Canadian Pharmacist's Perspective on the Role of the Cystic Fibrosis Pharmacist in an Outpatient Multidisciplinary Care Team

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Background
- Cystic fibrosis (CF) is a complex disease with significant medication burden
- Outpatient CF clinics utilize a multidisciplinary approach to provide lifetime care to individuals with CF
- CF Canada, the guiding authority on CF clinical care in Canada, has developed guidelines to establish minimum staffing requirements that should be met by CF clinics to provide adequate care
- Availability of pharmacists and financial support within each CF clinic varies widely across Canada
- It is unclear if Canadian CF clinics are meeting the pharmacist minimum staffing standards suggested by CF Canada
- The CF Canada guidelines offer little guidance surrounding the role of the pharmacist in CF outpatient clinics
- There is currently no published literature evaluating which outpatient CF clinic pharmacist roles Canadian pharmacists and CF patients feel are the most impactful to the care of the CF patient

Study Objectives
- To develop consensus on CF pharmacist roles that have high patient-care impact in an outpatient clinic setting
- To characterize current pharmacist staffing and clinical practices in Canadian outpatient CF clinics

Methods
- **Design**
  - 3 surveys of 2 participant groups
  1. Canadian outpatient CF clinic pharmacists
  2. Non-Delphi participant group
- **Study Population**
  - 1. Canadian outpatient CF clinic pharmacists
  - Exclusion: inability to communicate in written English
  - 2. Victoria Royal Jubilee Hospital (RJH) adult outpatient CF clinic patients
  - Exclusion: inability to communicate in written English, telehealth patients
- **Candidate Outpatient CF Clinic Pharmacist Role Generation**
  - Identified via literature search and drawing from CF clinic experience
  - 20 roles identified
  - 20 included on pharmacist survey
  - 15 worded in lay language included on patient survey
- **Modified Delphi Survey**
  - 3 rounds of survey occurred Jan – April 2017 designed to generate consensus
  - Panels required to view voice over presentation of study procedures and expectations prior to Round 1
  - Each role rated by panelist on 9-point Likert scale as to if the role positively impacts the care of the CF patient
  - 1 indicating strongly disagree; 9 indicating strongly agree
  - Panels provided individual and group results for each round between rounds
  - Panelists could suggest additional candidate outpatient CF clinic pharmacist roles in Round 1; co-investigators determined whether to include on subsequent rounds
  - Consensus criteria: ≥ 75% panelists rate role 7-9 on Likert scale after Round 3

Study Results
- **Table 2. Canadian CF pharmacist provision of and perspectives on outpatient CF clinic pharmacist roles**


c| Characteristic | Delphi Panel N=14 | Non-Delphi Pharmacists N=14 |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Outpatient CF Clinic Experience (1-5 years)</td>
<td>2 (14%)</td>
<td>12 (86%)</td>
</tr>
<tr>
<td>&lt; 2 years</td>
<td>2 (14%)</td>
<td>1 (7%)</td>
</tr>
<tr>
<td>2 years</td>
<td>2 (14%)</td>
<td>4 (28%)</td>
</tr>
<tr>
<td>Academic Credentials</td>
<td>Pharmacy Associates</td>
<td>7 (50%)</td>
</tr>
<tr>
<td>PharmD</td>
<td>2 (14%)</td>
<td>1 (7%)</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>2 (14%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>CFT Patient Population</td>
<td>Adults Only</td>
<td>5 (36%)</td>
</tr>
<tr>
<td>Pediatric</td>
<td>7 (50%)</td>
<td>4 (28%)</td>
</tr>
<tr>
<td>Adults &amp; Paediatrics</td>
<td>2 (14%)</td>
<td>0 (0%)</td>
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- **Figure 2. Pharmacist participant flow**

- **Figure 3. Patient participant flow**

- **Figure 4. Dedicated pharmacist status in Canadian outpatient CF clinics**

- **Table 3. RHJ CF patient perspectives on outpatient CF clinic pharmacist roles**

<table>
<thead>
<tr>
<th>Outpatient CF Clinic Pharmacist Role</th>
<th>Patients who rated role 7-9 (n=26) (%)</th>
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<tr>
<td>Attending CF multidisciplinary team rounds</td>
<td>21 (81%)</td>
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<tr>
<td>Individualizing medication and dose requirements</td>
<td>22 (85%)</td>
</tr>
<tr>
<td>Educating and counseling patients and/or caregivers</td>
<td>22 (85%)</td>
</tr>
<tr>
<td>Medication reconciliation, medication history taking, and monitoring patient medication adherence</td>
<td>21 (81%)</td>
</tr>
<tr>
<td>Medication review and education</td>
<td>20 (77%)</td>
</tr>
</tbody>
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Discussion
- **2010 CF Canada pharmacist staffing recommendation is a minimum recommendation and clinics may benefit from additional pharmacist support given the wide array of highly impactful pharmacist roles**
- **Strengths**
  - Delphi panel contained diverse group of experienced Canadian CF pharmacists
  - CF pharmacist and patient opinions on pharmacist roles captured
- **Limitations**
  - Low response rates, small pharmacist and patient sample size
  - Patients limited to adults at RJH in Victoria, BC
  - Limited formal statistical analysis performed
  - 2010 CF Canada minimum pharmacist FTE based on non-pharmacist healthcare professional’s opinion of what is realistically required in their CF clinic
  - Pharmacist FTE comparison based on FTEs protected for pharmacist and patient opinions on outpatient CF care in order to directly compare with the CF Canada Guidelines
  - Small pharmacist sample size and variation in FTE response per clinic size makes staffing results difficult to interpret

Conclusion
- **48% (2014) of outpatient CF clinics do not have a dedicated pharmacist**
- **Clinics with a pharmacist appear to be meeting the 2010 CF Canada minimum staffing recommendation**
  - However, only 7/25 roles were provided by ≥ 95% of pharmacists
  - **RJH CF patients felt 5/15 pharmacist roles were highly impactful to their care**
  - ≥ 95% of pharmacists provided these roles in their clinic

Implications for Practice
- Many CF patients across Canada may be underserved by not having a dedicated pharmacist performing highly impactful roles at their respective clinic
- With limited resources, outpatient CF pharmacists can focus on their patient-care activities on roles that pharmacists and patients find highly impactful to the care of the CF patient

References available on request