Workforce and Training: The Trainee Perspective

Nick Gray
Advanced Training in Nephrology

Adult ATs, by state

- QLD: 32
- NSW: 33
- ACT: 3
- VIC: 3
- TAS: 26
- SA: 3
- WA: 3
- NT: 2
- Other: 3

Adult ATs, by curriculum year

- 2014: 32
- 2013: 33
- 2012: 3
- 2011: 3
- 2010: 2
- 2009: 2
## Accredited Training Positions

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Acute transplant</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSW</td>
<td>27.75 (1)</td>
<td>17</td>
</tr>
<tr>
<td>ACT</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Vic</td>
<td>23.25 (2)</td>
<td>16</td>
</tr>
<tr>
<td>Qld</td>
<td>15.5 (1)</td>
<td>6</td>
</tr>
<tr>
<td>SA</td>
<td>8 (1)</td>
<td>5</td>
</tr>
<tr>
<td>WA</td>
<td>6 (1)</td>
<td>5</td>
</tr>
<tr>
<td>Tas</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>NT</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>89.5 (6)</td>
<td>49</td>
</tr>
</tbody>
</table>

April 2014
Changes to training over time

Increase in nephrology advanced trainee numbers in Australia and associated reduction in clinical exposure over the past decade

L. Amos,¹ N. D. Toussaint,²,³,⁶ R. K. Phoon,⁵,⁶ T. J. Elias,⁶,⁷ V. Levidiotis,³,⁶ S. B. Campbell,⁶,⁸ A. M. Walker⁴,⁶ and C. Harrex⁶

¹Department of Nephrology, Monash Medical Centre, ²Department of Nephrology, The Royal Melbourne Hospital, ³Department of Nephrology, Western Health, ⁴Department of Nephrology, The Royal Children’s Hospital, Melbourne, Victoria, ⁵Department of Nephrology, Westmead Hospital, ⁶Specialist Advisory Committee in Nephrology, Royal Australasian College of Physicians, Sydney, New South Wales, ⁷Department of Nephrology, Central and North Adelaide Renal and Transplantation Service, Adelaide, South Australia and ⁸Department of Nephrology, Princess Alexandra Hospital, Brisbane, Queensland, Australia

Amos et al. Internal Medicine Journal  March 2013
Trainees vs Patients 2000-2009

Slide courtesy of Phil Clayton
Trainee survey 2014

n=48, 48% female
Training time

3 core years is positive

3 core years mandatory
Acute transplant

Acute Tx should be mandatory

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree
Rural exposure

Rural training would be of benefit

Rural training should be mandatory
Procedures

Procedures includes biopsy, tunnelled and non-tunnelled lines, +/- PD catheters
Moving around

Interstate/overseas training of benefit

Interstate/overseas training - mandatory
Training programme

Prefer a 3 year state based training programme

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree
Higher degree

Planning a higher degree

Yes: 25
No: 15

Reason for higher degree

Career in research: 10
Job prospects: 5
No other local work: 2
Other: 1
The Time Nephrologists Dedicate To Various Duties

- Clinical Nephrology: 48.7%
- Research: 13.7%
- Other Clinical Specialty Work: 10%
- Administration: 8.4%
- Teaching: 8.3%
- Continuing Medical Education: 5.7%
- Other Professional Duties: 2.5%
- Medicolegal Duties: 0.2%
- Other Duties: 2.6%
Procedures Personally Performed by Nephrologist

<table>
<thead>
<tr>
<th>Procedures</th>
<th>Nephrologists (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vascular access</td>
<td>yes: 90%</td>
</tr>
<tr>
<td></td>
<td>no: 10%</td>
</tr>
<tr>
<td>Renal biopsy</td>
<td>yes: 60%</td>
</tr>
<tr>
<td></td>
<td>no: 40%</td>
</tr>
</tbody>
</table>

Lane C, and Brown M CJASN 2011;6:2681-2687
Table 5.

