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1.0 Scope of Guideline

This guideline provides tuberculosis (TB) screening and follow-up recommendations and procedures for patients in BC's Kidney Care Clinics (KCCs) for whom there has been a referral initiated for a Living Donor Transplant.

Refer to Appendix 1 for an overview of the TB Screening & Follow-Up Workflow.

2.0 Recommendations

Recommendation #1: Screen all KCC patients for TB who have had a Living Donor Transplant referral initiated using the 3-component protocol outlined in recommendation #3 (TB screening questionnaire, IGRA test and chest x-ray). See recommendation #2 for exceptions.

IGRA blood samples can be drawn in any hospital that has been designated (trained and set up) as an *IGRA collection site* by the BCCDC Provincial Health Laboratory. See www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/TB/IGRAsites.pdf (note the restricted days/hours for IGRA blood collection).



For the occasional patient who cannot access one of these sites within the timeline of the transplant referral submission, utilize the "bypass to expedite" option in PROMIS and submit the transplant referral. TB screening will be arranged by the (1) Transplant Centre (when in Vancouver for appointment); or (2) Dialysis Centre (if they start on dialysis).

Recommendation #2: Do not rescreen patients previously screened using the BCCDC/BCR screening process (questionnaire, IGRA and chest x-ray) (see recommendation #3 for exception). This includes patients changing treatment types (e.g., PD to HD, transplant to HD, KCC to PD) regardless of the length of time since the initial screening (refer to Procedure section for ways to identify if previous screening was done). The BCCDC/BCR screening process started in 2016.

For patients with a previous documented IGRA test (anytime in the past) but not as part of the 3-component protocol outlined in this guideline:

- Submit the TB screening questionnaire and chest x-ray as per the 3-component protocol.
- Do not repeat the IGRA. Enter the date the IGRA was completed, and the TB Physician will advise if a more recent IGRA is required.

In general, repeat, or serial IGRA testing is not recommended. In certain circumstances, it may be appropriate, most commonly following a known TB exposure. If unclear for a specific case, contact the Nurse Consultants in TB Services (phone: BCCDC, 604.707.5678; Island Health, 250-519.1510).

Recommendation #3: Utilize the BCCDC/BCR 3-component protocol to screen for TB:

- 1. TB screening (risk assessment) questionnaire.
- 2. IGRA blood test: QFT Plus.
- 3. Chest x-ray within the past 6 months.

The TB Screening Tracking Report in PROMIS shows the TB Assessment Date (completion of questionnaire), chest X-Ray order date, TB IGRA order date and the date that BCCDC was alerted (BCCDC is alerted automatically by PROMIS when the three components are completed).

TB screening (risk assessment) questionnaire (see Appendix 2 for example)

This questionnaire is available as a fillable form in PROMIS. Print the questionnaire from PROMIS (demographics will auto populate), discuss the questions with the patient and enter the responses into PROMIS. BC Centre for Disease Control (BCCDC) will have access to the completed questionnaire, along with the results of the IGRA test and chest x-ray, in PROMIS for analysis.

IGRA testing (see Appendix 3 for example of IGRA lab requisition)

The IGRA lab requisition is available in PROMIS (demographics will auto populate). Print the requisition from PROMIS and give to the patient to take to the laboratory. BE SURE TO USE THE IGRA LAB REQUSITION IN PROMIS and not the standard lab requisition.



BCCDC will have access to the results of the IGRA test, along with the completed questionnaire and chest x-ray report, in PROMIS for analysis. The results of the IGRA tests are usually available within 1 week of the sample being drawn.

Chest x-ray (see Appendix 4 for example of chest x-ray requisition)

The chest x-ray requisition is available in PROMIS (demographics will auto populate). Print the requisition from PROMIS and give to the patient. BE SURE TO USE THE CHEST X-RAY REQUSITION IN PROMIS and not the standard radiology requisition.

