What do we do? What should we teach?
Results from a Task Analysis Study of Oregon NP Practice

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Introduction: Research Questions

• What clinical skills and procedures (CSP) do NPs use in practice?
• What clinical skills and procedures do we teach NP students?
• How can we better match these two professional activities?

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Introduction: NP Profession Triad

• Exploring the inter-relationships of the Practice-Teaching-Research domains promotes an evidence-based profession.
Introduction: Study Purpose

**Purpose:** Complete a task analysis study of Oregon NP primary care CSPs to inform NP educational curricula.
- Examine CSP differences in rural vs. urban NPs
- Oregon NPs are autonomous and provide primary, acute, and specialty care services
- NPs perform multiple CSPs for diagnostic and/or therapeutic purposes

Literature Review & Project Significance

- Literature review: few studies found that examined CSP in NP practice/education
- CSPs in NP practice should inform NP program educational curricula
- NP program goals: offer didactic and skills training that is
  - current
  - based on clinical practice needs

Method: Design & Sample

**Design**
- Descriptive correlational survey
  - OHSU IRB approval

**Sample**
- Convenience sample of Oregon FNP, ANP, PNP, GNP (N=1450)
- Other Oregon APNs excluded (PMHNP, WHNP, CNM, CNS, CRNA)
Method: Survey Instrument

- Demographic, Geographic, and CSP items
- Mailed to all Oregon FNP, ANP, PNP, GNP
- Return envelope provided
- Data collection July-December 2010
- CSP survey list developed from:
  - List reviewed by expert NPs before distribution

Methods: Data Handling

- Returned survey data entered in spreadsheets and verified
- Spreadsheet data transferred to SPSS for statistical analysis
- Preliminary data analysis (March 2011)

Demographic & Geographic Survey Questions

- Practice location (Urban, Suburban, Rural, Frontier)
- Estimated annual patient visits
- Availability of:
  - On-site, Local, Regional, Distant
  - physician for collaboration
  - physician specialists (Ortho, Cardio, Gen. Surgery, OB/GYN, Derm., Ophth.)
  - 24-hour MD-staffed ED
- Area of NP Certification (FNP, ANP, PNP, GNP)
- Type of NP educational program attended
  - Certificate, Masters, Post-Masters, Doctorate
Results

• Surveys returned/mailed:
  N= 452/1450 (31%)
  136/452 (30%) from rural/frontier NPs

• Estimated annual patient visits (all)
  1. 2,500 or less = 15.4%
  2. 2,500-5,000 = 20.3%
  3. 5,000-10,000 = 24.8%
  4. >10,000 = 39.5%

Results

• Availability of physician for collaboration (all)
  1. On-site = 74%
  2. Local (< 5 mi) = 16%
  3. Regional (5-50 mi)= 7%
  4. Distant (>50 mi) = 3%

Results

• Availability of 24-hour MD-staffed ED (all)
  1. Local (< 5 mi) = 85.5%
  2. Regional (5-50 mi)= 12.7%
  3. Distant (>50 mi) = 1.8%
Results

Area of NP Certification
- FNP(316) = 70%
- ANP(82) = 18%
- PNP(49) = 11%
- GNP(17) = 4%

Type of NP educational program
- Certificate (44) = 9.8%
- Masters (364) = 81.4%
- Post-MS (37) = 8.3%
- Doctorate (2) = 0.4%

Questions for each CSP item (90 total)

1. Do you perform this skill/procedure? Yes No
2. How often do you perform this skill/procedure?
   - Routinely (>once/week)
   - Frequently (>once/month)
   - Rarely (<once/year)
3. How important is skill or procedure to clinical practice?
   - Very important
   - Important
   - Moderately important
   - Minimally important
   - Not important
4. How did you obtain initial training for skill or procedure?
   - NP program
   - CE program
   - Colleague training
   - On-the-job

Dermatologic
- Abscess-Incision and Drainage
- Bites (Cats, Dogs, Insects, etc)
- Burns-Debridement
- Digital Nerve Block
- Fishhook Removal
- Microscopy (e.g. wet mount)
- Nail Removal
- Punch Biopsy
- Ring Removal
- Sebaceous Cyst Removal
- Skin Biopsy/Lesion Removal
- Skin Closure-Dermabond, Staples, Sutures
- Skin Tag Removal
- Soft Tissue Aspiration
- Subungual Hematoma Excision
- Tick Removal
- Hemostasis/Electrocautery
- Wood's Light Examination

Musculoskeletal
- Arthrocentesis
- Bone Marrow Aspiration/Biopsy
- Electroseptostomy
- Debridement
- Extravasation
- Ganglion Cyst Aspiration/Injection
- Joint Corticosteroid Injection
- Lumbar Puncture
- Splinting (Fiberglass)
- Trigger Point Injection
- X-ray Interpretation-Bones

