, or remove a fracture by pressing the 'x' button to its left in the list.
- 19. Once again, publish the form to the patient record when you are done.
- 20. Return to the Forms tab and select the Medications form.

CHUMLEY-WARREN, Cecil (Mr) Bom: 30 Patient Id K1992183 NHS Number 756362827	-Sep-1959 (60 years) 74	Gender: Male				Dashboard	Patient Search	Patient Cohorts	In-Tray	Quit Admin Registration	city
In Progress New Hide	Events Summaries	Forms Letters Pathwa	ys Care Setting:	oityEHR	Feature Demo						Show
▼ cityEHR Feature Demo (22)	25-Aug-2020 - Me	dication * Page load time. FT2.87	75					Highlight Entr	ies - None		
Current Observations	Medications										-
Allergies and Warnings	Current Medication	•	1. mm		Start data						
Bone Chemistry	×	Vitamin D	lating		22-8-2017						
Laboratory Test Results	×				25-8-2017						
Update Patient Demographics	Previous Medicatio	Drug name									
Feature Demonstration	Current drugs 2	Cancel									
Hospital Anxiety and Depression Scale		Formulary Steoporosis Drugs	-								
DAS 28		+ Methotrexate Hydroxychloroguine									
DAS 68		- Leflunomide									
Diagnosis		- Humira									
Family History		- Cyclophosphamide									
Fracture History		- Risedronate									
Fracture Record		- Calcichew D3 - Vitamin D									
Medication		- Zoledronate - Diclofenac									
Medications		- Ibuprofen - Bendroflumethazide									
Patient Images		- Omeprazole - Lansoprazole									
Body Mass Index		- Aspirin									
Ross Minoral Desciby ch/EHR Version Number - V1.7-2020-03-02-2 User: ch/E	HR Administrator / cityEHR P	Septrin	Juesolay, 25th August 20.	20 Last log	gged on: 14:33:58 on Thursda	y 19th March 2020					~

21. You can enter data for either Current Medications or Previous Medications by pressing the appropriate '+' button.

- 22. To enter the name of the medication you can either start typing in the input box, or press the very small '...' button to its right, which will bring up an expandable list of medications from which you can select. Its probably best to use this navigation list for you first few entries and then try typing names after you have seen what medications are available.
- 23. 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 small drop down selection of matching medications.
- 24. 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.
- 25. Once again, publish the form to the patient record when you are done.
- 26. Return to the Forms tab and select the Body Mass Index form.
- 27. 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.



28. Publish the form.

🕆 📜 « A	pache Software Foundation Tomcat 9.0_To	mcat9SC2 > webapps > city	ehr > WEB-INF > reso	urces > apps >	ehr > resources > userResources > v 🖸 🔎 Search userResources
organize • New fold	der				
Desktop ^	Name	Date modified	Туре	Size	Find your Tomcat folder, and
Documents	defaultInformationModel	12/8/2021 9:52 AM	File folder		navigate to this file Location
E Pictures	informationModelTemplates	12/8/2021 9:52 AM	File folder		
This DC	areTeams	4/3/2021 2:55 PM	XML Document	2 KB	
	cityEHRAttachmentTemplate	7/25/2018 1:29 AM	Microsoft Word D	13 KB	
J 3D Objects	EHR_Extract-LauraAbernathy	4/3/2021 2:55 PM	XML Document	_705 KB	
Desktop	EHR_Extract-TimothyAbernathy	4/3/2021 2:55 PM	XML Dog	706 KB	Select this patient
Documents	myEHRFavicon	12/7/2021 3:20 PM	Icon	1 KB	
Downloads	myEHRLogoTall - Medium	3/2/2020 8:08 AM	PNG File	7 KB	
Music	myEHRLogoTall-Small	3/2/2020 8:10 AM	PNG File	4 KB	
E Pictures	PatientRecordImport	8/26/2021 4:50 PM	OpenDocument S	13 KB	
Videos	README	4/3/2021 2:55 PM	Text Document	2 KB	
🐛 Windows (C:) 🗸	users	4/3/2021 2:55 PM	XML Document	15 KB	
Cile					All Files

4. Creating Test Patients

To continue exploring cityEHR you will need a larger sample of test patients – these can be generated using functions available on the Administration page, which is accessed by pressing the Admin button on the main system menu (top left of the page).

- 1. On the Admin page, in the menu in the left hand pane, select the menu option "Database" and then the sub-task for Generate Test Data.
- 2. Press the Browse button to load a file containing a sample patient record.

		Dashboard	Patient Search	Patient Cohorts	In-Tray	Quit Admin Registration	city
	Hoe cityEHR / ISO-13606-Folder-FeatureDemo - Administration - Generate Test Data						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-13000:EHR_Extract containing a set of cda:ClinicalDocument elements Every cda:ClinicalDocument must be for the same patient as defined by the iso-13806: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	User: cit/EHR Administrator / No specialty loaded. Logged on: 09:54-10 on Thursday, 27th August 2020 Last logged on: 00:52:24 on Thursday	y, 27th August 2020					

- Press the Browse button. Navigate to your TomCat folder and follow the path: webapps/cityEHR/WEB-INF/resources/apps/ehr/resources/userResources. Select the file called: EHR_Extract-TimothyAbernathy.xml (If you want to see what this file looks like, then you can open it separately using a programmers file editor or plain text editor).
- 4. Once you have selected the file, it should load to cityEHR and you will see the page as shown below.

Hide	cityEHR - Administration - Generate Test Data	Show
► System	ABL Bio, existipol 70AL Bio, centaning a template record.	
▼ Database	The file must contain a single site 1986 EHR, Estatat containing a set of calc linicalDocument elements Every calc clinicalDocument must be for the same patient as a defined by the iso1980 EHR Estated.	
Database Access Layer	Template CDA documents FMT Elder Toward Professor Wards & For this example, set your parameters to match the	
Manage EMPI	Report Progress 2 Number of records 10 Ones here	5
Generate Test Data	Gender Bender Shirtling Mahar Marat Marat Sala Event	
Browse Physical Databases	Average step time Percentage 0 50 50 P	
Browse Logical Databases	Number of records 0 5 5 Formanne v Nala formanne v No formanne v	
Information Model	Patient klentifiker meder (E. Datient klentifiker kannth (a. 16, -21)	
► Directory	s means domining press where domining means * > 1 > 1 > 1 > 1 > 1 > 1 > 1 > 1 > 1 >	
Users and Care Teams		
► Knowledge Sources	Ladded file to: fler.Ch.Apachet/s20Seharet/s20Foundation/Tomcat%2019Tomcat9SC2/temp/sforms_upload_7648499084904652570 tmp Ladd.dtaf.form fler.radiy for processing.	
Patient Records	Data file is XML with not recordSet	
► Cohort Searches	Finance: EMR_Extract-innothyAbernathy.xmi Type: test/xmi	
► Export Data Sets	Size: 72576 Contest: Nev. // Apache%20/Soutware	
Redirect Notifications	Root Element: recordSet	
My User Account	Uploaded file contains:	
Manage Patient Access	EHR_Extract: K1476889	
Test Web Service		
	Quit Admin City	
	Dashboard Patient Search Patient Cohorts In-Tray Registration	
	^{Hose} cityEHR / ISO-13606-Folder-FeatureDemo - Administration - Generate Test Data	
Information Model	XML file, or bip of XML file, containing a template record.	
Directory	The file must contain a single iso-1800:EHR_Extract containing a set of cda:ClinicalDocument elements Every cda:ClinicalDocument must be for the same patient as defined by the iso-1800:EHR_Extract	
▶ System	Template CDA documents: EHR_Extract-TimothyAbernsthy.xml 705.8 KB 🗙	
▼ Database	Report Progress 🗹 Number of records 100	
Run XQuery	Processed records 0 / 100 Gender Gender	
Load Document to XML Store	Step time Value - Not set Male Female Unspecified Average step time Percentage 0 50 50 0	
Generate Test Data	Number of records 0 50 50 0	
Browse Databases	Porename vio forename vi Pemale forename vi No forename v	
Users and Care Teams		
Knowledge Sources	Set date of birth 💌 Minimum age (years) 18 Maximum age 65	
► Patient Records	Loaded file to: file/C//cityEHR/tomcat8-5/temp/xforms_upload_2971784947581219203.tmp Load data from file, ready for processing.	
► Cohort Searches	Data file is XML with root: recordSet	
► Export Data Sets	Filename: EHR_Extract-TimothyAbernathy.xml Type: text/xml	
Redirect Notifications	Size: 722578 Content: file:/C/oityEHR/tomcat8-8/temp/xforms_upload_2971784947581219203.tmp	
My User Account	Root Element: recordSet	
Manage Patient Access	Uploaded file contains:	
Test Web Service	EHR_Extract: K1476889	
	There with 2018 Betroformetry (No searching Index) — Leonad on (NS2-1-0) on Theorem, 1779 January 1770. — Law Leonad on (NS2-7-1) on Theorem, 1779 January 1770.	
ungerint version number - V1.742020-07402-5		

- 5. By default, the parameters are set to generate 100 test records, split evenly between male, female and unknown gender, aged between 18 and 65.
- 6. Change the number of records to Male: 5 and Female: 5. If you would like, you can keep the default of generating 100 records, but be aware that it can take up to 5 seconds to generate each record, so 100 records may take over 5 minutes to complete. You will probably just want to generate records for Male and Female patients, so you can change the percentages to 50 in each of these columns and the Unknown percentage to 0. The actual number of records to be generated will change as you change the percentages (and an error message will appear whenever the percentages don't add up to 100).
- 7. In the columns for Male and Female patients, change the Forename selection to Male Forename and Female Forename as appropriate.
- 8. Once you are happy with the parameters, press the small button on the right hand side of the page to generate the test records. You will need to wait a while until this process is finished.