The patient may have his/her chest x-ray at any <u>hospital</u> medical imaging department. Once the report is available, a copy will be sent by the medical imaging department to the KCC <u>and</u> to the BCCDC. BCCDC will manually upload the report into PROMIS.

If the patient has had a chest x-ray within the past 6 months, a repeat chest-ray is not required. Enter the date the x-ray was completed into PROMIS. BCCDC will manually upload the x-ray report into PROMIS. If the report/image is inconclusive, BCCDC will advise the KCC to provide the patient with a chest x-ray requisition specific for ruling out TB.

BCCDC will have access in PROMIS to all 3 components of TB screening to complete their analysis - the completed TB screening questionnaire, IGRA test results and the chest x-ray report.

Recommendation #4: If an IGRA result is "indeterminant" or "unsatisfactory," repeat once (if available at your site, consider T-spot instead of a second QFT). If the second result comes back indeterminant or unsatisfactory, do not repeat. The TB physician will review the file and issue a report based on the information available.

Recommendation #5: Once all 3 components in recommendation #3 have been completed, PROMIS will automatically alert BCCDC.

Once BCCDC receives the "Alert" from the renal unit, they will check PROMIS for the completed TB screening questionnaire, the IGRA blood test result and the chest x-ray report. If any of these components are missing one month after the "Alert" was sent, BCCDC will notify the patient's unit. The unit will be responsible for follow-up with the patient. If components are still missing after another 2 months, the incomplete information will be sent to the TB screening physician who will issue a report indicating incomplete results.

If the patient wishes to complete the screening in the future (e.g., when starting the transplant process), the process/referral will need to be started again at that time.



Recommendation #6: After analysis of the results, BCCDC TB Services will issue a report/letter, including recommendations.

BCCDC TB Services will manually upload the report/letter, including recommendations, into PROMIS. Reports/letters will be available in PROMIS within 1 month of the three tests being received by the BCCDC. To review the report/letter in PROMIS, search for the patient, go to "Documents," then filter by "TB Services Recommendations" tab.

Distribution of the report and follow-up of results will depend upon the outcome of testing. See Appendix 5 for an overview of report/letter distribution and follow-up for each type of result. See Appendix 6 for sample copies of each result type report/letters.

*For Island Health, BCCDC TB Services will fax copies of the TB screening questionnaire, IGRA blood test results and the chest x-ray report to the Island Health TB Clinic (BCCDC will also upload a copy of the chest x-ray report into PROMIS). The Island Health TB Clinic will analyze the results and issue a report/letter, including recommendations. The Island Health TB Clinic will alert BCCDC TB Services of the availability of a report in Panorama. BCCDC will upload a copy of the report in PROMIS. Island Health TB Clinic will follow-up on the results with the patient/appropriate care providers.

3.0 Procedure

Kidney Care Clinic responsibilities

- 1. Designate a person(s) responsible for maintaining TB screening processes for patients referred for transplant and to ensure the process is completed.
- 2. Incorporate into the pre-printed orders for KCC patients referred for transplant:
 - a. Complete TB screening questionnaire
 - b. IGRA blood test (QFT Plus)
 - c. Chest x-ray within the past 6 months
- 3. Print the following documents from PROMIS and add to the records of KCC patients referred for transplant (unless a previous TB screening report is on file):
 - a. Auto-populated TB screening questionnaire
 - b. Auto-populated laboratory requisition for IGRA blood test (unless a previous IGRA result is on file)
 - c. Auto-populated chest x-ray requisition (unless a chest x-ray was completed within the previous 6 months)
 - * It is important to use the forms in PROMIS that are auto-populated. DO NOT USE STANDARD LAB REQUISITIONS/CHEST X-RAY FORMS.