Identified qualities of a “good” nephrologist (more than one response permitted)

<table>
<thead>
<tr>
<th>Most Frequently Referenced Qualities</th>
<th>Number of References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal or humanistic attributes</td>
<td>65</td>
</tr>
<tr>
<td>intelligence</td>
<td>14</td>
</tr>
<tr>
<td>compassion</td>
<td>14</td>
</tr>
<tr>
<td>enthusiasm for job</td>
<td>14</td>
</tr>
<tr>
<td>work-life balance</td>
<td>13</td>
</tr>
<tr>
<td>Approach taken to patient care</td>
<td>67</td>
</tr>
<tr>
<td>holistic and balanced</td>
<td>51</td>
</tr>
<tr>
<td>logical and sensible</td>
<td>17</td>
</tr>
<tr>
<td>evidence and research based</td>
<td>9</td>
</tr>
<tr>
<td>Skill or action displayed</td>
<td>91</td>
</tr>
<tr>
<td>strong knowledge base</td>
<td>22</td>
</tr>
<tr>
<td>good clinical skills</td>
<td>21</td>
</tr>
</tbody>
</table>
Recent FRACCP survey

- Age 41.2 (SD 5.4)
- 73% respondents male
Respondents who would consider increasing work in a rural setting

- Yes: 75%
- No: 25%
Commenced/Completed Higher Degree

- PhD: 30
- Masters: 15
- No Higher Degree: 10

Reasons Respondents Undertook Higher Degree

- Desire to do Research: 60
- Career Development: 45
- It was expected: 10
- Sated lifestyle: 5
Managerial

- How well trained
- Use in practice

Run private practice
Manage complaints
Knowledge health systems
Regulations
Medical directorship
Research Ethics and Funding

- How well trained
- Use in practice

- Ethics approval
- Government funding
- Industry funding
- Other funding sources

Graph showing the comparison between how well trained and use in practice for different funding sources.
Reported training level and competence in care of dialysis and transplant patients

- Little or no training
- Some training but not competent
- Well-trained, competent

Berns, CJASN 2010
Reported training level and competence in research and related topics

Berms, CJASN 2010
Reported training level and competence in business and administrative aspects of nephrology

Berns, CJASN 2010
Concern that current training involves less clinical care, less complete patient examinations than in the past

“The expansion of information over the years has raised the minimum base of clinical medical knowledge beyond the scope of the time currently allotted to trainees for patient contact”
Changes in medical training

Postgraduate training has evolved from apprenticeship model to a defined training period with a core curriculum

Flexibility in training (part-time), safer working hours

Time seeing patients is diminishing (15% of their working day)

Bedside evaluation is ‘a healing ritual and a powerful diagnostic tool’ and must be learnt through apprenticeship


but is often bypassed with imaging technology, computer modules, and simulated virtual patients

Difficulties with the Australian training program

• Reduced work hours
  • Increased shift work – less work during “business” hours
  • Most studies report an adverse impact on training
  • Australia
    – Lack of time for formal and independent study
    – Lack of motivation due to fatigue
    – Lack of supervision and feedback

Carr S, Postgrad Med J 2003
Difficulties with the Australian training program

• Selection for entry to advanced training
  • Central vs hospital specific
  • One year position vs a 3 year program
  • Is the entry bar set at the same level at all sites?

• Ambulatory care
  • Privatised outpatients
  • Need for inpatient management (service demands)

• Site accreditation
• Management
• Leadership
Difficulties with the Australian training program

- Location of training
  - Public hospitals dominant
    - Private hospital patients willingness to be seen by medical students (Tiong MK, Int Med J 2012)
  - City vs rural
  - Indigenous
- Assessment
  - Calibration of assessors
  - The borderline trainee who gets through 1-2 years
  - Difficulties in not passing a trainee
  - Trainee in difficulty
  - IRT’s
Employment

• One of the biggest concerns of trainees

• NZ plans
  • Health Workforce NZ
  • Determine registrar needs
  • Adjust training position numbers
  • Employ gen med AT’s or BPT’s
  • National committee for selection into training and allocation of sites (based on trainees preferences)
The end product

• Where do they go?
  • How does work differ by location?
• What nephrology do they do?
• What non-nephrology do they do?
• How many hours work/week
• Quality of the end product?
• Will rural demands be met with current system?
• How many do we need to train???
  • Renal AT vs gen med AT vs BPT or non-accredited position
Spares
Table 2.
Responses to questions regarding training experience in disease diagnosis and management

