

1.2

Transforming Clinical Care in Polycystic Kidney Disease

2.1

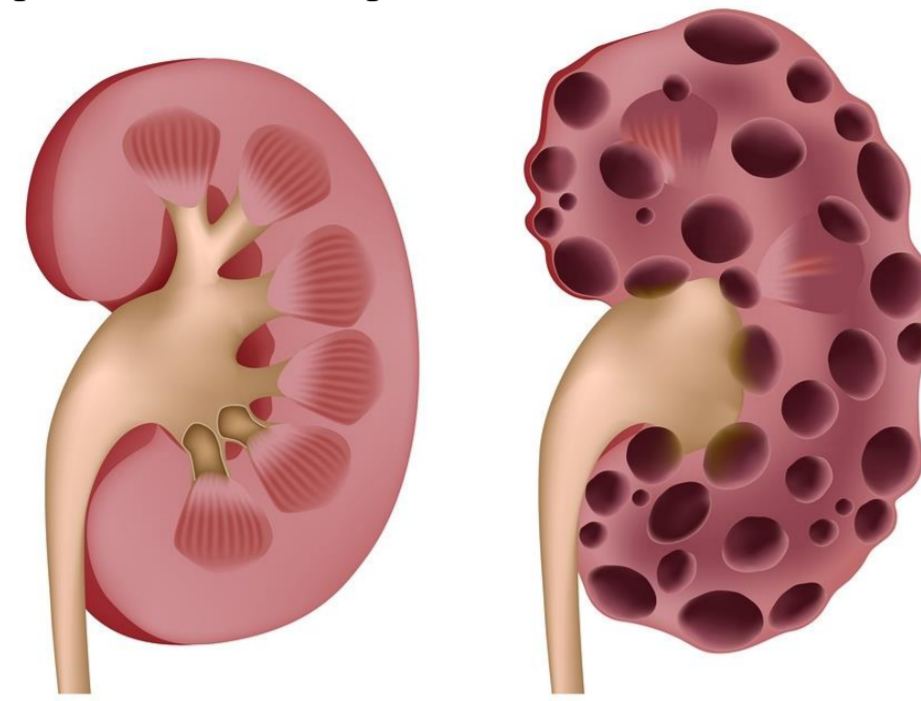
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Patient Partners: David Hillier, Robert Buzinski, Lucy Delgado

Background

Autosomal Dominant Polycystic Kidney Disease (ADPKD)

- Most common hereditary kidney disease
- 4th leading cause of kidney failure
- Mutation of *PKD1* or *PKD2* gene
- Uncontrolled growth of fluid-filled cysts causes irreversible damage
- The only currently approved drug, Tolvaptan, is expensive and is associated with significant risk and potential side effects