Procedure

Component		Action	Responsibility
1	Check for	Check if patient has been previously screened for TB using the	RN/Unit Clerk
	previous	BCCDC/BCR screening process (questionnaire, IGRA and chest x-	
	IGRA/TB	ray). If so, screening does not need to be repeated.	
	screening report		
		To check for previous TB screening:	
		On PROMIS 4, go to Renal > TB Assessment	
		If the TB Screening Questionnaire Summary is blank, TB	
		screening was not previously completed	
		If there is a pre-existing TB Screening Questionnaire, click to open	
		Click on or scroll down to TB Services Completes to see if	
		there has been a TB physician review	
		 To view the TB physician narrative reports: On PROMIS 4, go to Documents, filter by TB Services Recommendation TB Physician/Nurse Practitioner narratives are also automatically uploaded to CareConnect under Documents 	
2	TB screening	a. Print TB screening questionnaire from PROMIS:	Unit Clerk
	questionnaire	Select Reports menu.	
	See Appendix 2	DDB 29-Nov-2014 (Ty) PHN SEX M PROMIS ID P196980	
		Pt Info V Meds/Other V Med Hz V Renal V Transplant V Post COVID-19 V Results V Assessments V Documents Reports	
		 Select arrow next to TB Screening to view list of reports. 	
		Select TB Screening Questionnaire.	



Component	Action	Responsibility
	Reports > Reports	
	Search List Q	
	■ Dialysis Access	
	Patient Access Review VA Access Monitoring	
	Glomerulonephritis Flowsheet	
	HLA Laboratory Requisition Form	
	Lab Results Flowsheet	
	Laboratory Requisition Form	
	▲ Medications	
	Medication Prescription	
	Medication Profile	
	My Medications	
	Patient Monthly Results	
	Renal Facesheet	
	TB Screening	
	Chest X-Ray Requisition Collapse A-QFT Requisition	
	TB Screening Questionnaire	
	TB Screening Referral	

Component		Act	Responsibility			
qı	B screening uestionnaire ont'd		•	Select Assessment Date = blank (default). Select Run Report. Print out Questionnaire and place in patient's record.		
		RN				
		b. c.	Ente	r completed Questionnaire into PROMIS. Search for patient. Under Renal menu, select TB Services.	Unit Clerk	
				Modality Selection Dialysis Access PD Dialysis Prescriptions Post COVID-19 Results Results Results Results Results Results Results Results View Note: The post COVID-19 Results Results View Results View Results View Results View Results View Results View PD Dialysis Prescriptions		
	 TB Services > TB Assessment Under TB Assessment tab, click on Add button. Enter information from completed Questionnaire, including: Select Population at Risk checkbox. Select Renal TB Screening as the Reason for Screening. Under Risk Factors, select Chronic Renal Disease/Dialysis. Select Save. 					



Component		Action	Responsibility
	ICDA (OFT	Discard the hard copy of the Questionnaire once entered into PROMIS.	Hair Clark
3	IGRA (QFT Plus) blood test	 a. Check Care Connect/PROMIS for previous IGRA test. If none, print lab requisition from PROMIS: Search for patient. Select Reports menu (same row as the Renal menu). 	Unit Clerk
	See Appendix 3	 Select arrow next to TB Screening to view list of reports. Select IGRA-QFT Requisition. Note: Primary nephrologist will show as the ordering physician – do not change. Select Run Report. Print out requisition. 	
		b. Give requisition to patient & ask to take to IGRA lab (limited hospital labs are set up for IGRA blood collection & days/hours are restricted). See www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/TB/IGRAsites.pdf	RN or Unit Clerk



