



Queen Mary
University of London



APL-Renal tool

User guide for SystmOne

ceg

Clinical Effectiveness Group
Queen Mary University of London

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About

Helping practices manage their patients with chronic kidney disease

The CEG APL-Renal tool highlights critical falls in renal function and helps GP practice teams to manage their patients with early or late chronic kidney disease (CKD).

The tool will support you to:



List all adults with key indicators of CKD and filter the list into cohorts to take action

- Identify patients for follow-up for overdue measures
- Export a list of patients to send appointment messages, or key information to send with a referral
- Improve CKD coding for accurate disease registers



Review critical falls in eGFR or uncontrolled blood pressure

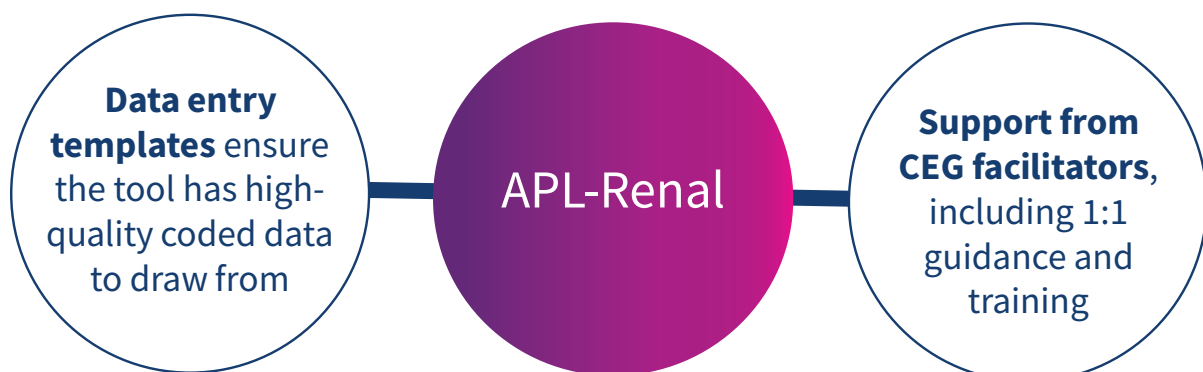


Tailor your approach

See eGFR trend over time, urine ACR, and key medications for each patient

Supporting elements

The APL-Renal tool is part of a wider programme of support that CEG provides to GP practices in the North East London NHS region, including data entry templates and training and guidance from our team of facilitators. The tool is intended for use with these supporting elements in place.



Practices using the east London Community Renal Service can incorporate the tool into their processes for this. (APL-Renal replaces CEG's former 'Falling eGFR trigger tool').

About

Definitions

With no filters selected, APL-Renal will list all patients in your records who are aged 18+ and **ever had**:

- an estimated glomerular filtration rate (eGFR) reading of less than 60ml/min, **or**
- a urine albumin to creatinine ratio (ACR) showing proteinuria of 3mg/mmol or more.

Note: There may be patients with a one-off eGFR or ACR meeting the criteria above, who do not have CKD.

Latest eGFR	Most recent eGFR reading within the last two years (prior to the search date). The Patient Information view displays up to six values and shows trend over time.
Highest eGFR	Highest of the six most recent eGFR readings within the last two years.
Fall in eGFR	The difference between the Latest eGFR and Highest eGFR values. Patients are automatically listed from greatest to smallest eGFR fall.
Urine ACR	Most recent urine ACR value within the last two years.
Comorbidities	“Yes” if the patient has been coded with chronic kidney disease stage 3-5 (“CKD”), cardiovascular disease (“CVD”), type 1 or type 2 diabetes (“Diab T1/T2”), hypertension (“HTN”), heart failure (“HF”) or atrial fibrillation (“AF”).
BP	Most recent blood pressure value recorded (no maximum timeframe).
Medications	Prescribed within the last six months. Including SGLT2 inhibitors, ACE inhibitors/ ARBs, statins. The Patient Information view includes doses.