Study Aims

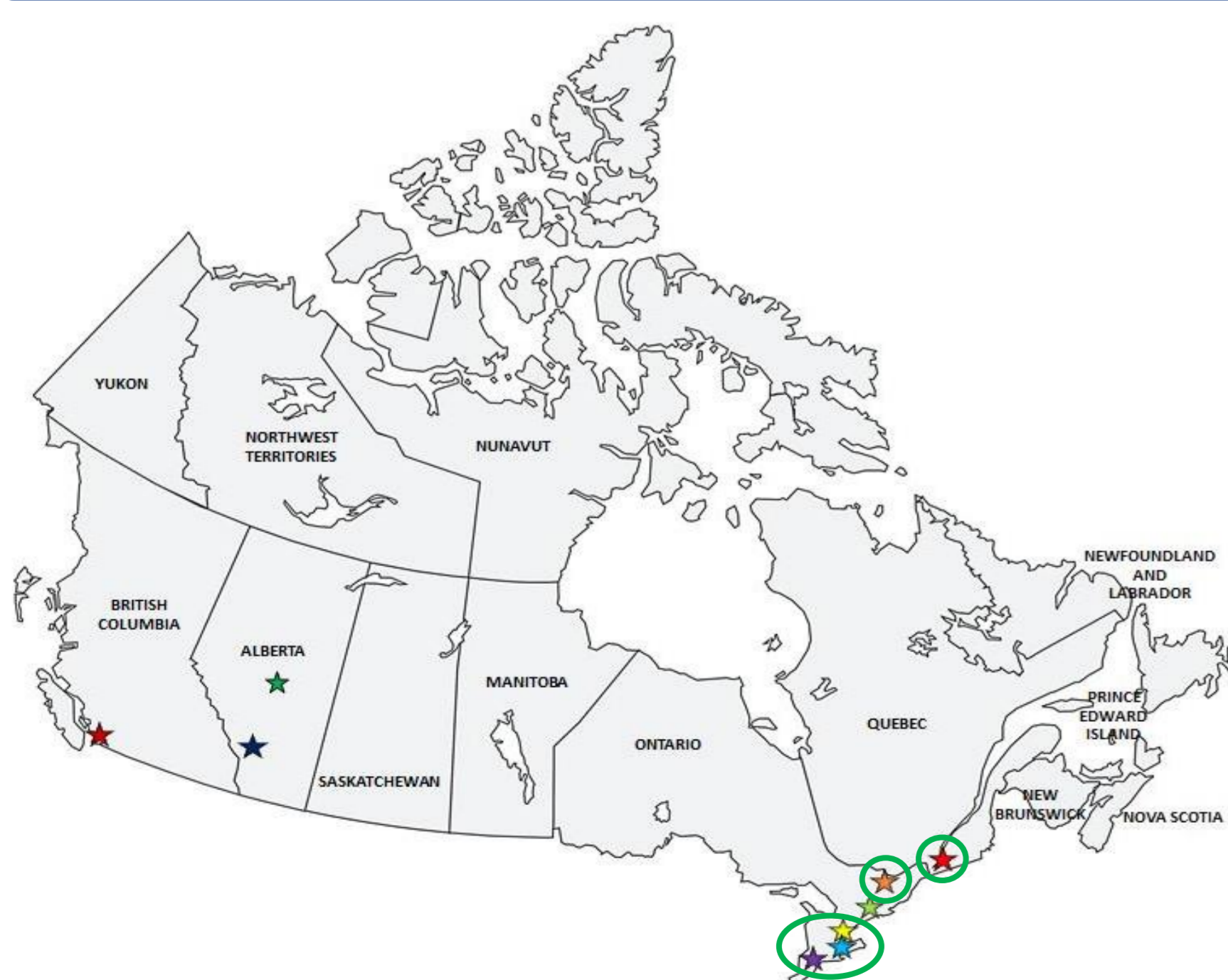
- Create a national clinical trial network
- Test 400 patients using genetic and kidney volume based risk assessment tools, while evaluating the use of:
 - Next generation sequencing for genetic testing
 - 3D-ultrasound (US) for kidney volume measurement
- Pilot clinical trial on a promising repurposed drug (Salsalate) using the high risk patient cohort identified in Project 1.2