Respiratory
- Chest Tubes for Transport
- Intubation
- Nebulizer Administration
- Peak Flowmeter
- Pulmonary Function Testing
- Stab Wound Stabilization
- X-Ray Interpretation-Chest
**Slide 16**

**Genitourinary and Breast**
- Bartholin Cyst Abscess: I & D
- Breast Biopsy: Needle Aspiration
- Cervical Cap
- Cervical Lesions: Cryotherapy
- Colposcopy/Cervical Biopsy
- Condyloma Acuminatum Removal
- Circumcision/Dorsal Penile Nerve Block
- Colposcopy/Cervical Biopsy
- Cryotherapy
- Circumcision/Dorsal Penile Nerve Block
- Excision
- Subdermal Contraceptive Implant
- Ultrasonography
- Vaginectomy

**Head: Eyes, Ears, Nose, and Mouth**
- Audiometry
- Auricular Hematoma Evacuation
- Cerebral Impaction Removal
- Cerebral Abstraction
- Epistaxis Control
- Eye Irrigation
- Eyelid Evacuation
- Foreign Body Removal: Ear
- Foreign Body Removal: Nose
- Foreign Body Removal: Eye
- Frenotomy for Ankyloglossia
- Occlusion of Nerve Block
- Tongue Laceration Repair
- Tooth Extraction and Fracture
- Tympanometry

**Cardiovascular**
- Arterial Puncture (ABG)
- Blood Culture Collection
- Capillary Blood Collection
- Doppler Technique
- Electrocardiogram (ECG) Interpretation
- Holter Monitor Application
- IV Access
- Intravenous Line Insertion
- Pulmonary Function Test (PFT)
- Skin Closure - Sutures
- Medical History
- Pupil Examination
- ECG Interpretation
- Thrombosed Hemorrhoid Removal
- X-Ray Interpretation: Abdominal

**Gastrointestinal**
- Abdominal Paracentesis
- Arteriography
- Gastroduodenoscopy
- Gastric Lavage
- Gastric Hemorrhage Reduction
- Nasogastric Tube (NGT) Insertion
- PEG Tube Reinsertion
- X-Ray Interpretation: Abdominal

**Results: Urban vs. Rural Top 10 Frequency of Use**

<table>
<thead>
<tr>
<th>CSP Urban NPs</th>
<th>CSP Rural NPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cerumen Removal 68%</td>
<td>1. Cerumen Removal 93%</td>
</tr>
<tr>
<td>2. Pap Smear 65%</td>
<td>2. Blunt (Cats, Dogs) 93%</td>
</tr>
<tr>
<td>3. Abscess I &amp; D 63%</td>
<td>3. Pap Smear 93%</td>
</tr>
<tr>
<td>4. Blunt (Cats, Dogs) 62%</td>
<td>4. PEC Tube Removal 93%</td>
</tr>
<tr>
<td>5. ECG Interpretation 61%</td>
<td>5. Abscess I &amp; D 95%</td>
</tr>
<tr>
<td>6. Peak Flowmeter 59%</td>
<td>6. Skin Tag Removal 95%</td>
</tr>
<tr>
<td>7. Necrotic Adnexa 54%</td>
<td>7. Necrotic Adnexa 79%</td>
</tr>
<tr>
<td>8. Skin Tag Removal 54%</td>
<td>8. Peak Flowmeter 79%</td>
</tr>
<tr>
<td>9. Microscopy 52%</td>
<td>9. Skin Closure - Sutures 77%</td>
</tr>
<tr>
<td>10. CXR Interpretation 52%</td>
<td>10. ECG Interpretation 76%</td>
</tr>
</tbody>
</table>
### Results: Urban - Top 10 Criticality of CSP
(How important is skill or procedure to clinical practice?)

<table>
<thead>
<tr>
<th>CSP</th>
<th>Very Important</th>
<th>Important</th>
<th>Moderately Important</th>
<th>Minimally Important</th>
<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cerumen Removal</td>
<td>39%</td>
<td>18%</td>
<td>21%</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>2. Pap Smear</td>
<td>67%</td>
<td>9%</td>
<td>6%</td>
<td>2%</td>
<td>16%</td>
</tr>
<tr>
<td>3. Abscess &amp; I&amp;D</td>
<td>21%</td>
<td>24%</td>
<td>14%</td>
<td>11%</td>
<td>13%</td>
</tr>
<tr>
<td>4. Bites (Cats, Dogs)</td>
<td>21%</td>
<td>28%</td>
<td>17%</td>
<td>10%</td>
<td>14%</td>
</tr>
<tr>
<td>5. ECG Interpretation</td>
<td>35%</td>
<td>19%</td>
<td>12%</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>6. Peak Flowmeter</td>
<td>44%</td>
<td>18%</td>
<td>16%</td>
<td>7%</td>
<td>15%</td>
</tr>
<tr>
<td>7. Nebulizer Admin.</td>
<td>46%</td>
<td>19%</td>
<td>17%</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td>8. Skin Tag Removal</td>
<td>19%</td>
<td>23%</td>
<td>21%</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>9. Microscopy</td>
<td>53%</td>
<td>17%</td>
<td>9%</td>
<td>3%</td>
<td>17%</td>
</tr>
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<td>10. CXR Interpretation</td>
<td>58%</td>
<td>18%</td>
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<td>3%</td>
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</tbody>
</table>