				Quit Administration City Dashboard Patient Search Patient Cohorts In-Tray Registration
	cityEHR - Dashboard			
	Database Nodes Data not available Last result: 12/20 16 on 184 Concettor	Total Patients 21 Patients	Total Documents 911 Documents	In Progress 13 Forms 12 Lotters 1 Notifications 0 Pathways 0 Just result: 12 28 (14 or (14 cos 282)
	Users 1 Active 1 Inactive 0	Care Teams O Care teams Last Insuff: 12 32 16 on 68 Dec 2021	Your Tota '10'	l Patients will be
Hide	citvEHR - Administration - Generate Tes	st Data		Show
► System	XML file, or zip of XML file, containing a template record.			
▼ Database	Files created by the patient export function can be loaded di The file must contain a single iso-13606:EHR_Extract conta	irectly. ining a set of cda:ClinicalDocument elements	-	
Database Access Layer	Every cda:ClinicalDocument must be for the same patient as	s defined by the iso-13606:EHR_Extract	Press	this button to generate test data
Manage EMPI	Report Progress Number of records 10			
Generate Test Data	Processed records 0 / 10 Gender			
Browse Physical Databases	Step time Value - Not set - Average step time Percentage 0	Male Female	0	
Browse Logical Databases	Number of records 0	5 5	0	
► Information Model	Forename No forename	Male forename Female forename	No torename 🗸	
► Directory	Patient identifier prehx K P	atient identifier length 8 (5 - 21)		
► Users and Care Teams	Set date of birth 🔽 Winimum ag	e (years) 18 Maximum age 65		
► Knowledge Sources	Loaded file to: file:/C:/Apache%20Software%20Found Load data from file, ready for processing.	dation/Tomcat%209.0_Tomcat9SC2/temp/xforms_upload_7	7648499084040662670.tmp	
► Patient Records	Data file is XML with root: recordSet			
► Cohort Searches	Filename: EHR_Extract-TimothyAbernathy.xml Type: text/xml			
► Export Data Sets	Size: 722576 Content: file:/C:/Apache%20Software%20Foundation/Tomo	at%209.0_Tomcat9SC2/temp/xforms_upload_7648499084	040662670.tmp	
Redirect Notifications	Root Element: recordSet			
My User Account	Uploaded file contains:			
Manage Patient Access	EHR_Extract: K1476889			
Test Web Service				

- 9. Once the test data is generated, your screen will look like this:
- 10. Now you can press the Dashboard button in the main System Menu (top of the page) to leave the Admin page and view the Dashboard, which should now show that you have the new records loaded.

Recent Care Team					
95325737 - Winston	Patient Search K: Search time: PT0.7335 / PT0.4185				Order by Hospital Number 🗸 🔍 S
-	Patient Id K Surmame Gender Select Value v Jay of Birth -Select Value - v Day of Birth -Select Value - v Month Consultant	- Select Value - v Year	Date 📑		
	Patient Id	Surname	Forename	Gender	Date of Birth
Enter "K" for Patient ID	K9954501	Walters	Zak	Male	03-Sep-1986
Contraction and the contraction of the second states of the second state	K9897575	Borras	Angela	Female	15-Nov-1944
	K9757100	Borras	Hilary	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
	Υοι	ır Test Pa	tients 🔻		

5. Finding Patients

Once you have some patients recorded in your database you can search for them and select the patient whose record you want to view or input data for.

1. To find a patient, press the Patient Search button in the purple system navigation pane at the top of the page. You should then see the search form as shown below.

					Dashboard	Patient Search	Patient Cohorts	In-Tray	Care Teams	Quit Admin Registration	city EIII
Recent	In-patients										
		Patient Sea	rch				Inpatients Only] Order by	Surname		15
		Patient Id		Surname		Forename					
		Gender	Select Value								
		Day of Birth	Select Value	Month	Select Value •	Year		Date		2	
		Consultant									
		Enter search cri	teria to find patien	t.							
cityEHR V0	.98 User: cityEHR User	Logged on: 14:38:09 on Thursda	ay, 3rd October 2013	Last logged on: 0000-00	0-00100:00:00.00+00:00						1

- 2. Enter some search criteria and press the Search button at the top of the form (the name of this button will show when you hold your mouse over it). Alternatively, just press the Enter key when you have typed into any of the text input fields.
- 3. Since the test patient data is randomly generated, you can be fairly sure that at least one patient exists with a surname starting with any commonly occurring letter, or try searching for patient identifiers like "K" (assuming you kept the default format for patient identifiers when you generated the test data).

Recent Care Team					Maket N	
95325737 - Winston	Patient Search K: Search time: PT0.733S / PT0.418S					Order by Hospital Number V Q 5
	Patient Id K	Forename				
	Gender - Select Value - v					
	Day of Birth - Select Value V Month	Select Value V Year	Date			
	Consultant					
	Displaying 1 to 10 of 20 patients Page	1 of 2 • •				
	Patient Id	Surname	Forename	Gender	Date of Birth	
	K9954501	Walters	Zak	Male	03-Sep-1986	
	K9897575	Borras	Angela	Female	15-Nov-1944	
	K9757100	Borras	Hilary	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	
		D (')				

Select a Patient

- 4. The results from your patient search are listed with basic demographics details. If there are no results then you will be informed of this. If too many patients match your search (for example, this may happen if you just search for Male patients) then you will be informed that too many patients were found and you need to enter more specific search criteria.
- 5. Once some patients have been found in the search, the list of patients will be displayed and you can now select one to enter their record. Note that this list appears even if there is only a single patient found this allows you to verify that the correct patient was found, before you move to view their record.
- 6. When you click to select a patient from the list, you will be taken to the default summary view for that patient's record, which will include features for viewing, charting and annotating the record. The next exercise will walk you through this process.

Views	^{se} Events Summaries Forms Lette	rs Pathways Care Setting: ctyEHR Feature Demo 🗸	
▼ cityEHR Feature Demo (10)	Bone Chemistry – Messages		View Historic Data 🗸 🖨
Bone Chemistry – Messages	00:08:32 on 17-Jul-1998 - Bon	e Chemistry Results	
00:08:32 on 17-Jul-1998	Bone Chemistry		
Bone Chemistry Results	Bone Chemistry		
U1:59:30 on 22-Mar-1996 Bono Chomistry Results	Sample Date Analyte	Measurement	
19:43:48 on 13-Feb-1998	17 Jul 1998 CTX	0.01	
Bone Chemistry Results		4.0	
11:33:06 on 14-Jan-1998		140	
Bone Chemistry Results	□ 17-Jul-1998 Calcium	2.48	
20:37:17 on 22-Oct-1997	17-Jul-1998 Alkaline phospha	tase 84	
Bone Chemistry Results	17-Jul-1998 Vitamin D	44	
21:57:31 0fl 04-May-1997 Bona Chamietry Desulte	17-Jul-1998 GFR	126	
16:08:33 on 31-Jan-1997	□ 17-Jul-1998 Creatinine	47	
Bone Chemistry Results	17-Jul-1998 MDRD	180	
16:58:02 on 20-Jun-1996			
Bone Chemistry Results			
21:14:45 on 12-Apr-1996	01:59:30 on 22-Mar-1998 - Boi	e Chemistry Results	
Bone Chemistry Results	Bone Chemistry		
00:24:38 on 24-May-1995	Bone Chemistry		
22:52:02 on 15 Apr 1995	Sample Date Analyte	Magging	
Bone Chemistry Results	D 22 Mar 1009 CTV		
04:40:01 on 07-Feb-1995	22-Mar-1996 CTX	0.33	
Bone Chemistry Results	22-Mar-1998 P1NP	90.2	
Dation Made	22-Mar-1998 Alkaline phosph	atase 87	
Patient Alerts	22-Mar-1998 Vitamin D	69	
Fracture History	22-Mar-1998 GFR	83	
	22-Mar-1998 Creatinine	67	
Medication History	22-Mar-1998 MDRD	119	
Diagnosis History	10-43-49 op 13 Eeb 1999 Bor	na Chamietar Decuite	
Lab Results – Messages	Bone Chemistry	o onomiau y recomo	
	Bone Chemistry		
Registration Event Summary	Sample Date Analyte	Measurement	
Rigad Brangura History	13.Feb.1998 Calcium	2.37	
cityEHR Version Number - V1.7-2021-12-08-1 User:	cityEHR Administrator / cityEHR Feature Demo / en-gb	Lagged on: 12:54:55 Wednesday, 8h December 2021 Last logged on: 12:39:38 Wednesday, 8h December 2021	

6. Viewing the Patient Record

6.1. Summary View and Charting

When you first access a patient's record, you will be shown the Summary page, which includes a selection of various summary views.