Values in red

Urine ACR: “Check Record”

Due to limitations in SystemOne reporting, if a laboratory records a result as a line of text rather than a number, SystemOne reports this result as a zero. In most cases this is because they have written “ACR is less than 3”, but it can be for other reasons, such as a rejected sample.

Where the result is reported as a zero, the tool checks for associated individual urine albumin and creatinine values to calculate the ACR manually and report if it is normal.

- If the calculated value is abnormal (≥ 3.0), or there are other unexpected values, the tool will display “**Check Record**” in red, indicating that the user should check SystemOne to see the results in detail.
- If the calculated value is less than 3, the tool will display “**<3**” in red.
- If there are no valid results to make the calculation, the field will be blank.

eGFR

The laboratories in North East London are changing GFR calculation from MDRD to CKD-EPI. Where a value shown in the tool is derived from a mixture of these methods, we have flagged it in red.

The tool uses **QOF indicator codes** for all variables unless indicated otherwise. Code sets are available on request - please speak to your CEG facilitator.

About

Example cohorts

The tool will support practices to meet the contractual requirements for renal health. For example, you could use the filters to identify people with:

- **Significant fall in eGFR**
- **Very low eGFR**
- **Latest eGFR <30 + No repeat eGFR**
- **No CKD code**
- **CKD (3-5) code**
 - + no urine ACR in last 12 months
 - + diabetes + urine ACR ≥30
 - + hypertension + BP <140/90mmHg
 - + hypertension + prescribed ACE/ARB
 - + diabetes + urine ACR ≥30 + prescribed SGLT2
 - + prescribed statins

You can **exclude people who have already been reviewed** since their last eGFR reading using the filter: '**Referral or Review after latest eGFR**'. For this feature to work, practices must enter the correct codes for renal review, renal referral or Structured Medication Review (SMR), which are included in the CKD section of the CEG Long Term Conditions template.

Limitations

The CEG APL-Renal tool is not a diagnostic tool or intended to replace clinical judgement

The tool selects people for whom there may be issues of clinical concern and displays their data. The tool does not make management recommendations – these are entirely a matter for the clinician.

Information in the tool may be incomplete

- APL-Renal only displays **medications selected as relevant** to the tool, it does not show all prescribed medication.
- The tool only presents information that is **coded** in the patient health record using standard codes described by NHS Digital. If clinicians use free text or non-standard codes for eGFR values, demographic information or referral status, these will not display in the Renal tool.
- Clinicians' decisions must be based on review of the full EMIS or SystemOne record to check all indicators, prescribing, and any other relevant information.

The tool should be used in conjunction with CEG templates

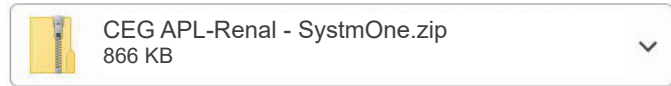
Our templates will support you to code activity correctly and ensure the tool has high quality data to draw from.

Step-by-step: Downloading the tool

You only need to do this once

Step 1: Download

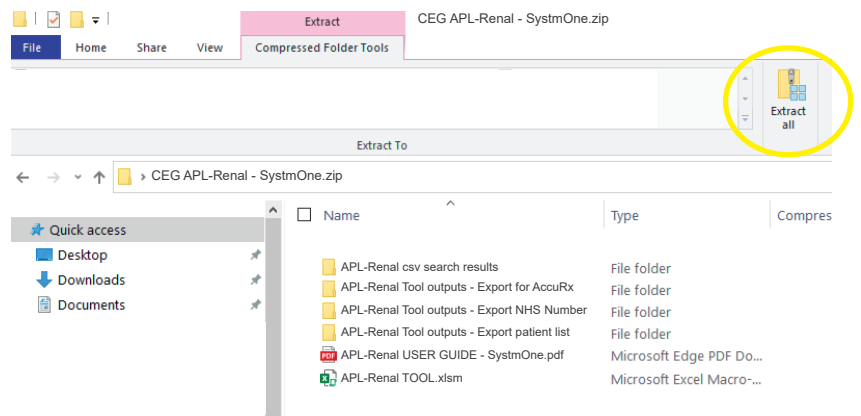
1.1 Download the SystmOne zip file.