<table>
<thead>
<tr>
<th></th>
<th>Little or No Training</th>
<th>Some Training but Not Enough to Feel Competent</th>
<th>Well Trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kidney stones</td>
<td>9.0</td>
<td>27.1</td>
<td>63.9</td>
</tr>
<tr>
<td>Complex hypertension</td>
<td>1.5</td>
<td>14.3</td>
<td>84.2</td>
</tr>
<tr>
<td>Acute GN</td>
<td>1.5</td>
<td>12.8</td>
<td>85.7</td>
</tr>
<tr>
<td>Nephrotic syndrome</td>
<td>0.8</td>
<td>9.8</td>
<td>89.5</td>
</tr>
<tr>
<td>Diabetic nephropathy</td>
<td>0</td>
<td>1.5</td>
<td>98.5</td>
</tr>
<tr>
<td>Other glomerular diseases</td>
<td>1.5</td>
<td>19.5</td>
<td>78.9</td>
</tr>
<tr>
<td>Renovascular disease</td>
<td>1.5</td>
<td>15.8</td>
<td>82.7</td>
</tr>
<tr>
<td>Chronic kidney disease and its complications</td>
<td>0</td>
<td>1.5</td>
<td>98.5</td>
</tr>
<tr>
<td>Electrolyte disorders</td>
<td>1.5</td>
<td>13.5</td>
<td>85.0</td>
</tr>
<tr>
<td>Other disorders</td>
<td>1.5</td>
<td>12.8</td>
<td>83.7</td>
</tr>
</tbody>
</table>
Reported training level and competence in acute dialysis, plasmapheresis, kidney biopsy, and DX access placement.
Reported training level and competence in ultrasound and renal biopsy interpretation

Berns, CJASN 2010
Number of programs reporting specific minimum numbers of procedures required for documentation of procedural competence in ultrasound for kidney biopsies and continuous renal replacement therapy (CRRT).

Berns J S, and O'Neill W C CJASN 2008;3:941-947
Number of programs reporting specific minimum numbers of procedures required for documentation of competence in insertion of temporary hemodialysis catheters and performance of kidney biopsies.
Number of programs reporting specific minimum numbers of procedures required for documentation of procedural competence in ultrasound for kidney biopsies and continuous renal replacement therapy (CRRT).

Berns J S, and O'Neill W C CJASN 2008;3:941-947
Point-prevalence percentage of African-American ESRD patients and percentage of African-American nephrology fellows in a given year

Onumah; CJASN 2011
Exposure to clinical nephrology

PD patients

HD patients

Acute renal failure

Biopsy reviews

Urinalysis

Native biopsies

Transplant biopsies

% Trainees with no acute transplant exposure

Vascaths
Difficulties with the training program
## RACP Trainee Growth - Australia

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th></th>
<th>2012</th>
<th></th>
<th></th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adult</td>
<td>Paed</td>
<td>Total</td>
<td>Adult</td>
<td>Paed</td>
<td>Total</td>
</tr>
<tr>
<td>Med students</td>
<td>1425</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3284</td>
</tr>
<tr>
<td>BPT’s</td>
<td>765</td>
<td>240</td>
<td>1005</td>
<td>2197</td>
<td>664</td>
<td>2861</td>
</tr>
<tr>
<td>AT’s</td>
<td>510</td>
<td>180</td>
<td>690</td>
<td>1468</td>
<td>593</td>
<td>2061</td>
</tr>
<tr>
<td>AT’s’ visors</td>
<td>1066</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3005</td>
</tr>
<tr>
<td>New Fellows</td>
<td>170</td>
<td>51</td>
<td>243</td>
<td>456</td>
<td>146</td>
<td>662</td>
</tr>
<tr>
<td>Total Fellows</td>
<td>4566</td>
<td>1219</td>
<td>7166</td>
<td>7592</td>
<td>2151</td>
<td>11552</td>
</tr>
</tbody>
</table>


Increasing number of Trainees

- Push to promote nephrology trainees
- Newer small independent renal units
- Concern about the burden of CKD
- Workforce demands at sites, unrelated to training
- Increase in physician trainees passing the exam
# RACP Trainee Growth - NZ