Component		Action	Responsibility
	IGRA (QFT Plus) blood test cont'd	 c. Document that patient was provided the requisition or, if applicable, the date a previous IGRA test was completed in PROMIS: Search for patient. Under Renal menu, select TB Services. Under TB Assessment tab, select record with the corresponding Assessment Date. Select pencil icon next to Nurse Completes to edit the record. Under IGRA Test section, check IGRA Test QFT checkbox and enter IGRA Order Date. Click Save. 	Unit Clerk
4	Chest x-ray See Appendix 4	 a. Check Care Connect for chest x-ray performed in the past 6 months. If none, print requisition from PROMIS: Search for patient. Select Reports menu (on the same row as the Renal menu). Select arrow next to TB Screening to view list of reports. Select Chest X-Ray Requisition. Note: Primary nephrologist will show as the ordering physician – do not change. Under Management Centre, select KCC. Under Unit, select KCC. Select Run Report. Print out requisition. 	Unit Clerk
		 b. Give requisition to patient to ask to take to hospital medical imaging department. c. Document that patient was provided the requisition in PROMIS or, if applicable, the date a previous chest x-ray was completed within the past 6 months: Search for patient. Under Renal menu, select TB Services. Under TB Assessment tab, select the record with the corresponding Assessment Date. Select pencil icon next to Nurse Completes to edit the record. Under Chest X-Ray section, enter the Order Date. Click Save. BCCDC will review results and upload into PROMIS. 	RN or Unit Clerk Unit Clerk
5	BCCDC will be notified	Once all 3 components have been completed, PROMIS will automatically alert BCCDC.	PROMIS

BCCDC contact for questions: TB Services, phone: 604-707-5678 or tbnurseconsultants@bccdc.ca. For Island Health, call 250.519.1510.



4.0 Sponsors

Original version (2015) developed for HD and PD by:

 A working group of representative groups of renal clinicians and directors/managers, BC laboratories, BCCDC TB Services, Island TB Clinic and BC Renal (BCR)

Original version (2015) approved for HD and PD by:

- BCR Peritoneal Dialysis Committee
- BCR Medical Advisory Committee
- Provincial Committee for Implementation of TB Screening for Dialysis Patients (BCR/BCCDC, BC Public Health Microbiology and Reference Lab)

Update in 2019 for HD and PD and reviewed by:

- Representatives from Zoonotic Diseases & Emerging Pathogens Laboratory, BCCDC Public Health Laboratory (Team Lead & Technical Coordinator)
- BCPRA Hemodialysis Committee (Sept 11, 2019 discussed but not reviewed)

In 2022, the 2019 version was adapted and updated to incorporate Kidney Care Clinic (KCC) patients referred for transplant. The 2022 update was completed in collaboration with representatives from the BCCDC, the PROMIS Team and the BCR Kidney Care, PD and HD Committees.

In 2024, the 2022 version was updated following a review of various details of testing with BCCDC. The changes were summarized in a memo sent out in January 2024.

5.0 Appendices

Appendix 1: BC TB Screening Workflow for Renal Patients

Appendix 2: TB Screening Questionnaire (printed from PROMIS)

Appendix 3: IGRA Lab Requisition (printed from PROMIS)

Appendix 4: Chest X-Ray Requisition (printed from PROMIS)

Appendix 5: Distribution of Reports/Letters & Follow-up of Results

Appendix 6: Samples of Follow-up Reports/Letters

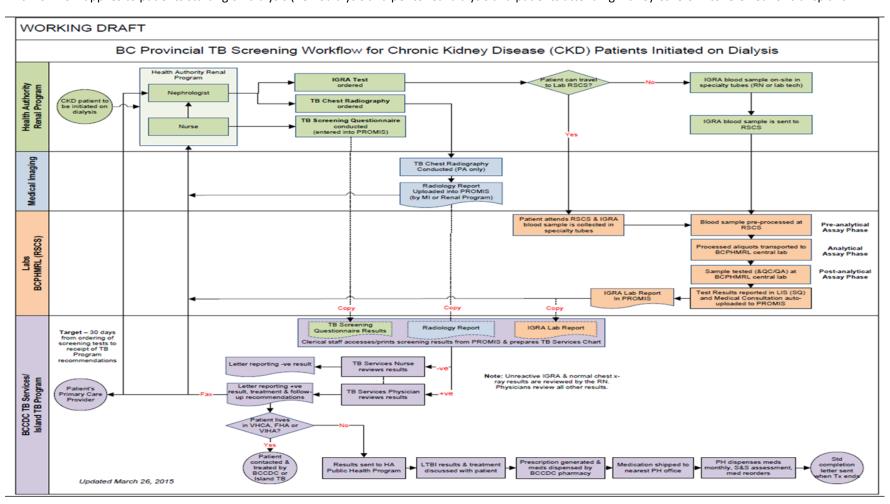
- Letter 1: Non-reactive IGRA
- Letter 2: Reactive IGRA (Latent TB Infection)