1.2 Double click the zipped file, then double click again.

Step 2: Extract

Click 'Extract all' to extract the files.



Step 3: Save

Save the files in a secure device or network that is accessible to other practice staff, including clinicians reviewing your work. **Choose a secure device or network if you intend to save exports of patient identifiable data in the same place.**

Step 4: Unblock macros

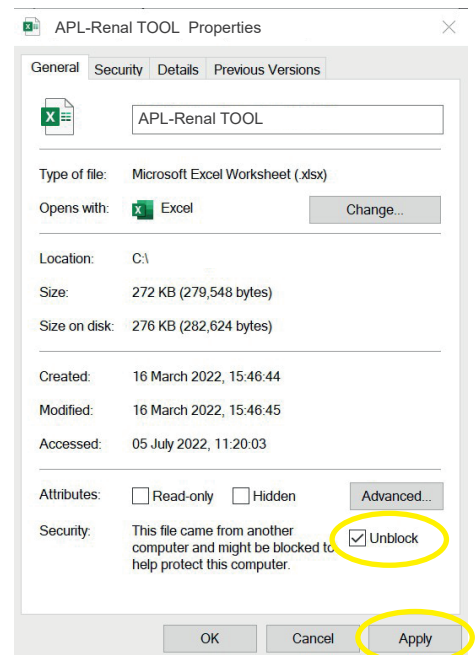
Microsoft has introduced a security feature that blocks Excel macros by default. Macros are automated actions that the tool uses to run - without them, it will not work.

4.1 Right click on the 'APL-Renal TOOL' XLSM file and select 'Properties'.

4.2 In the 'General' tab, tick the box to 'Unblock'

4.3 Click 'Apply'. You must click 'Apply' before 'OK', otherwise the change won't take affect.

If you accidentally click 'OK' without clicking 'Apply', the option will no longer be visible and you will need to download the file again.

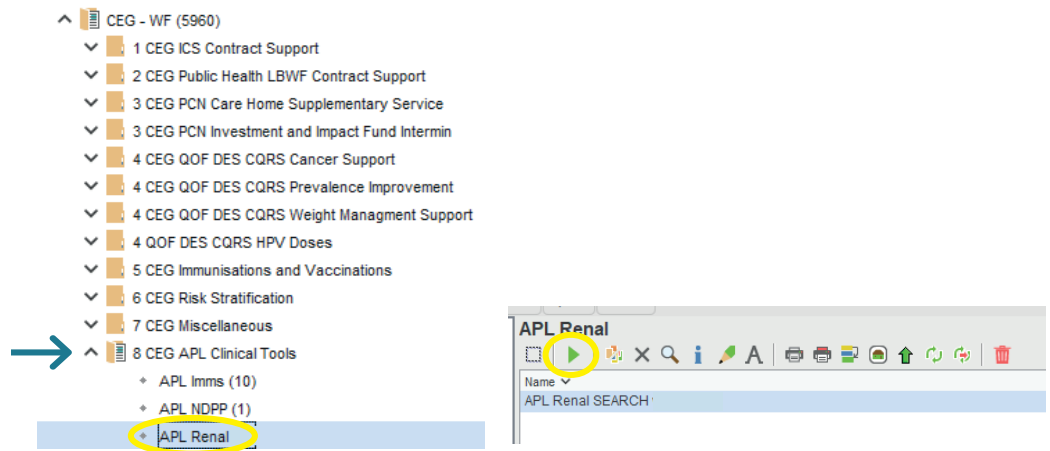


Step-by-step: Using the tool

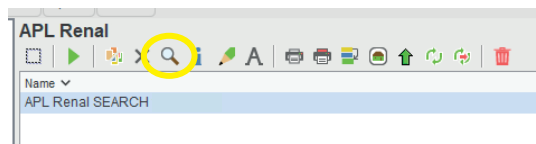
Step 1: Run the reports in SystemOne

1.1 Open SystemOne. Locate the APL-Renal reports (saved in the 'CEG APL Clinical Tools' folder).

Highlight the search file and click 'run' (green play button).

