<table>
<thead>
<tr>
<th></th>
<th>Patient: Albert</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surgeon:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Patient:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Reduction error:</strong></td>
<td></td>
</tr>
<tr>
<td>external rotation:</td>
<td>0°</td>
</tr>
<tr>
<td>flexion:</td>
<td>0°</td>
</tr>
<tr>
<td>abduction:</td>
<td>-3.4°</td>
</tr>
<tr>
<td>impaction:</td>
<td>0mm</td>
</tr>
<tr>
<td><strong>Screw error:</strong></td>
<td></td>
</tr>
<tr>
<td>posteriorly</td>
<td>-1mm</td>
</tr>
<tr>
<td>inferiorly</td>
<td>13mm</td>
</tr>
<tr>
<td>short</td>
<td>2mm</td>
</tr>
<tr>
<td>absolute distance</td>
<td>13mm</td>
</tr>
<tr>
<td><strong>Intercept with midpoint of femoral head</strong></td>
<td></td>
</tr>
<tr>
<td>superiorly</td>
<td>10.4mm</td>
</tr>
<tr>
<td>anteriorly</td>
<td>-0.4mm</td>
</tr>
<tr>
<td><strong>Plate position is 1mm proud</strong></td>
<td>95%</td>
</tr>
<tr>
<td><strong>Skin incision is 148mm long and was changed 1 times</strong></td>
<td>79%</td>
</tr>
<tr>
<td><strong>There were 1 misplaced drillholes with a total depth of 33mm</strong></td>
<td>91%</td>
</tr>
<tr>
<td><strong>7 x-rays were taken and the II was shifted 3 times</strong></td>
<td>98%</td>
</tr>
<tr>
<td><strong>Reduction time was</strong></td>
<td>0:27mins</td>
</tr>
<tr>
<td><strong>Surgical time was</strong></td>
<td>4:22mins</td>
</tr>
<tr>
<td><strong>II shifting time was</strong></td>
<td>1:30mins</td>
</tr>
<tr>
<td><strong>Reduction Score</strong></td>
<td>87%</td>
</tr>
<tr>
<td><strong>Screw Score</strong></td>
<td>66%</td>
</tr>
<tr>
<td><strong>Time Score</strong></td>
<td>95%</td>
</tr>
<tr>
<td><strong>Rest Score</strong></td>
<td>90%</td>
</tr>
<tr>
<td><strong>Traction Misadjustments</strong></td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL SCORE</strong></td>
<td>75%</td>
</tr>
</tbody>
</table>
Senior Registrars are better than Medical Students
Senior Registrars are better than Medical Students

- Methods
  - 3 groups: Med Students, Junior and Senior Registrars
  - Anonymous surgery
  - 6 Patients: Albert, Bob, Charles, Daniel, Earnest, Fredrick
Senior Registrars are better than Medical Students

- Methods
  - 3 groups  Med Students, Junior and Senior Registrars
  - Anonymous surgery
  - 6 Patients
    - Albert, Bob, Charles, Daniel, Earnest, Fredrick
Senior Registrars are better than Medical Students

- **Methods**
  - 3 groups: Med Students, Junior and Senior Registrars
  - Anonymous surgery
  - 6 Patients
    - Albert, Bob, Charles, Daniel, Earnest, Fredrick
Senior Registrars are better than Medical Students

- Methods
  - 3 groups: Med Students, Junior and Senior Registrars
  - Anonymous surgery
  - 6 Patients: Albert, Bob, Charles, Daniel, Earnest, Fredrick
Senior Registrars are better than Medical Students

- Methods
  - 3 groups: Med Students, Junior and Senior Registrars
  - Anonymous surgery
  - 6 Patients
    - Albert, Bob, Charles, Daniel, Earnest, Fredrick
Senior Registrars are better than Medical Students

- **Methods**
  - 3 groups: Med Students, Junior and Senior Registrars
  - Anonymous surgery
  - 6 Patients
    - Albert, Bob, Charles, Daniel, Earnest, Fredrick
Senior Registrars are better than Medical Students

- Methods
  - 3 groups: Med Students, Junior and Senior Registrars
  - Anonymous surgery
  - 6 Patients: Albert, Bob, Charles, Daniel, Earnest, Fredrick
Are tired surgeons better than drunk surgeons?
Are tired surgeons better than drunk surgeons?

Moderate sleep deprivation produces impairments in cognitive and motor performance equivalent to legally prescribed levels of alcohol intoxication

A M Williamson, Anne-Marie Feyer

"Performance after 18 hours of wakefulness is similar to that found at the legal limit for safe driving"
Conclusion

- What surgeons think is important
- May I see your scorecard
- Senior Registrars are better than Medical Students
- Are tired surgeons better than drunk surgeons?
Supervisors

- Sue Stott (Orthopaedics)
- Iain Anderson (Bioengineering)
- Peter Hunter (Bioengineering)

Thanks

Virtual Patients and Real Surgeons
Simulators

http://homepage.ntworld.com/bleep/SimHist1.html
Virtual Trauma

How many of your virtual patients can walk?

Phil Blyth
Dept of Anatomy with Radiology
Bowen Joffin. From Outer Space to Inner Space. Adelaide, 28/05/03.
Haptics – Force Feedback

http://www.reachin.se/

What surgeons think is important
What surgeons think is important

- 2 page Postal Survey
- 212 Orthopaedic Surgeons and Trainees
- Response rate 70%
  - 128 surgeons
  - 24 trainees
Time Frame

Simulation will impact on my **practice** in next 5 years?

Agree Strongly

Disagree Strongly

<table>
<thead>
<tr>
<th></th>
<th>Young FRACS &gt;1990</th>
<th>Old</th>
</tr>
</thead>
<tbody>
<tr>
<td>120%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Time Frame

Simulation can be used for **accreditation** in next 10 years?

Agree Strongly

Disagree Strongly
May I see your Scorecard?
May I see your Scorecard?

- **Ribno Meni**
  - Ohridski Krap
  - Jagula (50 rezervacija)
  - Belvica
    - 1400 1 kg

- **Salati**
  - Greka
  - Jopska
  - Makedonska
  - Mesana
  - Tatarsur
  - Piroški
  - 100
  - 100
  - 80
  - 70
  - 100
  - 150