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Appendix 1: BC TB Screening Workflow for Renal Patients

This workflow applies to patients starting on dialysis (hemodialysis and peritoneal dialysis and patients attending Kidney Care Clinics referred for transplant.





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Appendix 2: TB Screening Questionnaire in PROMIS

- 1. Please complete fields highlighted in yellow (unless already pre-populated with correct information).
- 2. Reason for screening: Provincial Renal TB Screening.

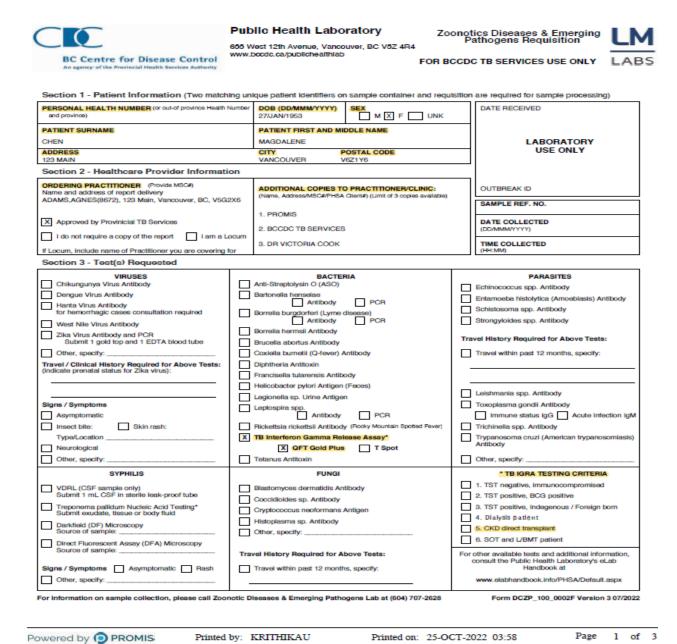
											IING FOR
BC Centre for Diseas	e Control Pr	ovinci	al Tubero	ulo	sis Serv	vices	Pro	vincial Forn	n adapted f	or Renal i	Patients, Sept 2
	INSTRUCTIONS:				BILL CLIENT TB SERVICE	BILL BUSE ONLY	. MSP	X BILL	TO TB SERVI	CES MSP	BILLING # 99996
TODAY'S DATE (YYYY/MM/DD) 18-OCT-2022	PERSONAL HE 9868151283	ALTH NUMB	ER (PHN)		ID NUMBER	4					
PART 1: CLIENT COMPLETES (USO LAST NAME BELL	ink and print clearly)		GIVEN NAME(S))				MAI	DEN NAME (IF	APPLICABL	E)
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DATE OF BIRTH(DOWNWAY) 05 MAR 1961	GENDER M X F	ETHNIC O	RIGIN		STATUS NON-ST		INL	IRST NATIONS JIT TIS	ONR	FIONS COM	OFF RESE
COUNTRY OR CANADIAN PROVING BRITISH COLUMBIA	CE OF BIRTH	l	DATE ENTERED	CANA		PRIMARY PHON (778)000-0000		ER	ALTERNA	TE PHONE I	NUMBER
NAME OF REFERRING PHYSICIAN	(SYHEALTH CARE P	ROVIDER(HO	CP) & SPECIALTY			l			PHONE N	UMBER OF	REFERRING HCP
NAME OF FAMILY GP SAUNDERS, MARYAM									PHONE NI (111)333	JMBER OF 1	FAMILY GP
PART 2: HEALTH CARE PROVIDER REASON FOR SCREENING (REFE	COMPLETES R TO CODES)			N	EDICATION A	LLERGIES X	NONE				NE ADMINISTRATIO
Renal TB Screening					YES			REACTION	YES	DATE	ульмоо
IF CONTACT, NAME OF TB CASE				-	AST DATE OF	CONTACTorrows	X	YES N	SURE? IF YES O	, LIST DETA	ILS (NAME, DATE I
RISK FACTORS NONE X HIV TRANSPLANT (SPE				HRONIC		ASE/DIALYSIS					X DIABETE
TRAVEL TO HIGH PREVALEN IMMUNE SUPPRESSING MED						SUBSTANCE USE	Ε		OTHER		
SYMPTOMS NONE X COUGH X PR				IT SWE	ATS FEV	ER WEIGH	TLOSS		SPUTUME		X NO
X BLOOD IN SPUTUM LY					OTHER						COLLECTED
NONE X HEP B X HE			X NO U		N .	S, DATE(*****AMIDD)		[NO	UNCERTAIN