1. Initially, you should see the summary view 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-Apr- Patient Id K8971395 NHS Number 756	1957 (63 years) Gender: Male				Dashboard	Patient Search	Patient Cohorts	In-Tray	Quit Admin Registration	city EHR
Views	Hide Events Summaries Forms Letter	a Pathways	Care Setting: cityEl	IR Feature Demo 🖌			تبردية ويت			
▼ cityEHR Feature Demo (10)	Bone Chemistry – Messages								View Current Dat	a v e
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	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 phosphatase 21-Sep-1981 Vitamin D	84 44								
Lab Results – Messages	21-Sep-1981 GFR	126								
Registration Event Summary	21-Sep-1981 MDRD	180								
Blood Pressure History										
Height, Weight, BMI										
Bone Mineral Density										
cityEHR Version Number - V1.7-2020-07-02-5 UK	ser: cityEHR Administrator / cityEHR Feature Demo Logged /	n: 09:54:10 on Thu	ursday, 27th August 2020 La	st logged on: 00:52:24 on Thursd	ay, 27th August 2020					

2. Initially, this summary just shows the most recent set of Bone Chemistry results. Now change the drop down at the top right of the pane to Historic Data and you should see the complete list of historic results for the patient.

WALTERS, Zak (Mr) Born: 03-Sep-	-1986 (35 years) Gender: Male		Quit Administration
atient id K9954601 NHS Number 76	5636282/4 A		ussnooara vatient search vatient conorts in-iray kegistration
ws	Events Summaries Forms Letters	Pathways Care Setting: cityEHR Feature Dem	
cityEHR Feature Demo (10)	Bone Chemistry – Messages		View Historic Data)
one Chemistry – Messages	Selected 3 variable(s) with date rang	e 2003-02-27 to 2004-04-13	
3:22:57 on 13-Apr-2004	23:22:57 on 13-Apr-2004 - Bone 0	Chemistry Results	
one Chemistry Results	Bone Chemistry		
5:16:53 on 06-Mar-2004	Bone Chemistry		
7 58 38 on 23 Feb 2004	Sample Date Analyte	Measurement	
one Chemistry Results	3-Apr-2004 CTX	0.91	
9:13:32 on 13-Feb-2004	42 Apr 2004 DAND	440	
one Chemistry Results	- 42 Apr 2004 Calainer	2.48	
9:12:08 on 17-Jan-2004	G 13-Apr-2004 Calcium	2.40	
3 02 23 on 22-Nov-2003	13-Apr-2004 Alkaline phosphat	ase 84	
one Chemistry Results	13-Apr-2004 Vitamin D	44	
18:54 on 22-Oct-2003	13-Apr-2004 GFR	126	
ne Chemistry Results	13-Apr-2004 Creatinine	47	
:03:28 on 10-Aug-2003	13-Apr-2004 MDRD	180	
29-56 on 18, Jul 2003			
ne Chemistry Results	15:18:53 on 06-Mar-2004 - Bone I	Chemistry Results	
:06:29 on 02-Apr-2003		showing house	
ne Chemistry Results	Bone Chemistry		
18:03 on 21-Mar-2003	Bone Chemistry		
22:18 op 27 Eeb 2003	Sample Date Analyte	Measurement	
e Chemistry Results	06-Mar-2004 CTX	0.93	
	06-Mar-2004 P1NP	90.2	
ienit Alerts	06-Mar-2004 Alkaline phospha	tase 87	
acture History	06-Mar-2004 Vitamin D	69	
	06-Mar-2004 GFR	83	
dication History	06-Mar-2004 Creatinine	67	
annosis History	☑ 06-Mar-2004 MDRD	119	
	47.50.00 00.5 1.0004 0		
u nesuns – nessages	17:50:50 On 23-Feb-2004 - Bone	Litemistry Results	
gistration Event Summary	Bone Chemistry		
	Bone Chemistry		
od Pressure History	Sample Date Analyte	Measurement	
	23-Feb-2004 Calcium	2.37	
ignt, weight, BMI	23-Feb-2004 Alkaline phosphat	lase 80	
ine Mineral Density	23-Feb-2004 GFR	109	
	23-Feb-2004 Creatinine	51	
	2 00 5-b 0004 MDDD	402	

3. Select two or three of the analytes (CTX, P1NP, Calcium, etc) that you want to view on a chart, by selecting the check boxes to the left of each line. Note that you only need to check the box in one set of results; all boxes for the same analyte in other results sets will also be selected.

FINMORE, Gary (Mr) Born: 13-Apr-1957 Patient Id K8971395 NHS Number 7563628	7 (63 years) Gender: Male			Dashboard	Patient Search	Patient Cohorts I	Quit Admin n-Tray Registration	city EHR
Views	Events Summaries Forms Letters	Pathways Care Setting:	oity/EHR Feature Demo 🖌					
▼ cityEHR Feature Demo (10)	Bone Chemistry – Messages					View	w Historic Data 🖌	5 C @
Bone Chemistry – Messages	Selected 3 variable(s) with date range	1980-02-28 to 1981-09-21						
18:45:13 on 21-Sep-1981 Bose Chemistry Results	18:45:13 on 21-Sep-1981 - Bone (Chemistry Results						^
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	24 Pap 4994 Alkalina abasebat	ana 04						
11:06:11 on 06-Mar-1981 Rose Chemistry Results	21-Sep-1361 Aikanne priosprat	d5e 04						
00:57:41 on 22- Jan-1921	21-Sep-1981 Vitamin D	44						
Bone Chemistry Results	21-Sep-1981 GFR	126						
16:29:31 on 12-Oct-1980		17						
Bone Chemistry Results	21-Sep-1981 Creatinine	4/						
09:00:23 on 11-Sep-1980	21-Sep-1981 MDRD	180						
Bone Chemistry Results								
13:40:15 on 16-Apr-1980 Rose Chemister Results	44-02-40 an 20 Jul 4004 Bana C	hamiatos Desulta						
01:29:07 on 30-Mar-1980	14.02.10 011 30-301-1301 - Dolle C	nemistry Results						
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 phosphata	ase 87						
Medication History	29-Jul-1981 Vitamin D	69						
Diagnosis History	29-Jul-1981 GFR	83						
	29-Jul-1981 Creatinine	67						
Lab Results - Messages cit/EHR Version Number - V1.7-2020-07-02-5 User: ci	29-Jul-1981 MDRD tyEHR Administrator / cityEHR Feature Demo Logged or	119 1: 09:54:10 on Thursday, 27th August 20	20 Last logged on: 00:52:24 on Thurs	day, 27th August 2020				×

- 4. As you select the analytes, a summary of the number selected and the overall data range covered by the selected results will be updated at the top of the pane.
- 5. Once you have selected two or three analytes, press the Chart button that should now be visible at the top right of the pane. See screenshot below.
- 6. On pressing the Chart button you should see a new dialogue window with charts of the analytes you selected, There are various parameters at the top of this dialogue that you can use to adjust the charts that are displayed.

$\leftarrow \ \rightarrow \ \mathbb{G}$	🛇 🗋 🛤 localhost:8080/cityehr/ehr/cityEHRFolder-Events/RuserId=admin&sessionId=53b36f97bd7117b20b960cb1f3722052	80% %	v 🗎 🧔	= :(
WALTERS, Zak (Mr) Born: 03-Sep-19	6 (J5 years) Gender: Male		Quit Administration	city
Patient Id K9954501 NHS Number 75636	8274	Dashboard Patient Search Patient Cohort	s In-Tray Registration	HR
Events Annotations F	Events Summaries Forms Letters Polhways Care Setting: cityEliR Feature Demo v			Show
▼ All Events (35)	15-Dec-2021 - Treatment Recommendations		P 8	C.
15-52-52201 Traitment Recommodations Arth Oakoprasa Therapy Recommodations and Reference Outcome Information Follow-Up 35-54-2005 Alergies and Warnings 25-54-2005 Lifestyle 25-54-2005 Extended 25-54-2005 Ex	And Oscoporosis Therapy Recommendations Inductor Recommendations Inductor Recommendations Inductor Recommendations Inductor Recommendations Inductor Inducto			*
Depression Scale	Dietary Calcium Ladiet false Drug Information Leeflet false			
29-Jul-2005 Patient Registration	Follow-Up			
02-Feb-2005 Lifestyle	Is a Follow-Up Appointment with the Patient Required? false DXA Referral			
28-Jan-2005 Lifestyle	Is this the patient's first DXA Scan? false			
12-May-2004 Lifestyle	Is this the patient's second DXA Scan? false Is this a re-referral for a DXA Scan? false			
08-May-2004 DAS 28				
01-May-2004 BMD Data				
01-May-2004 Risk Factors				
01-May-2004 Medications				
13-Apr-2004 Bone Chemistry Results				
13-Apr-2004 Laboratory Test Results				
06-Mar-2004 Bone Chemistry Results				
23-Feb-2004 Bone Chemistry Results				

7. Once you have seen enough, press the Close button at the top of the dialogue to dismiss it. See screenshot below.

6.2. Viewing the Longitudinal Record

To view all the events in the patient record, press the Events tab at the top of the viewing pane.

1. You will see a list on the left hand side, of all the events recorded in the patient's record and details of the most recent of these will be displayed in the main viewing pane.



2. Select any historic event from the list to view the recorded information in the main viewing

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6.3. Annotations and Notifications

The Events page is used to access the full longitudinal record of events recorded for the patient. Since cityEHR must preserve a proper history of the patient's information, it is not possible to change any of the recorded events that have been committed (published); but it is possible to add annotations.

- 1. In the Events page, select the historic event that you wish to annotate for example the HADs assessment.
- 2. To annotate the event, click the small Flag button to the top right of the record view. This will display the annotations for this event.
- 3. Click the '+' button at the top left to add a new annotation.