Methods

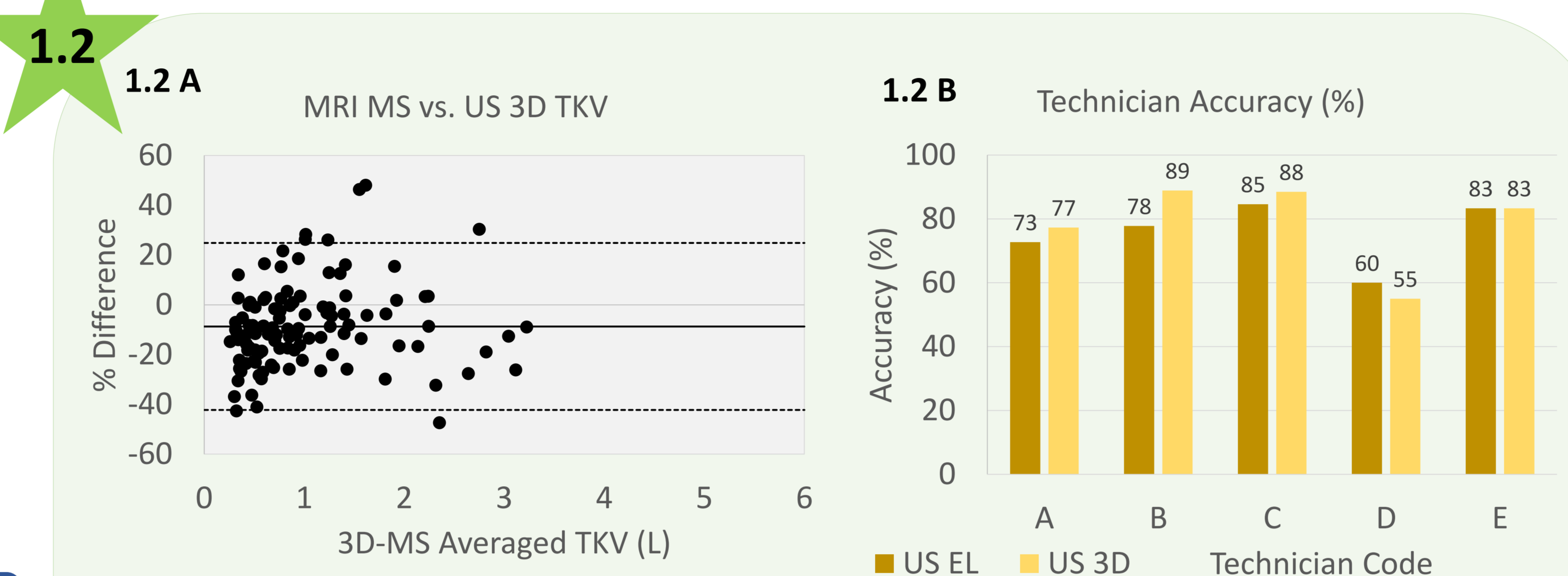


PKD Study Centres

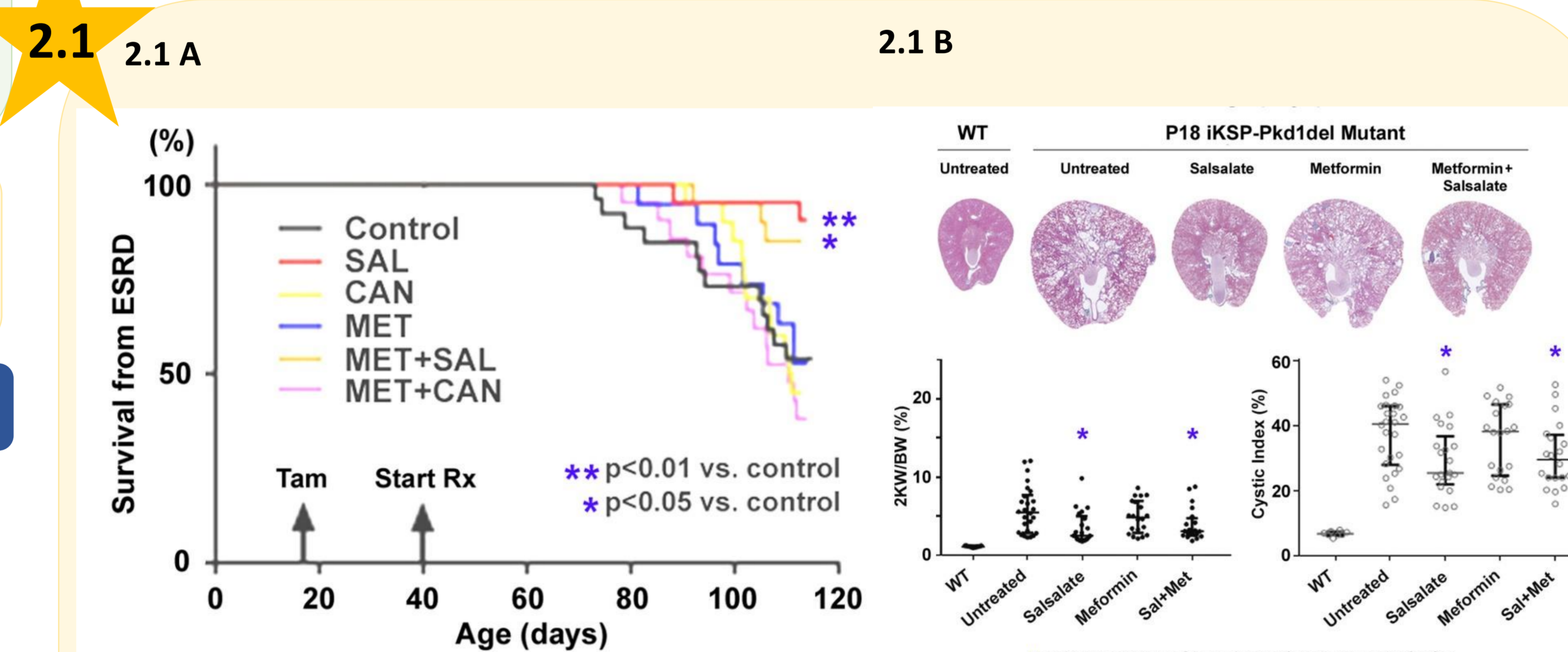
- ★ University Health Network – Toronto, ON
 - ★ St. Joseph's Healthcare Hamilton – Hamilton, ON
 - ★ London Health Sciences Centre – London, ON
 - ★ Kingston General Hospital – Kingston, ON
 - ★ The Ottawa Hospital – Ottawa, ON
 - ★ Royal Victoria Hospital – Montreal, QC
 - ★ Centre de Recherches – Montreal, QC
 - ★ University of Alberta – Edmonton, AB
 - ★ Foothills Hospital – Calgary, AB
 - ★ St. Paul's Hospital – Vancouver, BC
- *Active sites circled in green