HAS CLIENT EVER HAD TB? YES ACTIVE YES LATENT	V NO VEO I	DATE	X NO	NE	GATIVE	POSITIVE UN	NWOWN	DATE	(00)	LOCATIO	N
PROVIDER NAME)	MED CONSENT CIRTIAL, HEALTH CRIVING AND	PRINT	DID NOT DATE GIVENIV 18 OCT 2022	TEST_	DAT	E READ(************************************	9	BIZE OF INDU	te	EAD BY	
test LOT#									MM	negative	positive
FOLLOW-UP RECOMMENDATIONS X NO FURTHER TESTING F	EPEAT TST IN	WEEKS	SPUTUM FO	R AFB	IGRA D	CXR, TYPE	X PA X	LATERAL	X DECLINE	ED	
REPEAT TST INFORM OVEN BY (ENTER CODE OF HAVESTABRANCH, H NAME)	MED CONSENT DIPITAL, HEALTH CENTRE AND	PRINT PROVIDE	DOTT GOVERN	TEST_	DAT	E READ(mmassico)	a	SIZE OF INDU	RATION R	EAD BY	
test LOT #	_		18 OCT 2022		180	CT 2022		45		negative	positive
FOLLOW-UP RECOMMENDATIONS X NO FURTHER TESTING		X CXR, T	YPE X PA	X	LATERAL X	DECLINED					
HISTORY OF IGRA TEST?	NO	RESULT O	HREACTIVE	REAC	TIVE	DATE(YYYMMOO) 18 OCT 2022		L	OCATION		
X QFT T-SPOT ADDITIONAL COMMENTS:		UNK	NOWN								
PART 3: TB SERVICES COMPLETE test											
LOCATION OF CXR test			©R 18 OCT 2022	CXR	ON X CA	RE CONNECT ()	X E-FILM	MSECU	RE DRIVE	WCMI	OR REPORT O
NO EVIDENCE OF ACTIVE TB		ONS				CLINIC APPOINT	MENT				
X SEE REPORT			REPEAT TO	вт		X LTBI OFFER				DATE	& SIGNATURE
☐ TB LETTER (SPECIFY)			IGRA			OTHER (SPE	ECIFY)			24 OCT	2022
The information collected on this form information is protected from unauthor	is used by the BC Cen ized use and disclosur	tre for Diseas e is in accord	e Control to deliver ance with the Freed	Provinction of In	ial TB Services formation and i	. It is collected und Protection of Priva	ier the auth roy Act and	hority of British of may be disclos	Columbia; s Pu ed only as pro	ublic Health / vided by that	Act. Personal Act.
Daniel III A DDO	AIC D		45003			Driver	21	1 OCT 20	22 17.55		200 1 0



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Appendix 3: IGRA Lab Requisition in PROMIS

- 1. Please complete fields highlighted in yellow (unless already pre-populated with correct information).
- 2. TB IGRA Testing Criteria: CKD direct transplant





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Appendix 4: Chest X-Ray Requisition in PROMIS

Please complete fields highlighted in yellow (unless already pre-populated with correct information).