- 4. You can now enter the Type and Comments for the annotation then press the Save button that appears in the top right menu to commit your annotation to the record.
- 5. Once saved, your annotation is stored as its own event in the historic record for the patient, associated with the event it annotates.
- 6. Annotations can also be made as ways to notify other clinical users about events in the patient record.
- 7. To do this, add a new annotation but this time use the Action dropdown menu to select the users you wish to notify.
- 8. Note that for a fresh installation of cityEHR, with only the single admin user, you should only be able to notify roles of user, so select Notify Role as the action and then Administrator as the role in the dropdown.
- 9. When the details of your notification are completed, press the Save button to commit to the annotation to the patient record.

10. Once saved, the annotation is stored with details of the users you have chosen to notify and they will be altered through a message in their InTray (as we will see later on in this Quick Guide



7. Cohort Search

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

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

The sections below show cohort search features, used with a small database of test patients (such as the data generated in the Section above, Generate Test Data).

7.1. Demographics

- 1. Navigate back to cityEHR Feature Demo
- 2. Navigate to Patient Cohorts in the purple dashboard

3. To search for cohorts based on patient demographics, select Demographics (the default when the page loads) from the left hand search type selection.

2. You can then select to search on Gender, Data of Birth or Age. Enter the criteria for the search in the fields provided and then press the Search button to perform the search and display a summary of the cohort found.

3. View the Cohort Results in the display window.

4. Now select the box next to the Cohort Search Results.



5. Now Navigate to the "Cohort" tab (located next to the "Search" tab). You should be able to view the patients in this cohort. See screenshot below.

6. You can now print or export this list. Please Navigate to section 8.5 for instructions on how to print and section 9.2 for instructions on how to export data for a cohort

7.2. Administrative Data

1. Select Administration form the left hand search selection menu to search for cohorts based on the effective time or author of specific compositions. The Context selection allows you to specify the composition (i.e. document type) to search for – or you can leave this as 'Any Context' for a general search.

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 screenshots below.

3. Click the Search button (Magnifying Glass) to return search results.

4. Click on the empty box next to your new patient list.

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		Quit Administration City Dashboard Patient Search Patient Cohorts In-Tray Registration
My Searches Shared Searches	Hee Search Cotort	
	Cohort Search : Search time: P10.0665	Specialty cityEHR Feature Demo 🔍 Cohort search Patient Cohort 2022-04-25T
	New term v Description Author v equal to v Context Stored Records Fracture Record v	
	All 1 None Ref 1 Search Term	Cohort (0)
	3 Has Fracture Record with Author equal to cityEHR Administrator	(2)
	A Has Lifestyle Assessment with Author equal to chyElH Administrator Has Fracture Record with Author equal to chyElH Administrator	(0)
	Click one of these boxes. Ideally select one that returns several patients	This cohort contains two patients

5. Navigate to the Cohort tab to view a patient list of your search results.

7.3. Observations

1. Change the search term to Observation. You can change the parameters to run more specific cohort searches for these observations. See image below for an example. Make sure to click "Search" to retrieve your search results!

My Searches Shared Sear	ches	soarch Cohort		
		Cohort Search	Specialty cityEHR Feature Demo 🗸 🕻	٦
		New term V Observation V Description		1
		Effective time Any time v		
		Scope All data		
		Current equal to Yes Context Stored Records Any context		
		All None Ref 11 Search Term	Cohort (0)	

2. For this example, we have set the "Observation" as Fracture, time = Current, Scope = All Data. We can view our results below:

3. For this observation, we have returned zero results. You can change and modify the cohort search data to see what you retrieve!

7.4. Combining Cohorts

Cohort searches can also be combined. This section will show you what that means and how to do that.

1. Search for the Cohorts you wish to combine. Please see example below. We have created two cohort searches under "Demographics" for "Gender equal to Female" and "Gender equal to Male".

2. Now Select the Cohorts you wish to combine.

3. Navigate to "Select Search Type" and select "Combine Selected Cohorts", pick an Operator, and

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then click the Search Button. You can also select "Combine Cohorts". The options for the operators will be different. When selecting "Combine Cohorts", your operator options are:

a. AND

b. OR

c. A PERCENTAGE OF: This operator will find the members of cohort A that are in cohort B and calculate a percentage.

4. See results of your search in the display window and select them by clicking the check box. Please see the image below. Save this cohort search.

5. Navigate to the Cohort Tab. You have an option to print this list by clicking the icon on the right with the printer.

7.5. Printing Cohort Lists

Cohort lists can also be printed. This section will show you how to do that.

1. Select the Cohort List(s) you would like to print (the Cohort Search Results). See image below.



2. Navigate to the Cohort Tab and click the Print Icon to print cohort lists.



3. Click Open File and open with whichever application you would like.



4. Click Print.

cityEHR	×	+												-	ø ×
$\leftarrow \ \rightarrow$	C	0 0	e localhost:8080/cityeh		RatiantCohort	2021-12-/ 🗸 📕					_	- D Y	1 ☆	\bigtriangledown	≝ ≡
				$\leftrightarrow \rightarrow$	ට බ	① file:///C:/Use	rs/xmlss/AppDat	a/Local/Temp/Patie	ntCohort2021-1	12-09T17%2031%20	38.978Z-2021-1	12-0 ☆ 定 & ビ …	int Search Patient Cohorts	Quit Administration In-Tray Registration	
My Cohorts	Shared Cohorts	Hide	Search Cohort	1 of 1	Q	-	- + ର୍	🖉 🖾 Fit to	page 🖺 Pa	ge view A ⁽ⁱ⁾ Rei	ad aloud 🛛 🛴	Add notes 🔒 🗟 🚱 🕱			
			Cohort Search : Sea			(2)						-	Cohort search Patient Cohort	2021-12-(, e c
			Displaying 1 to 2 of 2 pa			OR Patient Ide	iender equal to M	ale							
			Patient Id K5310150			Patient Id	Surname	Forename	Gender	Date of Birth	Age	Drint		Age 64	
			38703301			38703301	Gibson	Brian Howard	Male	1976-03-17	45	FIIII	16	45	
					mana with Mis	maan fa Endana a tha	fast says been	an huilt fan 146a de			"hango mu dof	ault Dan't ask again Y			
				00	more with Mit	roson Euge – the	Tast, new brows	er built for winde	JWS 10.		shange my dei				

Recent Care Team						
95325737 - Winston	Patient Search K: Search time: PT0.733S / PT0.418S					Order by Hospital Number ~ Q 3
	Patient Id K Sumame	Forename				
	Gender - Select Value V					
	Day of Birth - Select Value V Month	Select Value V Year	Date			
	Consultant					
	Displaying 1 to 10 of 20 patients 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	Hilary	Female	15-Nov-1944	
	K9749102	Norton	Wallace	Male	15-Nov-1972	
	K5654509	Woods	Alfred	Male	11-Sep-1987	
	K5550102	Inmble	Sigmund	Male	23-Jun-1982	
	K5499100	Grant	Corey	Nale .	15-Jan-1953	
	K545/515	Vallers	Amber	Mala	12-Jul-1906	
	K5397545	Collymore	Bridget	Female	23.Apr. 1946	
	10007040	Contyniole	Diruger	remare	20-Apr-1040	
	Calast	- Detient				
		a Patient				
	Sciect	aratient	•			

8. 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.

8.1. 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 which you would like to export their record.

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





3. Select the Event you would like to export.

Hide		Show
Events	Events Summaries Forms Letters Pathways	
▼ All Events (34)	10-Jun-2002 - Allergies and Warnings	
10-Jun-2002 Allergies and Warnings	Allergies	
10-Jun-2002 Lifestyle	Type Description Pet Dander	
10-Jun-2002 Body Mass Index	Nuts	
10-Jun-2002 Medication		
10-Jun-2002 Hospital Anxiety and Depression Scale		
10-Jun-2002 Patient Registration		
17-Dec-2000 Lifestyle		
01-Dec-2000 Lifestyle	Select data you would like to	
29-Sep-1998 Lifestyle		
17-Sep-1998 DAS 28	evport	
25-Aug-1998 BMD Data	ехрон	
25-Aug-1998 Risk Factors		
25-Aug-1998 Medications		
04-Jul-1998 Bone Chemistry Results		
04-Jul-1998 Laboratory Test Results		

4. Click the Export Record icon to export the Individual Patient Data.

8.2. Exporting Data for a Cohort of Patients

Data can be exported in various formats for patient cohorts that have been formed as a result of cohort searches.

1. Navigate to Administration Screen in the Purple Dashboard.

2. Navigate to Cohort Searches in Menu on the Left of the screen and then click "Manage Cohort Searches".

- 3. You will be able to see your saved cohort searches in the main display screen.
- 4. Click the box next to the Cohort Search you wish to export.