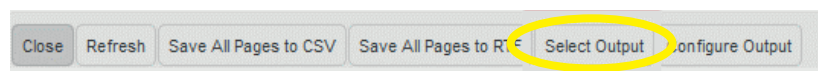


1.2 Once the search has run (showing a tick), click 'Show patients' (magnifying glass).

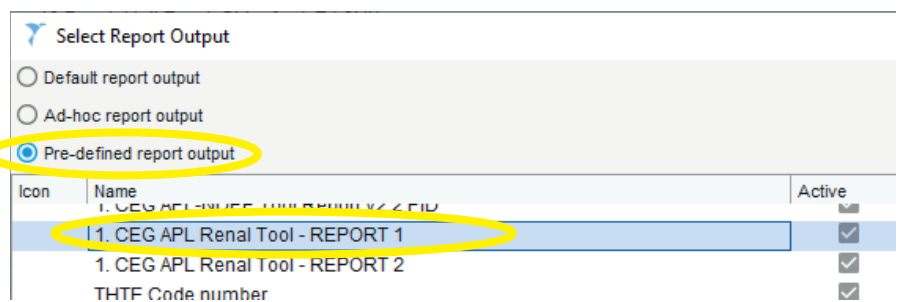


Step 2: Export the report results

2.1 Click 'Select Output', on top of the ribbon.

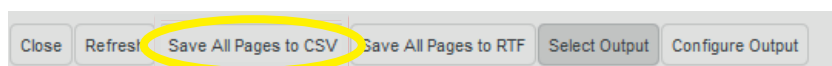


2.2 Select 'Pre-defined report output'.



2.3 Select APL-Renal tool - Report 1, click 'OK'.

2.4 Click 'Save all pages to CSV' on top of the ribbon.



2.5 Save the file in its own folder - you can use the empty folder 'csv search outputs' included in the tool download if you choose to, as long as this has been placed in a secure location.

2.6 Repeat steps 2.1 to 2.4, selecting the APL-Renal tool - Report 2. Save it in the same folder as Report 1.

Due to their size, the reports may take a little longer to export than other reports
If you want to continue working while you wait, you can open a second instance of SystemOne.

Step-by-step: Using the tool

Step 3: Import data into the tool

3.1 Open **APL-Renal TOOL.xlsm** (Excel file).

3.2 Select **'SystemOne'** as your clinical system:



3.3 Click **'Press to locate CSV file'**. Find and select the folder containing Report 1 and Report 2, which you just exported from SystemOne. Each time you use the tool, run new reports and import fresh data. A warning message will pop up if you try to import a report that is more than two weeks old.



The tool will list the patients from your search and display relevant information from their record.

With no filters selected, APL-Renal will list all patients in your records who are aged 18+ and **ever had**:

- an estimated glomerular filtration rate (eGFR) reading of less than 60ml/min, **or**
- a urine albumin to creatinine ratio (ACR) showing proteinuria of 3mg/mmol or more.

There may be patients with a one-off eGFR or ACR value meeting the criteria above, who do not have CKD.

