How do the M4 and M6 models perform in an Australian PUL population?

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Pregnancy of unknown location
- PUL = elevated serum BHCG + no evidence of a pregnancy on TV US
- Majority can be safely managed expectantly
- 6-20% have a final diagnosis of ectopic
- Mathematical models may help triage, including M4[1], M6 and M6 (P) [2]

Aim: validate the use of M4 and M6 to triage PULs in an Australian population

Figure 1. Study Population

![Study Population Diagram]

All EPAS US
n=10268

All PUL cases
n=848

Study population
n=360

Exclusions:
- No serial BHCG or Prog n= 467
- Initial serum BHCG <19 n= 12
- Lost to follow up n= 9

Figure 2. Outcomes of PUL pregnancies

- Ectopic
- Persisting PUL
- Failed PUL
- IUP

69%
62%
22%
7%
2%

Figure 3. Outcomes of ‘High Risk’ (M6P) PUL pregnancies

- Ectopic
- Persisting PUL
- Failed PUL
- IUP

55%
26%
16%
3%

Figure 4. Sensitivity and Specificity of M4 and M6

<table>
<thead>
<tr>
<th>Model</th>
<th>Sens</th>
<th>Spec</th>
<th>PPV</th>
<th>NPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4</td>
<td>72</td>
<td>72</td>
<td>20</td>
<td>96</td>
</tr>
<tr>
<td>M6</td>
<td>78</td>
<td>56</td>
<td>15</td>
<td>96</td>
</tr>
<tr>
<td>M6 (P)</td>
<td>91</td>
<td>63</td>
<td>19</td>
<td>99</td>
</tr>
</tbody>
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Original published data:
- M4 (n=376): Sens 80, Spec 88.6, PPV 40, NPV 97.9
- M6 (n=2753): Sens 92, Spec 98.6

Figure 5. M6 (P) ROC curve

AUC 0.863

Conclusions:
- M6(P) has the highest sensitivity
- Sensitivity/specificity lower in our population
- Further validation is needed