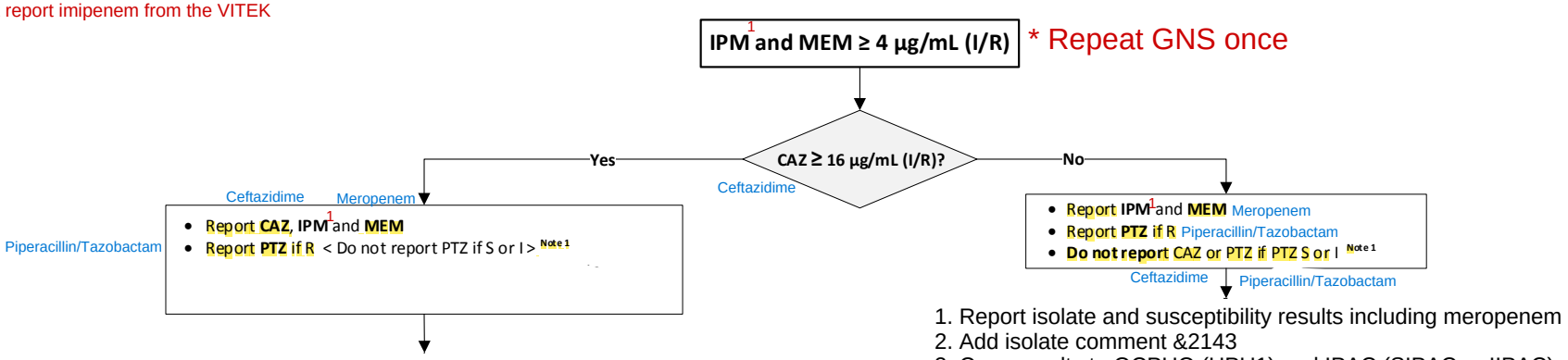
Pseudomonas Aeruginosa Carbapenem Resistance Detection Chart (LTR82081)

ALBERTA PRECISION LABORATORIES

Edit Approved By: Lee, Mao-Cheng (10/18/2023) **Revision: 6.00**

[1] Don't report imipenem from the VITEK



1. Report isolate and susceptibility results including meropenem
2. Add isolate comment &2143
3. Copy results to OCPHO (HPU1) and IPAC (SIPAC or IIPAC)
4. Complete DL requisition and request full susceptibility test
5. Send copy of VITEK results with requisition
6. Refer isolate to APL
7. Store isolate

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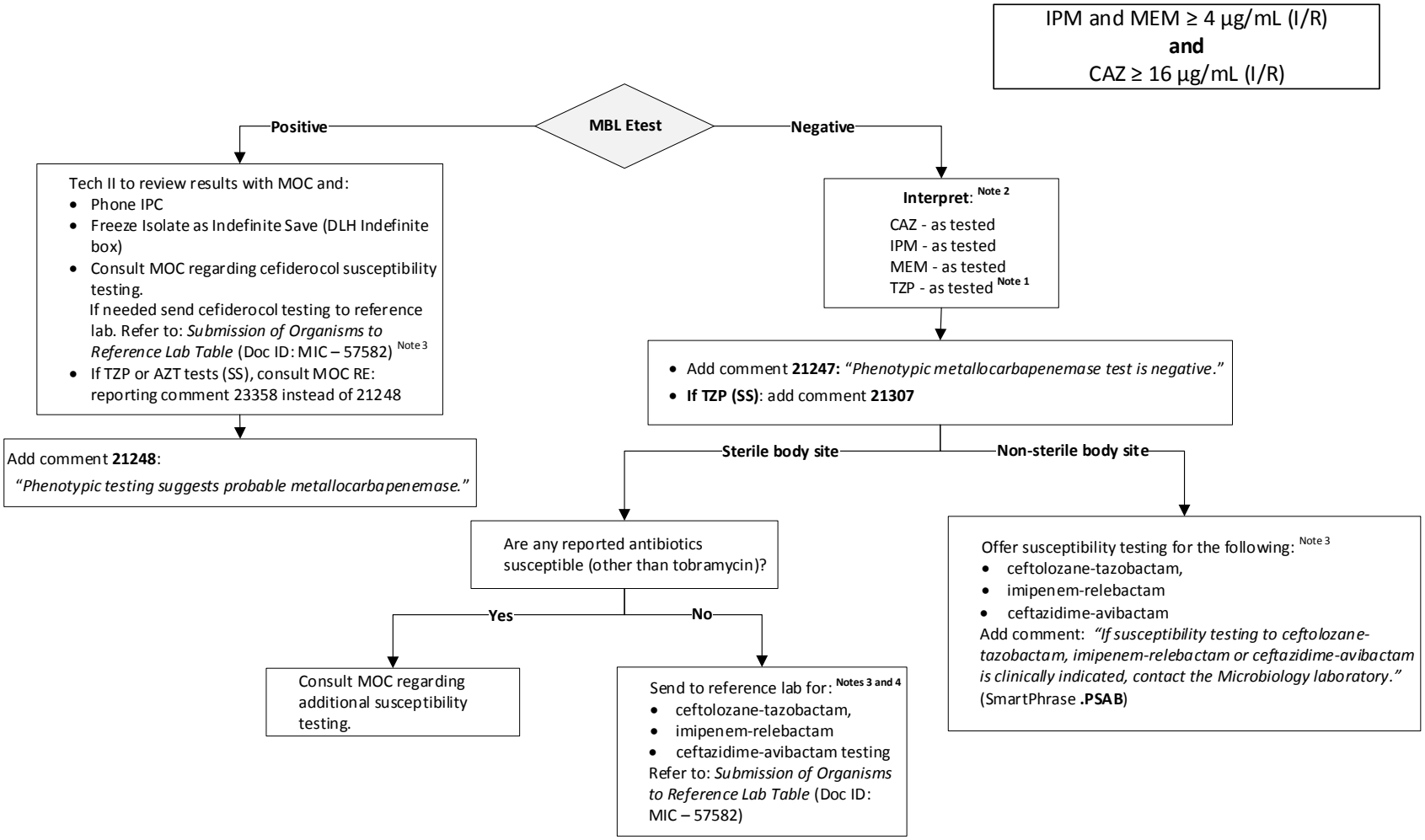
Note 1: VITEK 2 piperacillin/tazobactam INTERMEDIATE results are not recommended due to a card limitation.