The screenshot shows the main interface of the APL Renal Tool. The 'SystemOne' option is selected. The 'Import CSV file(s)' button is highlighted. The 'Practice Code' is 'F800000'. A warning message is displayed: 're changing GFR calculation from MDRD to CKD-EPI. Where the values used in this tool are derived from a mixture of these methods, we have flagged the value in RED'. The 'Filters' section is expanded, showing various criteria for eGFR, BP, CKD, and other conditions. The 'Summary' table is visible on the right, showing the following data:

Summary	
Entire cohort	800
% CKD (3-5)	37%
% CKD (3-5) with uACR within 12m	53%
% CKD (3-5) + Diab + uACR ≥ 30 with SGLT2	23%
% CKD (3-5) + HTN + Diab + uACR ≥ 3 with ACEI/ARB	82%
% CKD (3-5) + HTN + uACR ≥ 30 (No Diab) with ACEI/ARB	86%
% CKD (3-5) + HTN + uACR ≥ 70 with BP < 130/80	40%
% CKD (3-5) with Any Statin	75%

The patient list table below shows the following data:

Full Name	Age	Gender	Patient Reference no.	Latest eGFR		Highest eGFR		Fall in eGFR*	Urine ACR mg/mmol	CKD (3-5)	CVD	Diab T1/T2	HTN	HF	AF	BP	SGLT2 Issued (6m)	ACEI/ARB Issued (6m)	Statin Issued (6m)	Renal referral (latest ever)	GP review (latest ever)
				Value	Date (2y)	Value	Date (2y)														
Patient_1	75	Female	11200	31	22-02-2023	90	23-03-2022	59		No	Yes	No	No	No	Yes	85/58	No	No	Yes		
Patient_2	67	Male	11201	40	07-02-2023	90	09-01-2023	90	7.1	No	No	No	No	No	No	128/69	No	Yes	No		13-01-2023
Patient_3	54	Male	11202	54	10-08-2022	90	31-03-2021	36	584.4	No	No	Yes	Yes	No	No	147/91	No	Yes	Yes		

The screenshots in this guide show a dummy dataset, not real patients.

Summary

The tool also shows a summary for the whole patient list (irrespective of filters), so you can see an overview of your practice's performance.

Step-by-step: Using the tool

Step 4: Filter the patient list

4.1 Use the **checkboxes** to filter your list and create a cohort of patients to focus on. The tool will list all patients who meet the criteria you select. You can use multiple filters at once. Click the same checkbox again to deselect it.

The screenshot shows the APL Renal Tool interface. The top navigation bar includes the CEG logo, the tool name 'APL Renal Tool', and the Queen Mary University of London logo. Below this is a header with 'eGFR < 60 ml/min OR urine ACR ≥ 3mg/mmol ever recorded'. The main interface is divided into a 'Filters' section on the left and a 'Summary' section on the right. The 'Filters' section contains various checkboxes for clinical criteria such as 'Fall in eGFR', 'BP (mmHg)', 'CKD (3-5)', 'ACEI/ARB issued', 'Statin issued', 'Diabetes', 'Hypertension', 'Heart Failure', 'Atrial Fibrillation', and 'Referral or Review after latest eGFR'. A yellow circle highlights the 'CKD (3-5)' and 'ACEI/ARB issued' filters. The 'Summary' section shows a table of patient counts for various criteria, with a total of 861 patients. Below the filters is a table of patient data with columns for 'Full Name', 'Age', 'Gender', 'Patient Reference no.', 'Latest eGFR', 'Highest eGFR', 'Fall in eGFR', 'Urine ACR', 'CKD (3-5)', 'CVD', 'Diab T1/T2', 'HTN', 'HF', 'AF', 'BP', 'SGLT2 Issued (6m)', 'ACEI/ARB Issued (6m)', 'Statin Issued (6m)', 'Renal referral (latest ever)', and 'GP review (latest ever)'. A red circle highlights the 'Urine ACR' column for Patient_561, which contains the text 'Check Record'.