5. Now click the "Export" button that will appear at the top right of your screen.

6. A dialogue box will appear. You can save your Exported File or open with a Default Application

			Dashboard Patient Search Patient Cohorts In-Tray Registra	tion EHR
Hide	cityEHR - Administration - Manage Cohort Search	nes	A CONTRACTOR OF THE OWNER OF THE	Show
► System				8
► Database	User: cityEHR Administrator (admin) V Cohort type: All V		Role: Administrator	
Information Model	Patient Cohort 2021-12-08T14:45:29.019Z		Patient Cohort 2021-12-08T14:45:29.019Z	
► Directory				
► Users and Care Teams		Opening cohortSearches-2021-12-10T11-37-39.zip X		
► Knowledge Sources		You have chosen to open:		
► Patient Records		which is: Compressed (zipped) Folder (2.8 kB) from: http://docalhoct/0000		
▼ Cohort Searches		Whether and Produced and the Pro-		
Manage Cohort Searches		Open with Windows Explorer (default)		
Import Cohort Search	1	○ Şave File □ Do this sutemptically for filer like this from now on		
► Export Data Sets		bo this <u>a</u> utomatically to magnific this non-now on.		
Redirect Notifications		OK Cancel		
My User Account				
Manage Patient Access				
Test Web Service				
	4			

7. For this example, we will open with Microsoft Edge.

Quit Administration city

C:\Users\xmlss\AppData\Local\Temp\Tem	yp1_cohortSearches-2021-12-10T11-37-39.zip\cohortSearches-2021-12-10T11-37-39.xml	- 0 Search_	× □ - ◎ ॐ ☆ ŵ -
 CitizertumistAppOtatil.con/TempTem CitizertumistAppOtatil.con/TempTem CitizertumistAppOtatil.con/TempTem CitizertumistAppOtatil.con/TempTem ContorSaarches xminusce="http://www.wis.org/12007/ xminuscent="http://www.wis.org/12007/ xminuscent="http://www.wis.org/12007/ xminuscent="http://www.wis.org/12007/ xminuscent="http://www.wis.org/12007/ contorSaarche xminuscent="http://www.wis.org/12007/ contorSaarche xminuscent="http://www.wis.org/12007/ contorSaarche xminuscent="http://www.wis.org/12007/ contorTatientSubmitter/ contatientSubmitter/ contorTatientSubmitter/ contorTatientSubmitte	<pre>sl.cebodiarche=2021-12-101113738.ziptcohordsarches-2021-12-10111-37-35.wel rg/c/c/elements/1.1/* smlms:ss="http://www.w3.org/2001/XMLSchema* xmlms:t2="http://schem idlormats.org/spreadshestml/2006/nmin* xmlms:df="http://www.w3.org/2001/XLncLude* xmlms:eds="http://www.w3.org/2001/XLncLude* xmlms:eds="http://www.w3.org/2001/XnlcLude* xmlms:eds="http://www.w3.org/2001/XnlcLude* xmlms:eds="http://www.w3.org/2001/XnlcLude* xmlms:eds="http://www.w3.org/2001/XnlcLude* xmlms:eds="http://www.w3.org/2001/XnlcLude* xmlms:eds="http://www.w3.org/2001/XnlcLude* xmlms:eds="http://www.w3.org/2001/XnlcLude* xmlms:eds="http://www.a3.org/2001/XnlcLude* xmlms:eds="http://www.a3.org/2001/</pre>	• C Sarch nas.microsoft.com/office/excel/2003/xml* **ns#* xmlms:clyEHR="http://openhealthinformatics.org/eHr* xmlms:iso-13606 sforge.net/NS/oxi4* xmlms:edorms="http://www.exforms.org/eX/1.0" 01/XMLS-Chem.instance* xmlms:sforms="http://wow.exforms.org/eX/1.0" mms="http://www.w3.org/2002/xforms* xmlms:ss="um:schemas-microsoft-co- il/form-runner"> **xisname=** yaxisminvalue=*0* yaxismaxvalue=*0* subCaption=** caption=** bgcold	- 0 × > > > **http://www.iso.org/iso- is* > >> > >> >
<pre><search td="" terms="" {<=""><td>hispayhams=" code=" type="/> ispayhams=" code=" type="/> ispayhams=" code=" type="/> ispayhams=" selection="/> ction> ery> elements made for all supplementary data sets in the entry (may be more than one)> =" type=" dusterDisplayhams=" clusterId=" elementType=" elementDisplayhams=" elementIRI=" ld= id=" displayhams=" elementIRI=" elementDisplayhams=" type=" elementDisplayhams=" clusterId=" cluster</td><td>**/> isplayName=**/> +-></td><td></td></search></pre>	hispayhams=" code=" type="/> ispayhams=" code=" type="/> ispayhams=" code=" type="/> ispayhams=" selection="/> ction> ery> elements made for all supplementary data sets in the entry (may be more than one)> =" type=" dusterDisplayhams=" clusterId=" elementType=" elementDisplayhams=" elementIRI=" ld= id=" displayhams=" elementIRI=" elementDisplayhams=" type=" elementDisplayhams=" clusterId=" cluster	**/> isplayName=**/> +->	
- <query></query>	h/EHP - Administration - Manage Cohort Searches		Show
► Svstem			
▶ Database			
► Information Model P	ser: cityEHR Administrator (admin) V Cohort type: All V (atient Cohort 2021-12-08T14:45.25)	Role: Administrator	
► Directon/	File Home Share View Compressed Folder Tools		
Unerg and Care Teams	← → ✓ ↑ 📲 « Temp > cohortSearches-2021-12-10T11-37-39 ∨ Ø Se	arch cohortSearches-2021 🔎	
Knowledge Sources	Quick access Name Type	Compressed size Passw	
Patient Records	Desktop * Downloads *		
Cabert Saarabaa	Documents *		
V Conort Searches	Al With XForms		
Manage Contri Searches	cityEHRScreensh cohortstuff		
Import Conort Search		to a to	
Export Data Sets		tents	
Redirect Notifications	30 Objects		
My User Account	Desktop v c		
Manage Patient Access			
lest Web Service			

- 8. A dialogue box will appear that allows you to extract the xml contents. Extract the contents.
- 9. A new window will open with the xml of the exported data.

8.3. Export Data Sets

- 1. Navigate to Administration Screen in the Purple Dashboard.
- 2. Navigate to Export Data Sets in Menu on the Left of the screen.

►s			Dashbo	oard Patient Search	Patient Cohorts	Quit A In-Tray	dministration Registration	city EHR
ÞC	Hide	cityEHR - Administration - Manage Export Data Sets						Show
► lr	► System	Export Data Set: Demographic Data (DemographicData) 1 Filter by Composition	horo		Specialty:	Elfin 2		~ 🖫 S
► C	► Database	Entries from dictionary (38/288	Expo	ort Data Set (2)				^
► u	Information Model	Filter by Composition Clinical Assessment						
► K	► Directory	Alcohol Greater Than 3 units/day? (FRAX5) Ambulatory Aid (Morse3)	Do a BMI	any 1st degree relatives (BMI)	have history of Fragil	ity Fracture	es? (FRAX3)	
► F	Users and Care Teams	Androgen Deprivation Therapy? (FRAX9) Arromatase Inhibitor Lise? (FRAX8)						
►c	Knowledge Sources	Back Pain Details (BackPainDetails)						
• 6	Patient Records	Do any 1st degree relatives have a history of Osteoporosis? (FRAX2) DOB (FRAXDOB)			-			
	► Cohort Searches	Does the Patient report a fear of falling? (FearolFalling) Does the Patient report difficulties with balance? (BalanceProblem)	3.	. Watch th	em appe	ar he	ere	
Red	▼ Export Data Sets	Does the patient report possible syncope? (PossibleSyncope)			11			
Му	Manage Export Data Sets	Drug Details: (OsteoTherapyDetails) Estimated Calcium Intake: (CacliumIntake)						
Mar	Import Data Set	Fracture Details (Fracture Details) 2. Select Entries	s for Exp	ort here				
Test	Redirect Notifications	Fraginity Fracture History (PreviousFraginityFractureDetails) FRAX Calculator (FRAXCalculator)						
	My User Account	Frax Score (FRAXScore) Gait/Transferring (Morse5)						
	Manage Patient Access	Height Loss > 5 cm ever? (HeightLossReport)						
	Test Web Service	History of falling, immediate or within 3 months (Morse1) IV/Heparin Lock (Morse4)						
		Mental Status (Morse6)						
		Milk or Non-Dairy with Calcium: (MilkNonDairy) (GPSpecificComorbid7)						~

3. Name your Data Set. See image below.

4. Select the Entries you want to add to your exported data set. They will appear on the column on the right. You can also filter the Entries by composition if you click the drop-down next to "Composition".

5. Click the save button at the top right of the display window.

					Quit Administration city Dashboard Patient Search Patient Cohorts In-Tray Registration
	ide cityEHR - Administration - I	Browse Physical Databases			Show
► System	System: EHR Application V Dat	abase: Built-in Database v Node: builtin-basicEHR v Versi	an: 1.4.1dev		
▼ Database	/db/ehn/xmistore				Show BTUs 🗋 Sort by: Type 🗸 🔰 Filter:
Database Access Layer	Nama	Type	Size	Last Modified	
Nanage EMPI	system	collection	2	2021-12-06T04:39:50.959-05:00	
Concernto Tant Data	applications	collection	10	2021-09-17T11:32:06.218-04:00 2021-09-17T11:32:51.429-04:00	
Generate reat para	0000	000000	-	202100111102010200000	
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 Service					
My User Account					

9. Inspecting the XML Store

The native XML database used in cityEHR can be browsed using tools in the Admin page. This can be useful for understanding how data are stored and can be used by administrators to remove information from the database.

The facility to remove data must be used with extreme caution, since it may invalidate the overall structure of the xmlstore and/or compromise patient records.