Provincial Health Services Authority Previous wife calcium. Deter health. MSP billing number: 99996 Chest X-Ray Requisition Date 02-NOV-2022 **Patient Information** Ordering Physician: Name: CHEN, MAGDALENE DOB: 27-JAN-1953 ADAMS, AGNES - 8672 PHN: 9870983905 __ Phone: _250-585-8596 Vancouver Hospital And H.S.C. Hemodialysis Unit Address: 123 MAIN, VANCOUVER, BC, V6Z1Y6 BCCDC TB Services, Dr Victoria Cook Chest X-Ray Exam Reason Exam Requested: Chest Lateral Posterior anterior (PA) Other, Specify: _ Exam Reason: □ TB Contact Rule Out Active TB Symptoms □ Repeat CXR □ On Treatment End of Treatment Surveillance Active □ Active
□ Latent Immigration Latent Other, Specify: __ Respiratory Precautions Required: □ YES □ NO For Radiology Use Only BC CENTRE FOR DISEASE CONTROL TUBERCULOSIS SERVICES 655 West 12th Avenue Vancouver, BC V5Z 4R4 IF PHN NOT VALID Bill Client Invoice TB Services

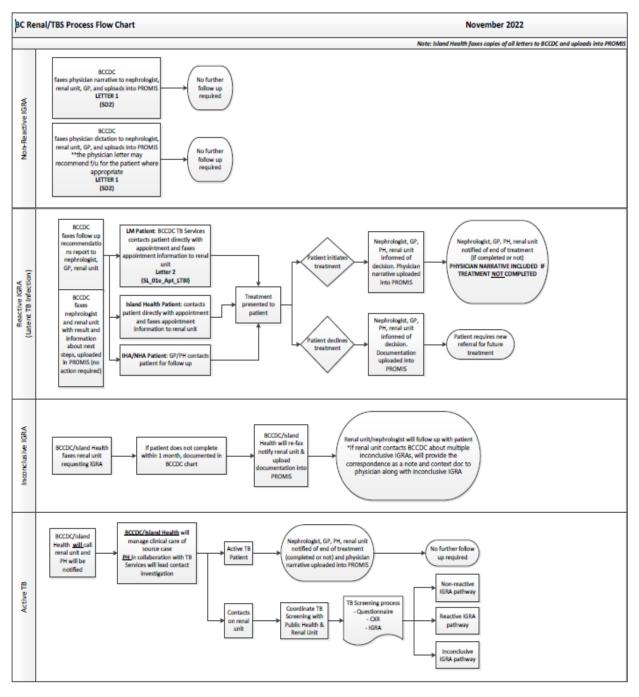


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Appendix 5: Distribution of Reports/Letters & Follow-Up of Results



incidental findings: When the ordering provider is from TBS and the chest x-ray has abnormal findings non-related to TB. The physician narrative is completed and a copy of the chest x-ray report will be forwarded to the GP for clinical follow up and nephrologist for clinical context.



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Appendix 6: Samples of Follow-Up Reports/Letters

Letter 1: Non-Reactive IGRA Results



TB Screening for this patient was completed.

From the information provided, there is no evidence of TB exposure, infection or disease.

This patient is cleared for TB screening purposes. If the TB Screening Form was initiated prior to immune-suppressing treatments or transplant, these treatments may proceed without delay. Please note that IGRA screening is not required if changing to a new biological product, if changing dose or if adding supplementary agents.

Further testing or treatment for TB infection is not recommended at this time.

Reassessment would be in accordance with disease specific protocols, if symptoms develop or at the discretion of a physician.

Letter 1 (SD2)



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Letter 2: Reactive IGRA Results (Latent TB Infection)

This letter applies to Lower Mainland patients only.