Full Name	Age	Gender	Patient Reference no.	Latest eGFR Value	Latest eGFR Date (2y)	Highest eGFR Value	Highest eGFR Date (2y)	Fall in eGFR*	Urine ACR mg/mmol (2y)	CKD (3-5)	CVD	Diab T1/T2	HTN	HF	AF	BP	SGLT2 Issued (6m)	ACEI/ARB Issued (6m)	Statin Issued (6m)	Renal referral (latest ever)	GP review (latest ever)
Patient_51	92	Male	111111162	56	08-09-2023	90	09-05-2022	34	3.6	Yes	No	Yes	Yes	No	No	141/75	No	No	No	15-12-202	
Patient_707	65	Male	111111818	54	29-09-2023	69	06-10-2022	15	3.6	Yes	Yes	Yes	Yes	No	No	158/54	No	No	No	24-08-202	
Patient_561	75	Male	111111672	65	07-09-2023	62	29-06-2022	3	Check Record	Yes	Yes	Yes	No	No	No	133/70	No	No	No	25-08-202	
Patient_82	55	Female	111111198	43	25-10-2023	39	21-04-2023	4	58.2	Yes	No	Yes	No	No	No	130/82	No	No	No	13-10-202	
Patient_352	40	Male	111111468	41	14-03-2023	37	04-05-2022	4	<3	Yes	No	Yes	Yes	No	No	125/68	No	No	No		

Due to limitations in SystemOne reporting, some Urine ACR results may appear in red

This indicates that the lab result is recorded as text instead of a value in SystemOne. Where this is the case, APL-Renal calculates a value from separate test results in the patient record. (More information about this is included with the [definitions](#) on page 3.)

- “**Check Record**” indicates that the value may be higher than 3 and you should check SystemOne to see the results in detail.
- “<3” indicates the calculated value was less than 3.
- If there is no Urine ACR recorded in the last two years, or no valid numbers in the patient record to make a calculation, the field will be blank.


Step-by-step: Using the tool

Step 5: View more information about an individual patient


5.1 Click on a name in your list to view the Patient Information page for that individual. This view displays more detail, including eGFR trend over time and prescribed dosage of relevant medications. Click **back** to return to the patient list.

Export Patient Info

You can generate a PDF of the Patient Information page, which could be sent with a referral.



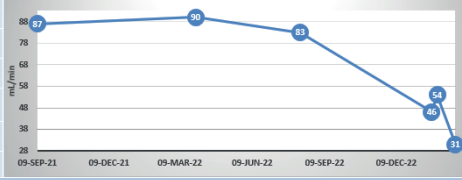
APL Renal Tool
eGFR < 60 ml/min OR urine ACR ≥ 3mg/mmol ever recorded



Patient Information			
Full Name	Patient, 1	Gender	Female
Date of Birth	26/03/1948	Age	75
NHS Number	1111111110	Patient record #	11200
Ethnicity	White British - ethnic category 2001 census		

The laboratories are changing GFR calculation from MDRD to CKD-EPI. Where the values used in this tool are derived from a mixture of these methods, we have flagged the highest and most recent eGFR values within 2 years in RED.

eGFR value (ml/min)	Date Recorded (last 2y)
31	22-Feb-2023
54	30-Jan-2023
46	23-Jan-2023
83	09-Aug-2022
90	29-Mar-2022
87	09-Sep-2021



CKD coding	Code Description	Date Recorded
CKD stages 3 – 5		

Clinical data	Value	Date Recorded
Urine Albumin/Creatinine Ratio (latest 2y)		
Systolic/Diastolic BP (latest)	85/58 mmHg	06-Mar-2023
QRisk score (latest)	29.99%	11-Jul-2017

Risk Factors	Code Description	Date Recorded
CVD (IHD/Stroke/TIA/PAD)	Peripheral vascular disease	06-Sep-2022
Hypertension		
Heart Failure		
Diabetes (T1/T2)		
AF	Atrial fibrillation	06-Mar-2023

Medications	Dosage name	Date Recorded
SGLT2 (6m)		
ACEI/ARB (6m)		
Statin (6m)	Yes Atorvastatin 80mg tablets	06-Mar-2023
Other Lipid Lowering Therapy (6m)		

Renal Referral	Code Description	Date Recorded
Referral Status (latest)		

← BACK

Export Patient Info



This tool shows the correct CKD Classification stage based on age, sex, eGFR and Urine ACR and the patients risk of progression to end-stage disease.

