Myeloproliferative Neoplasm:
A Diagnostic Approach to Bone Marrow Evaluation

Clinical suspicion of myeloproliferative neoplasm

Bone marrow testing begins with
- HPWET / Hematopathology Consultation, MML Embed
- HPCUT / Hematopathology Consultation, Client Embed
- CHRBM / Chromosome Analysis, Hematologic Disorders, Bone Marrow
- BCRFX / BCR/ABL1 Qualitative Diagnostic Assay with Reflex to BCR/ABL1
- p190 Quantitative Assay or BCR/ABL1 p210 Quantitative Assay
- OR 922F / BCR/ABL1 Translocation (9:22), FISH
- Complete blood count (CBC)
- Clinical findings
- Bone marrow features
- EPO / Erythropoietin (EPO), Serum

Positive for BCR/ABL
- Chronic myeloid leukemia**

Negative for BCR/ABL
- Chronic Myeloid Leukemia Algorithm

Bone marrow morphology: myeloproliferative neoplasm (MPN)?

Overall findings NOT supportive of polycythemia vera (PV)
- MPNR / Myeloproliferative Neoplasm (MPN), JAK2 V617F with Reflex to CALR and MPL

Overall findings NOsupportive of PV
- Erythrocytosis?
  - REVE / Erythrocytosis Evaluation
  - MPJAK / Polycythemia vera, JAK2 V617F with Reflex to JAK2 Exon 12-15, Sequencing for Erythrocytosis

Overall findings SUSPICIOUS for PV
- Morphology consistent with MPN
- Morphology equivocal for MPN

Overall findings NOT supportive of polycythemia vera (PV)
- MPNR / Myeloproliferative Neoplasm (MPN), JAK2 V617F with Reflex to CALR and MPL

PositivE or NEGATIVE
- Essential thrombocythemia (ET)**
- Primary myelofibrosis (PMF)**
- Myeloproliferative neoplasm-unclassified (MPN-U)**
- PMF
- MPN-U

POSITIVE
- PV**

NEGATIVE
- Morphology consistent with MPN
- Morphology equivocal for MPN

NEGATIVE
- If clinically indicated
- NGSHM / OncoHeme Next-Generation Sequencing (NGS), Hematologic Neoplasms**

* A minor criterion for polycythemia vera (PV)
** In the appropriate clinicopathologic setting