9.1. Browsing Logical Databases

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

9.2. Browsing Physical Databases

- 1. Open the Admin page and select Browse Physical Databases from the list on the left hand side of the display screen.
- 2. There are two separate databases that can be used for the root of the browse:
 - 1. XML store holds users and patient records for all installed applications
 - 2. Audit log holds audit data for all users
- 3. Click on the database store you would like to browse. We will select xmlstore for this example.
- 4. The top level of the xmlstore database has 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 of the applications.
- 5. Click on the *users* link and you will see a list of all users registered with cityEHR. If you are following these instructions for the first time then there will only be the default *admin* user and any that you imported or created in the steps above.
- 6. Click on the link for *admin* and the link *credentials* should be displayed; click on that. Now

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Hide	cityEHR - Administration - E	Browse Physical Databases					Show
► System	System: EHR Application 🗸 Databas	XML Document Viewer - 2021-12-08T12-26-35.182Z-1996-03	-28T10-44-20.610474-CityEHR-Message-LabData-admin				A 🖻 🗑
▼ Database	/db/ehr/xmlstore/applications/ISO-1	Download Close		Shov	v BTUs 🔲 Si	ort by: Type 🗸 🔰 Filter:	
Database Access Layer	Name		^	Type	Size	Last Modified	^
Manage EMPI	2021-12-08T12-26-35.182Z-1996-03-28T1	<clinicaldocument #cityehr:message:labdata"="" roo<="" td="" xmlns:fr="http://orbeon</th><th>resource</th><th>12288</th><th>2021-12-08T12:26:35.772Z</th><th></th></tr><tr><td></td><td>2021-12-08T12-26-35.182Z-1995-12-20T1</td><td><typeId extension=" xmlns:rdf="http://www.w3.org/1999</th><th>/02/22-rdf-syntax-ns#"><td>t="#CityEHR:Message"/></td><td>resource</td><td>16384</td><td>2021-12-08T12:26:35.814Z</td><td></td></clinicaldocument>	t="#CityEHR:Message"/>	resource	16384	2021-12-08T12:26:35.814Z	
Generate Test Data	2021-12-08T12-26-35.182Z-1995-11-19T2	<templateid extension="#ISO-13606:Folder:Rheumat</td><td>ology" root="#ISO-13606:EHR_Extract:cityEHR"></templateid>	resource	12288	2021-12-08T12:26:35.859Z1. Click bin	oculars icon	
D D 1 1 0 1 1	2021-12-08T12-26-35.182Z-1995-11-19T2	<id "="" codesystem="cityEHB" displayname="</td><td>Laboratory Test Results" extension="2021-12-08112-26-35.1822-1996-03-
<code code="></id>	resource	12288	2021-12-08T12:26:35.922Z		
Browse Physical Databases	2021-12-08T12-26-35.182Z-1995-10-25T0	<effectivetime value="1996-03-28T10:44:20.610474</td><td>"></effectivetime>	resource	8192	2021-12-08T12:26:35.955Z		
Browse Logical Databases	2021-12-08T12-26-35.182Z-1995-08-15T1	<recordtarget></recordtarget>		resource	8192	2021-12-08T12:26:36Z	
, ,	2021-12-08T12-26-35.182Z-1995-04-08T0	<pre><pre><pre>cid outcome#V1005710#/></pre></pre></pre>	2 Dialogue Box that	resource	12288	2021-12-08T12:26:36.048Z	
Information Model	2021-12-08T12-26-35.182Z-1995-03-24T0	<pre><pre><pre><pre>cid extension= ki020010 //> <pre><pre><pre><pre><pre><pre><pre><pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre></pre>	2. Dialogue box that	resource	12288	2021-12-08T12:26:36.094Z	
	2021-12-08T12-26-35.182Z-1995-03-24T0	<name></name>	annears after clicking	resource	16384	2021-12-08T12:26:36.141Z	
Directory	2021-12-08T12-26-35.182Z-1995-01-04T0	<prefix>Ms</prefix>	appears arter clicking	resource	12288	2021-12-08T12:26:36.187Z	
► Lisers and Care Teams	2021-12-08T12-26-35.182Z-1995-01-04T0	<given>Zara</given>	hinoculars icon	resource	16384	2021-12-08T12:26:36.235Z	
	2021-12-08T12-26-35.182Z-1994-06-27T2		billoculuis icoli	resource	16384	2021-12-08T12:26:36.297Z	
Knowledge Sources	2021-12-08T12-26-35.182Z-1994-04-30T1	<administrativegendercode code="Female</td><td><pre>" codesystem="cityEHR" displayname="Female"></administrativegendercode>	resource	12288	2021-12-08T12:26:36.343Z		
	2021-12-08T12-26-35.182Z-1994-04-30T1	<pre><birthtime value="1970-03-11"></birthtime> </pre>		resource	20480	2021-12-08T12:26:36.389Z	
 Patient Records 	2021-12-08T12-26-35.182Z-1993-07-30T0	<pre><pre><pre>cproviderOrganization></pre></pre></pre>		resource	12288	2021-12-08T12:26:36.437Z	
Cohort Saarchas	2021-12-08T12-26-35.182Z-1993-07-30T0	<id extension="" root="2.16.840.1.1138</td><td>83.2.1.4.3"></id>	resource	16384	2021-12-08T12:26:36.483Z		
P Guilon Gearchea	2021-12-08T12-26-35.182Z-1993-06-27T1			resource	12288	2021-12-08T12:26:36.514Z	
Export Data Sets	2021-12-08T12-26-35.182Z-1993-06-27T1	 		resource	8192	2021-12-08T12:26:36.576Z	
	2021-12-08T12-26-35.182Z-1993-05-01T1	<component></component>		resource	16384	2021-12-08T12:26:36.622Z	
Redirect Notifications	2021-12-08T12-26-35 1827-1993-05-01T	<structuredbody></structuredbody>		resource	12288	2021-12-08T12-26-36-6527	
My Liser Account	2021-12-08T12-26-35_182Z-1999-07-28T1	<component></component>		resource	8192	2021-12-08T12-26-35-223Z	_
ing ober recount	2021-12-08T12-26-35 1827-1998-04-13T	<id extension="#ISO-13606:Section:0</td><td>SteeporosisOtherLabs" root="cityEHR"></id>	resource	16384	2021-12-08T12-26-35-2547		
Manage Patient Access	2021-12-08T12-26-35 1827-1996-05-30T2	<title>Other Labs</title>	×	resource	90112	2021-12-08T12-26-35-2867	
	2021-12-08T12-26-35 1827-1999-07-28T	<	>	resource	12288	2021-12-08T12-26-35-3327	
Test Web Service	2021.12.08T12.26.35 1827.1998.04.27T0	6.38.32 128365.CityEHR-Form-Lifestyle.admin		resource	16384	2021.12.08T12.26.35 3637	
	2021.12.08T12.26.35 1827.1999.07.28T1	5.48.09 748967-CityEHB-Form-Medication-admin		resource	16384	2021-12-08712-26-35-3957	
	2021.12.08712.26.35 1827.1999.07-2871	5.47.33 173468.CityEHD.Form.HADS.admin		resource	40960	2021-12-08712-26-35-4267	~
	2021-12-08T12-26-35.1822-1998-04-27T0	5-38-32. 128365-CityEHR-Form-Lifestyle-admin		resource	16384	2021-12-08T12:26:35.363Z	· ·
	2021-12-08T12-26-35.182Z-1999-07-28T1	5-48-09.748967-CityEHR-Form-Medication-admin		resource	16384	2021-12-08T12:26:35.395Z	
	2021-12-08T12-26-35.182Z-1999-07-28T1	5-47-33.173468-CityEHR-Form-HADS-admin		resource	40960	2021-12-08T12:26:35.426Z	~

click on the binoculars icon at the top right of the viewing panel.

- 7. You should now see an XML document in a new dialogue window on your screen. The XML document contains the details for that user.
- 8. You can see the same XML for the user element that was contained in the users.xml file.
- 9. You can use the download the XML to view it in a notepad format.
- 10. Now return to the top level of the xmlstore by clicking the back button that is located just to the right of the database selection drop down (don't confuse this with pressing the back button in your web browser). See image below.

- 11. Click on the applications link, then the link for ISO-13606-EHR_Extract-cityEHR.
- 12. This should now show the top level collections for the default cityEHR application.
- 13. Click on the records link and you will now see a list of all patients with a record stored for this application. If you are following these instructions for the first time there will only be one patient with the id (Hospital Number) that you used to register the patient (e.g. 123456789).
- 14. Click on the link for a patient and you will see the list of timestamped compositions (XML documents in HL7 CDA format) that represent the events stored in that patient's record.
- 15. Click on one of the timestamps and then click on the binoculars and you should now see an HL7 CDA document for that event in a dialogue box on your screen.

16. You can continue exploring the database from the ISO-13606-EHR_Extract-cityEHR collection, looking at the contents stored for the informationModel (these are the OWL XML files that represent the models you imported) and the systemConfiguration which holds the templates for new forms. letters, etc as well as the full data dictionary for the application.



10. Manipulating the Information Model as an Ontology

Note: Skip all of Section 10 if you do not have access to Protege

10.1. Browse the Ontology in cityEHR

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).

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.

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.

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).

10.2. Export the Ontology and Open in Protege

1. You can now export the ontology by pressing the Export button in the top right - this will take the ontology from the cityEHR database and return it to the browser as a zip file.

Click on the button that says OWL.

2. Save the file somewhere on your system, rename it to use a .zip extension and unzip to obtain the ontology (OWL/XML) file. If all has worked correctly, this file will be called export.xml. It is indeed an XML file, but it is in the OWL/XML vocabulary, so its useful to rename it to have a .owl extension.