### Results: Rural - Top 10 Criticality of CSP
(How important is skill or procedure to clinical practice?)

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<thead>
<tr>
<th>CSP</th>
<th>Very Important</th>
<th>Important</th>
<th>Moderately Important</th>
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<th>Not Important</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cerumen Removal</td>
<td>43%</td>
<td>30%</td>
<td>18%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>2. Bites (Cats, Dogs)</td>
<td>38%</td>
<td>29%</td>
<td>20%</td>
<td>11%</td>
<td>2%</td>
</tr>
<tr>
<td>3. Pap Smear</td>
<td>76%</td>
<td>13%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>4. Tick Removal</td>
<td>17%</td>
<td>26%</td>
<td>27%</td>
<td>22%</td>
<td>4%</td>
</tr>
<tr>
<td>5. Abscess &amp; I&amp;D</td>
<td>47%</td>
<td>28%</td>
<td>15%</td>
<td>7%</td>
<td>3%</td>
</tr>
<tr>
<td>6. Skin Tag Removal</td>
<td>31%</td>
<td>24%</td>
<td>27%</td>
<td>16%</td>
<td>3%</td>
</tr>
<tr>
<td>7. Nebulizer Admin.</td>
<td>53%</td>
<td>23%</td>
<td>18%</td>
<td>8%</td>
<td>13%</td>
</tr>
<tr>
<td>8. Peak Flowmeter</td>
<td>43%</td>
<td>33%</td>
<td>16%</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td>9. Skin Closure-Sutures</td>
<td>55%</td>
<td>24%</td>
<td>13%</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>10. ECG Interpretation</td>
<td>55%</td>
<td>24%</td>
<td>13%</td>
<td>6%</td>
<td>2%</td>
</tr>
</tbody>
</table>

### Results: Top 10 CSPs Learned in NP Program
(How did you obtain initial training for skill or procedure?)

<table>
<thead>
<tr>
<th>CSP</th>
<th>% NPs Learned CSP in School</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pap Smear</td>
<td>89</td>
</tr>
<tr>
<td>2. Microscopy (wet mount)</td>
<td>67</td>
</tr>
<tr>
<td>3. Diaphragm Fitting/Insertion</td>
<td>49</td>
</tr>
<tr>
<td>4. Eyelid eversion</td>
<td>47</td>
</tr>
<tr>
<td>5. Suturing</td>
<td>47</td>
</tr>
<tr>
<td>6. CXR Interpretation</td>
<td>45</td>
</tr>
<tr>
<td>7. ECG Interpretation</td>
<td>44</td>
</tr>
<tr>
<td>8. Tympanometry</td>
<td>41</td>
</tr>
<tr>
<td>9. Extremity casting/splinting</td>
<td>33</td>
</tr>
<tr>
<td>10. Urinary tract catheter insertion</td>
<td>30</td>
</tr>
</tbody>
</table>
Summary

• Primary care CSPs are used more frequently by rural NPs than urban NPs
  – Urban NPs used a CSP more frequently than rural for only 11 of the 90 CSPs.
• Total average use of all CSPs (90)
  – Total(28) = 31%
  – Rural(36) = 40%
  – Urban(25) = 28%

Summary

• Majority of CSPs surveyed were not learned in NP program
  – Max = 89.3% (Pap)
  – Min = 6.5% (Lumbar Puncture)
  – Avg = 24.3%

Summary

• Criticality: 43/90 (48%) of CSPs were rated as very important or important to respondents’ clinical practice
• Criticality of CSPs higher for rural NPs
  – Rural: 55/90 = 61%
  – Urban: 38/90 = 42%
Limitations & Acknowledgements

Study generalizability is limited by:
- Survey methodology
- Geography (Oregon)
- Respondents’ surveyed (FNP, ANP, PNP & GNP only)

 Appreciation is expressed to the Oregon NPs for their contributions to this project.

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- OHSU Foundation Betty Gray Rural Health Development Fund