Prognosis of CKD by GFR and Albuminuria Categories

		Albuminuria categories Description and range		
		A1	A2	A3
		Normal to mildly increased <30 mg/g <3 mg/mmol	Moderately increased 30-299 mg/g 3-29 mg/mmol	Severely increased ≥300 mg/g ≥30 mg/mmol
GFR categories (ml/min/1.73 m ²) Description and range	G1	Normal or high	≥90	Green
	G2	Mildly decreased	60-90	Yellow
	G3a	Mildly to moderately decreased	45-59	Yellow
	G3b	Moderately to severely decreased	30-44	Orange
	G4	Severely decreased	15-29	Red
G5	Kidney failure	<15	Red	

Green: low risk (if no other markers of kidney disease, no CKD); Yellow: moderately increased risk; Orange: high risk; Red: very high risk. KDIGO 2012

[KDIGO 2012 Clinical Practice Guideline](#)
[Kidney Failure Risk Score](#)
[NICE Renal recommendations](#)

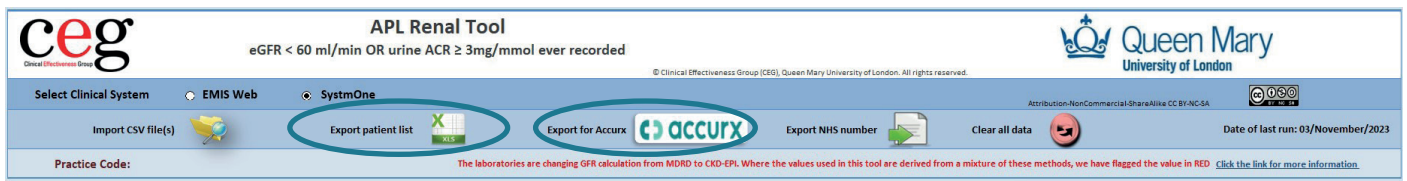
Legend
 CKD (3-5) or Other Comorbidity

Links to external resources

Includes a static chart showing CKD prognosis according to eGFR and urine ACR values, and a link to a validated kidney failure risk calculator (hosted by the University of Leicester) that can help with classifying CKD stage.

Step-by-step: Using the tool

Step 6: Print or export your list



Ways to use your filtered list outside of the tool:

Option 1: Print

Click '**File**' then '**Print**'. Set the orientation to 'landscape' and scale to fit.

Option 2: Export as an Excel file

Click '**Export patient list**'.

Option 3: Export list for Accurx

Click '**Export for Accurx**'.

To make your list available to other practice staff

To contact patients or arrange appointments

The APL-Renal download includes a set of empty folders that you can use to save and organise your exports. Ensure the folders are placed in a secure location, as the exports will contain patient identifiable information.

Troubleshooting

Frequently Asked Questions

Why do some patients have blank eGFR or ACR results?

If a patient has no eGFR / urine ACR reading in the last two years, that field will be blank - you should check the individual's patient record to see if there are any results, and to check if this is an issue of concern.

My patient's CKD or proteinuria is resolved but they are still showing up in the tool, why is this?

Adults with previous CKD or proteinuria will be picked up by the tool even if these conditions have resolved. The tool does not exclude such people.

Can I select multiple filters at once?

Yes – For example you could choose BP \geq 160/100 + Hypertension + No ACE/ARB

How do I deselect a filter?

Click the individual checkbox again to untick the filter. Or click 'Reset filters' to deselect all.

What does the 'Reset to clear' button do?

This will remove all patients from the tool – you will have to reimport your search results to use the tool again.

Can I save the tool with a patient list within it?

If you want to save a particular cohort, export it using the instructions on page 9. Save the export in a suitably secure location as it will contain patient identifiable data.

Who do I contact for help?

Practices in North East London should contact their [local CEG facilitator](#). They can help you to install the tool and use it effectively.

Contact us

If you have any questions or feedback about our APL-Renal tool or this user guide, please get in touch:

CEG-Feedback@qmul.ac.uk
qmul.ac.uk/ceg/about-us/contact-us

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