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th></th>
<th>2012</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adult</td>
<td>Paed</td>
<td>Total</td>
<td>Adult</td>
</tr>
<tr>
<td>Interns</td>
<td>292</td>
<td></td>
<td></td>
<td>363</td>
</tr>
<tr>
<td>BPT’s</td>
<td>213</td>
<td>84</td>
<td>297</td>
<td>343</td>
</tr>
<tr>
<td>AT’s</td>
<td>190</td>
<td>81</td>
<td>271</td>
<td>236</td>
</tr>
<tr>
<td>New Fellows</td>
<td>20</td>
<td>10</td>
<td>30</td>
<td>95</td>
</tr>
<tr>
<td>Total Fellows</td>
<td>877</td>
<td>237</td>
<td>1114</td>
<td>1430</td>
</tr>
</tbody>
</table>
## International comparisons

<table>
<thead>
<tr>
<th>Organization</th>
<th>Core Members</th>
<th>Non-Core Members</th>
<th>5yr Requirements</th>
<th>Ongoing Assessments</th>
<th>Procedures and Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>RACP</td>
<td>2 core, 1 non-core</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCP UK (2010)</td>
<td>5 yrs</td>
<td>All aspects of HD/PD and Tx inc.</td>
<td>Ongoing assessments throughout, basic--complex.</td>
<td>Procedures not mandated but “competent” with 6 DOPS by min 3 observers.</td>
<td></td>
</tr>
<tr>
<td>RCP Ire (2009)</td>
<td>3 core, 1 non-core</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Acute Tx: 10 cases/yr
- Chr Tx: 10 cases per yr
- HD: 35/yr inc CVVHD, PD:10/yr
- Bx/catheters: 10 each/yr
International comparisons

Table 1. Current Requirements and Proposed Revisions for Nephrology Fellowship Training

<table>
<thead>
<tr>
<th></th>
<th>Current Fellowship (2 y)</th>
<th>Proposed Clinical Fellowship (2 y)</th>
<th>Proposed Research and Clinical Fellowship (3 y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum clinical experience</td>
<td>12 mo</td>
<td>18 mo</td>
<td>12 mo</td>
</tr>
<tr>
<td>Minimum ambulatory clinic time</td>
<td>24 mo of continuity clinic experience; ≥3 mo of transplant care</td>
<td>24 mo of continuity clinic experience; ≥3 mo of transplant care</td>
<td>2-3 mo</td>
</tr>
<tr>
<td></td>
<td>(in half-days/wk for the periods shown)</td>
<td>(general nephrology or vascular access, diabetes, urology, etc)</td>
<td>(general nephrology or vascular access, diabetes, urology, etc)</td>
</tr>
<tr>
<td>Interventional procedures (native kidney &amp; transplant kidney biopsies &amp; central venous dialysis catheter insertions)</td>
<td>Required for all fellows; minimum no. unspecified</td>
<td>Not required; fellows may elect to certify (involves satisfactorily performing a minimum specified no. of procedures [eg, 5])</td>
<td>Not required; fellows may elect to certify (involves satisfactorily performing a minimum specified no. of procedures [eg, 5])</td>
</tr>
</tbody>
</table>

Source for current fellowship requirements: Accreditation Council for Graduate Medical Education. [16, 17, 28]

Plus ‘exit’ exam : American Board of Internal Medicine – certifying examination in nephrology (ABIM-CEN)
Evidence-based nephrology training

Disease complexity of patients has increased substantially; increasing reports on nephrology training

• One US study reported multiple clinical areas in which little or no training led to perceived lack of self-competence
  
  Bern et al. *CJASN* 2011

• Another US study attempted to determine the association between nephrology training and subsequent clinical practice

  Merighi et al. *Hemodial Int* 2012
Nephrology Training in Australia

Lane & Brown (2011) undertook evidence-based study that reported:

- Along with training and assessment of clinical practice, training programs need to incorporate training in basic interventions, research skills, administration and teaching

- Training towards high standards in advanced communication and maintenance of holistic approach

Lane, Brown. CJASN 2011; 6: 2681