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▶ Database	ERR - Administration - Manage Information Model Information Model: Specially - chycHet Feature Demo Specin Het Feature Demo Specially -
▼ Information Model Manage Information Model	Imported from file: /applications.ISO-13666-EHR_Extract-cityEHR/informationModel/cityEHR-Speciality-Feature-Demo-171.xml Model type: Total assessments 12580
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► Patient Records	
► Cohort Searches	
► Export Data Sets	
Redirect Notifications	
My User Account	
Manage Patient Access	
Test Web Service	

You can now open this ontology with Protege. Start Protege and select to open an existing ontology, navigate to the unzipped ontology from above and it should open. If you have renamed your file with a .owl extension then you should also be able to open it in Protege by double clicking on it.

Select the Classes tab to take a look at the class hierarchy for the cityEHR architecture and then the Individuals tab to see the specific instantiation for the Feature Demo information model.

You will see classes that correspond to items in the ISO-13606 and HL7 CDA models, together with some additional classes that are specific to the cityEHR.

Select the Object Properties tab at the top of the window and expand the Top Object Property to show a list of all the object properties available in the cityEHR architecture. These are split into two sets, with names starting 'has' or 'is' - each named pair being the inverse of each other.

Now select the Data Properties tab at the top of the window and expand the Top Data Property to show a list of all the data properties available in cityEHR

10.3. Edit the Ontology

In Protege, try adding a new section to one of the forms and some new entries to the section. Save the file using Save As (in case you have made a mistake).

Your workshop instructor will guide you through these edits.

10.4. Load the Model to cityEHR

Return to the cityEHR Admin page and select Import Information Model form the left hand menu. Browse to you OWL/XML model and press Upload. Once the file has been uploaded you can then press the Import button. This will take a few seconds before displaying a summary of the model it has imported. If there are errors these will be reported and the model will not be loaded.

Once the model has loaded, return to the Patient Search screen, search for and select a patient then visit the form you changed in the model to see the changes.

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► Patient Records		
Cohort Searches		
► Export Data Sets		
Redirect Notifications		
My User Account		
Manage Patient Access		
Test Web Service		
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11. Manipulating the Information Model as a Spreadsheet

Note: Skip this section if you do not have administrative access to cityEHR

If you have administrative access, your Administration Page will look like the one below:

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 FormId 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 DisplayName 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 FormID to TestForm and Display Name to Test Form so that it is easily identifiable in the interface.

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).
- 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 XMI 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.

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- 15. Browse to the XML model 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.



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

12.1. 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:
- 3. Click "Start"

Welcome cityEHR Administrator Authentication successful.	city EH R	
ctyEHR Electronic Heath Record © 2013-2020 John Chelsom Open Health Informatics Research Programme		

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



6. Now navigate to and click on "New Application" in the menu left of the screen underneath "Manage Application Parameters". See below.



7. 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.

8. Now click the button that has a lightning bolt on it at the top right of the screen. See image below. This button creates your application.

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



10. You can change the display name of your new application and change the logos.

11. Once you are finished changing the display name and logos (if you want), you can now click on "Create New Application ID". See image below.

12. A Dialogue Box will appear. Click Confirm.



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

14. Once cityEHR has finished creating your application, navigate to "Quit" in the Purple Dashboard.

15. On the log-in page, you should now be able to select your new application in the drop-down menu.

16. 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.

12.2. 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.

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▶ Export Data Sets	
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	FRIDEN
Manage Patient Access	

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

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

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



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

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

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View Audit Log	images
New Application	club
Inspect Spreadsheet	Application logo hint: 60 x 60 px value: /applications/ISO-13606-EHR Extract-Ponset/images/dubFootDBlcon.pg
► Database	Application favicon hint: 16 x 16 px value: /applications/ISO-13606-EHR_Extract-cityEHR/images/cityEHRLogoTall-Small.ico 🎽 🚟
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wy oser Account	Splash page image, right hint: Recommended width 380px or 180px value. Browse No file selected.

These are two applications that ship with cityEHR that can be created in your local database. 6. Now click "Create New Application" (lightning bolt icon) and wait for it to load. This may take a few minutes.

- 7. Once it has finished creating, navigate to Quit in the Purple Dashboard
- 8. You should now be able to select "Elfin 2" as an application from the log-in page
- 9. Click Start and you will be navigated to the startup home page for Elfin2.

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13. Creating an Information Model

13.1. 13.1 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:

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

1. To begin doing this, open the cityEHR webapps folder

2. Navigate to the following folder:

webapps/cityehr/WEB-inf/resources/apps/ehr/resources/applications/ISO-13606-EHR-Extract-cityEHR/informationModel



- 3. You should land on the page above
- 4. Open the file named: Open the file named cityEHR-Specialty-CommonModel.
- 5. Go to File \rightarrow Save a Copy \rightarrow Rename it to your applicationId-CommonModel
- 6. Save your copy somewhere convenient.
- 7. Close the original cityEHR-Specialty-CommonModel
- 8. Open the copy you have saved at the location you saved it in.

9. 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).

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Parameter	Values		alle alle alle alle alle alle alle alle				
Application	vancouverEHR	cityEHR Base Application	City University, London				
Specialty	cityEHRBase	cityEHR Common Model		27/00/00/200			
Layout	Ranked	Unranked	Ascending	Descending			
CRUD	R	CRU	CRD	CRUD	UL.	L	
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EntryType	Act	Encounter	Observation	Procedure	RegionOfInterest	SubstanceAdministration	Supply
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Rendition	Form	ImageMap	Denoted	Enumerated	Standalone	Chart	Highlighted
ElementType	memo	media	patientMedia	calculatedValue	staticValue	enumeratedValue	enumeratedClass
CohortSearch	PrimarySearch	Searchable	NotSearchable				
RBACtype	allow	deny					
Roles	clinician	administrator					
Scope	Full	Defined	Expanded	Hidden			
FormLayout	Form	Section	Entry				
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	, pp	incutionine					
	Make sure you a	ire on the					
-	Configuration Pa	age					

10. Save your changes (File \rightarrow Save)

11. 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.

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26 27	Save with password		0501CEXC0197-20031.XIS7	
28		Micr	osoft Excel 97-2003 Template (.xlt)	
I Configuration	Folders Views Messages Forms Letters	Pathways Orders Prescriptions Bookings Sections Sections Data	a Interchange Format (.dif) nts	Units
Find Find	Find All Formatted Display Ma	ch Case 🙀 dBA	SE (.dbf)	

- 12. Close your windows
- 13. Open cityEHR back up.
- 14. Log-in using the same credentials

15. Now navigate to your EHR. This should be added in the drop-down under "You can access more than one application"

- 16. Click Start
- 17. Navigate to Administration

18. Navigate to Information Model --> import information model on the menu on the left-side of the screen

19. Click Browse

- 20. Find the .xml file you just saved. Note: It will not work if you don't select the .xml file
- 21. Select the .xml file

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			File Upload			earch	Patient Cohorts	In-Tray	Registration	
	How vancouverEHR	Recent	4 🏠 scabrera22 🛅 Desktop 🛛 vancouverEHR 🕞 🕨							
Sutem	The model must confi	🔂 Home	Name	* Size	Modified					
system	Ontology · OWL/XML	Desktop	VancouverEHR-Specialty-CommonModel-9.pds	57.4	kB 10 Mar					
Database	Graph - graphML (crea Spreadsheet - MS 200	D. Documents	VancouverEHR-Specialty-CommonModel-9.xml	2.71	MB 10 Mar					
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22. Import the information model using the icon at the top-right of the window. See image below.

- 23. You should now land on a page that shows you the completion of 8 steps.
- 24. Navigate to Quit.
- 25. Log back into your application.
- 26. Navigate to Administration
- 27. Navigate to Application Parameters found in the menu on the left-hand side of the screen.
- 28. Click "Edit"
- 29. Navigate to the "commonModel" option on the screen and ensure that the option #ISO-13606:Folder:cityEHRBase is selected (see screenshot below)
- 30. Click Save
- 31. Navigate to Quit
- 32. Log back into your application
- 33. Navigate to Patient Search and Registration in the top-right fo the screen on the purple

dashboard

34. You should see a fully formed Patient Search Page and a Registration Page. Screenshots of them are below:

vancouverEHR >	× +	
(←) → C* @	🕼 🛞 Co localhost: 8080/cityehr/ehr/cityEHRPatientSearch/?userId=admin&sessionId=cf9d9a60c7ef4d4a84962e8dfb7a914f	(#%) ··· ♡☆ IN ① & Ξ
		Quit Administration Dashboard Patient Search Patient Cohorts In-Tray Registration
Recent Care Team	the second se	
12345 - Lam	Patient Search	[Order by Hospital Number
	Patient M Sumame Forename	
	Day of Birth - Select Value - Month - Select Value - Year Date	1
	Enter search critoria to find pacient.	

35. Navigate to Registration page

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

← → ♂ û ○ 0 localhost 8080/ckyehr/ehr/cktyEHRRegistration//userid=admin&sessionid=cf9d9a60c7ef4d4a84962e8dfb7a914f	(90%) … 🗵 🟠	lin\ 🖽 📽 😑
Dash	hboard Patient Search Patient Cohorts	Quit Administration In-Tray Registration
22-Mar-2022 - Patient Registration *		5 11
Patient Demographics		
NHS Number 123 Hospital Number 9876 Overseas Patient Find Demographics		
Title Mr Forename Bat Surname Man		
Gender Male Date of Birth 10-3-1970		
Address 2765 Oxford st Town/City Oxford Postcode 0x4 oc2		
GP Details		
Code 9989 Dr Applesauce Practice Family Find GP	Click Pe	aictor
Address 1111 London St Town/City London Postcode OV6 7EN		gister

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

31. 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.