Abbreviations:
CAZ – Ceftazidime, **IPM** – Imipenem, **MEM** – Meropenem, **PTZ, TZP** – Piperacillin/tazobactam, **AZT** – Aztreonam, **MBL** – Metallo-βeta-lactamase, **IPC** – Infection Prevention and Control



Note 1: VITEK 2 piperacillin/tazobactam INTERMEDIATE results are not recommended due to a card limitation.

Note 2: Consult Tech II if discrepancy between disc diffusion and Vitek 2 results.

Note 3: Consult MOC if previous isolate sent to reference lab for additional susceptibility testing within 6 months. Any antibiotics that previously tested as resistant do not require retesting unless requested by physician.

Note 4: If isolated from CSF consult MOC prior to sending for additional susceptibility testing.

Comments:

21307: Susceptible beta-lactam agents should be used with caution.

23358: Phenotypic testing suggests probable metallocarbapenemase. If using a susceptible beta-lactam or monobactam, it is advised to use combination therapy and seek expert consultation.

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Pseudomonas aeruginosa supplemental antibiotic information **for MOC reference only**

	CSF/ Brain	Sterile Body Site	Urine	Resp/ Other	Comments
Ceftazidime-avibactam	*	✓	✓	✓	* Consult with MOC. Ceftazidime/avibactam for CNS infections is an off-label use. Medical literature shows that CAZ-AVI achieved an adequate CSF concentration throughout the drug interval.
Ceftolozane-tazobactam	*	✓	✓	✓	* Consult with MOC. The current maximal dose of Ceftolozane-tazobactam (3.0 g every 8 h) does not provide adequate CSF exposure for treatment of Gram-negative meningitis or ventriculitis unless the MIC for the causative pathogen is very low (≤0.25 mg/liter). Anecdotally, this agent has been used with success to treat MDR Pseudomonas aeruginosa meningitis.
Imipenem-relebactam	*	✓	✓	✓	Efficacy and safety of imipenem-cilastatin-relebactam were comparable with those of imipenem-cilastatin. The main role of this agent is for treatment of KPC-producing Enterobacteriaceae and imipenem-nonsusceptible Ps. aeruginosa, but clinical data on these remain limited. * Consult with MOC. CSF penetration of this agent is similar to that with Imipenem-cilastatin alone.
Cefiderocol	*	✓	✓	✓	* Consult with MOC. CSF penetration of this agent is excellent, with the medical literature reporting high CSF bioavailability (up to 24.4 mg/L 48h following administration, and CSF/plasma ratio ~ 70%). Cefiderocol, when given as 2 g q8h and 2 g q6h, attained CSF concentrations that exceeded ≤4 mg/L for 100% of the dosing interval.