Results

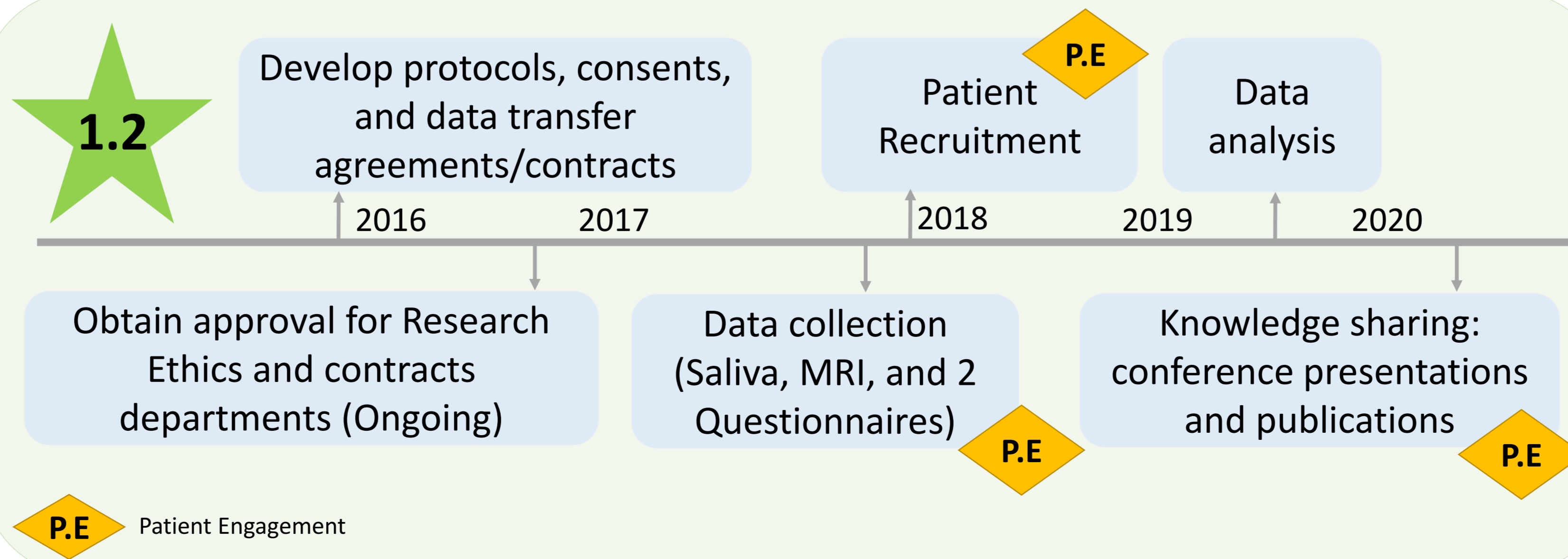


- 1.2A 3D-US has a higher error rate when compared to the gold standard of MRI, and measures an accuracy of 79% (based on Mayo Clinic Imaging Classification [MCIC])
- 1.2B Kidney volume measurement via US is dependent on technician bias

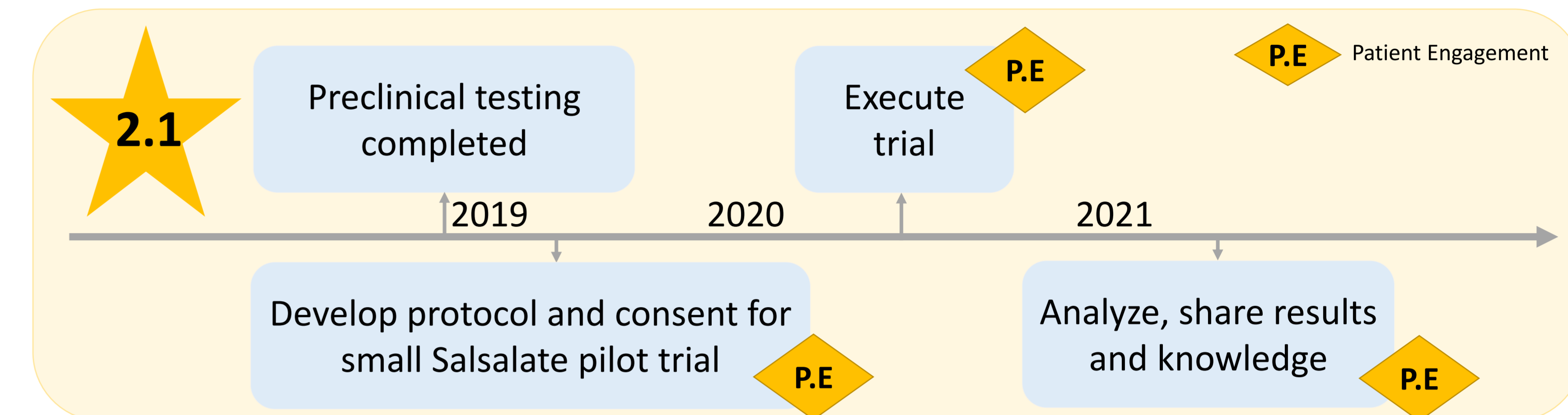


2.1A&B Preclinical animal studies identify Salsalate as a promising repurposed drug for the treatment of ADPKD

Project Timeline



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Accomplishments to Date

- 120 patients studied for 3D Ultrasound project, which is nearing completion
- ~ 100 patients enrolled for clinical trial network
- Web-based ADPKD questionnaires
- Preclinical animal studies supporting use of Salsalate in Project 2.1; manuscript submitted for publication
- Research Ethics Board (REB) approval for Salsalate clinical pharmacokinetic study in patients

Next Steps

- Complete patient risk assessments from all study sites
- Analyze imaging to validate the use of 3D-US in ADPKD risk assessment
- Pilot study to examine the pharmacokinetics, safety, and tolerability of Salsalate in patients
- Potential use of Salsalate to reduce urine output in Tolvaptan-treated patients

Future Opportunities for Patient Engagement

- Quarterly teleconference calls
- Feedback on trial design and consent for 2.1
- Contributors to future manuscripts and presentations
- Knowledge sharing



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