14. Managing Information Directories

14.1. 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.



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

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.



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.

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



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

14.2. 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.



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

							Dashboard	Patient Sea	Quit Administration	city
Hide	city	/EHR - Admin	istration - Manage	Directory			Cushbourd	utient deu		Show
► System	(GP	Details) 🔶 2			Specialty: cityEHR Featu	ure Demo 🗸 Directory Ty	pe: Entry	Directory	(GPDetails)	~ 🖻
► Database	Edit	t GPCode Code	GPName Dr	GPPractice Practice	LookUpGP Find GP	GPLookUpKey*	Address	ddress	(GPDetails) (Demographics)	
► Information Model	×	101	Smithson	The Varsity Clinic		101 Oxford	19 St Jol	's Street	 (ClinicDetails) Registration Configuration (RegistrationConfiguration) 	,
Directory Manage Directory	×	102	Wright	Jericho Health Centre		102 Oxford	79 Walto			
Import Directory	1									
► Users and Care Teams	1									
► Knowledge Sources										
Patient Records					Select	which ent	try dir	ecto	ory you would like t	0
Cohort Searches	modify									
Export Data Sets Redirect Natifications										
My User Account										
Manage Patient Access										
Test Web Service										
cityEHR Version Number - V1.7-2021-12-08-1 User: cit	VEHR A	dministrator / Elfin 2 / en	-gb Logged on: 14:08:52 Thu	rsday, 9th December 2021 Last	logged on: 09:23:19 Thursday, 9th Decer	nber 2021				



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

	Dashboard Patient Search Patient Cohorts In-Tray Registration
Hide	cityEHR - Administration - Manage Directory
► System	(GPDetails) 2 Specially: cityEHR Feature Demo → Directory Type: Entry → Directory: (GPDetails) → Id
► Database	Edit GPCode Code GPName Dr GPPractice Practice LookUpGP Find GP GPLookUpKey* Address Address Town Town/City Postcode Postcode
Information Model	X 101 Smithson The Varsity Clinic 101 Oxford 19 St John's Street Oxford OX1 3AA
▼ Directory	X 102 Wright Jericho Health Centre 102 Oxford 79 Walton Street Oxford 0X2 9GD
Manage Directory	
Import Directory	
Users and Care Teams	You can add directories by clicking
► Knowledge Sources	Tou can add an ectories by cheking
► Patient Records	", "" or you can modify avisting once
► Cohort Searches	+ or you can modify existing ones
► Export Data Sets	
Redirect Notifications	by making changes in the text boxes.
My User Account	
Manage Patient Access	
Test Web Service	
	-

14.3. 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".

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

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

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!

Quit Administration

15. 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.

15.1. Setting Up User Roles

- 15.2. Assigning Roles for a User
- 15.3. Role-based Access Control to Functions

15.4. Restricting Access to Care Team Patients

GALVIN, Howard (mr) Born: 17-Mar-19 Patient Id 38503316 NHS Number 879	5/7 (45 years) Gender: male	Disk Administration City Diskboard Patient Genroh Patient Cohorts In Pray Regulation ELLS ELLS ELLS
In Progress New Ho	⁵⁰ Events Summariles Forms Letters Pathways Care Settings objEHR Feature Demo 👻	Show Show
26-Apr-2022 Lifestyle Assessment	26-Apr-2022 - Lifestyle Assessment	Action Display Current Status 🤍 👿 🔊 🕞 🖶 🗧 🗸 😝
	Literyle Assessment Status Completed Mix-Assessment Eulore Up Status In Progress v	
	Body Mass Index	

16. Care Pathways – documentation coming soon!

16.1. 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 screenshot below.

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

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

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

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

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

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.

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. See screenshot below.

16.2. Using Sub-Pathways

- one with sub pathways

16.3. Pathways with Repeating Loops

- one with repeating loops

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

In Progress New Hide	Events Summaries Forms	teners Pathways	Show
▼ Elfin 2 (12)	09-Dec-2021 - Invitation to F	ELS Assessment - Patient	8
Did Not Attend – Physician	1 Aug		^
Out of Area – Physician			
	2		
Invitation to FLS Assessment - Patient			
Invitation to FLS Assessment			
Footer			
Invitation for DXA - Patient		NHS	
Treatment Recommendation - For Patient and	Forename Wilhelmina	Oxford Health	
Family	Surname Winston	NHS Foundation Trust	
Monitoring Outcome 16 Weeks - Patient	NHS Number 12345		
Monitoring Outcome 52 Weeks - Patient		Citie Datas	
Change in Treatment Recommendation – Patient		Lenie Coop	
Did Not Attend - Patient	Dear: Wilhelmina Win	ston Date [pp. par. 2013]	
FLS Assessment and Recommendation –	Address: 1063 Richards 5	St. VisiloC2, Vancouver	
	Invitation to FLS Assessm	nent	
Change in Treatment Recommendation – Physician	You recently	y attended the Fracture Liaison Service for your broken	
	bone. As par make sure y break anoth	at of vjour routine NHS care you should have tests to your bones are strong because 16% of patients will ber bone in the med 2 vares.	
	Appointment Invitation:	We would like to inste you to attend an appointment with the	
		Fracture Prevention Nurses. This is to find out if you need further specialized treatment to protect you from breaking any more bones.	
	Appointment Information:	We have enclosed the appointment details for you. If this is not convenient then please give us a call so that we can rebook you for	
17 Clinics	al Corr	espondence	

17.1. Creating a Letter to the Patient

- 1. Quit and Navigate to the Elfin 2 application.
- 2. Register a Patient in Elfin 2.
- 3. Select that patient.
- 2. Navigate to "Letters" in your chosen application.
- 2. Click on any one of the letters with the ending "-Patient"

3. Navigate around this letter. Below is an example of what the letter called "Invitation to FLS Assessment - Patient" looks like. Click inside the large text boxes filled with text – you should be able to customize these.

4. You should be able to export the patient letter to word. See step 7.3 for exporting instructions.

17.2. Creating a Letter to the GP

1. Navigate to "Letters" in your chosen application. For this exercise, we will use the application called Elfin 2. Please note that the process works the same as in the Feature Demo.

2. Navigate to a GP Letter on the menu on the left of the screen, like you did for Patient Letters. See example below.

WINSTON, Wilhelmina (Ms) Born: 05-Jun Patient Id 95325737 NHS Number 345689	Antise (3) years) Gender: Female Quat. Administration City Dashbourd Patient Search Patient Coborts. In-Tray: Registration	
In Progress New Hide	Vents Summaries Forms Latters Pathways	ł
▼ Elfin 2 (12)	07.Dec.2021 - General Note to Physician *	1
De fer Alered - Physician Out of Area - Physician Descrit little to Physician birtoluctors and Fractures Action Peris Trastement Recommendations Unablephi Arbon Datesproproses Rein Factures Cambridges Examination Findings Fall Teak Assessment Lickonstrop Results Datesproproses Examination Findings Examination Findi	Image: Section of the sector of the secto	
Treatment Recommendation – For Patient	Pie: Wilhelmina Winston D08 06-Jun 1988 AHris Number 12245 Date: Office O	
Monitoring Outcome 16 Weeks - Patient Monitoring Outcome 52 Weeks - Patient	Introduction and Fractures Toor patient was recently seen at the Fracture Laison Senice because they looke the Molowing bones:	
Change in Treatment Recommendation - Patient Did Not Attend - Patient	Action Points	
FLS Assessment and Recommendation – Physician	Treatment Recommendations interaction Upon agement with the patient, we would be grateful if you could prescribe the following medications:	
Change in Treatment Recommendation – Physician	Drag Recommendation: calictonin for 5Years Supplement Recommendation: Calcium Alone for 3Years Treatment Advice.	

3. You can export this letter and also print it. Please see section 7.3 for instructions on how to do so.

17.3. Printing and Exporting to Wordprocessors

1. Press the button with the "Word" or the "Print" Icon at the top right of the screen. Word Button:

In Progress New	^{Hide} Events Summaries Forms <mark>Letters</mark> Pathways	Shov
▼ Elfin 2 (12)	08-Dec-2021 - Out of Area – Physician	
Did Not Attend – Physician		
Out of Area – Physician		Drint Dutton
Signature:		Print Dutton
General Note to Physician		것 - 영상원양전 - 20 전 전 - 20
Invitation to FLS Assessment - Patien	et and the second s	
Invitation for DXA – Patient		
Treatment Recommendation – For Pati Family	iert and	NHS
Monitoring Outcome 16 Weeks - Patie	nt Dr. Pauline Smith	NHS Foundation Trust
Monitoring Outcome 52 Weeks – Patie	ant 12345	
Change in Treatment Recommendation	n - Dear: Dr. Pauline Smith	
Patient		Service Name: Select Value V
Did Not Attend – Patient		Tel:
FLS Assessment and Recommendation	— nc	Opening Times: Email:
Physician	Re: Wilhelmina Winston DOB 05-Jun.1968 NHS Number 12345	
Change in Treatment Recommendation Physician	n – 1063 Richards St Vancouver V6B0C2	Date: 08-Dec-2021
	This patient was identified by the Fracture Liaison Service following their recent low trauma fracture and referred for a DEXA scan, in line with current guidance.	

Print Button: