National Continuing Competence Conference

Using Competency Data to Better Manage Health Professions

Russell Sawchuk
Steppingstones Partnership Inc.
November 1, 2007

Presentation Overview

In this presentation we will cover and discuss:

- Competency data model
- General uses of data
- Data objectives
- Sources of competency data
- Data analysis strategies
- Reporting strategies
- Issues and challenges
- Additional resources
Competency Data Model

Continuing competence program model and approach used for data applications described in this presentation.

Here are some of the background factors and assumptions:

- Model based on requirements of Alberta's *Health Professions Act*
- HPA requires all regulated health professions (29) to develop and implement a continuing competence program (CCP) and report annually
- Developed web-based competency management software for CCP
- Automated CMS needed; not possible to manage data manually
- Just beginning to identify data capture, analysis and reporting needs
A Continuing Competence Program (CCP) is a systematic and organized way to:
- Assess competencies
- Maintain and enhance competencies
- Monitor competencies
  Ensures a high level of expertise, competence and appropriate ethics in the job performance of a professional practitioner.

Components of the Alberta CCP model include:
- A detailed and comprehensive Competency Profile for the profession
- Competency assessment tools – self assessment forms based on Profile
- Learning plans / records – to plan and record annual professional development activities
- Optional components – learning activity evaluations, tests and quizzes, member profiles
- Data discussed will be applicable to most competence programs
This is an example of a Competency Profile:

**D. Clinical Diagnostics and Skills**

<table>
<thead>
<tr>
<th>D-1</th>
<th>D-2</th>
<th>D-3</th>
<th>D-4</th>
<th>D-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

**D-3: Naturopathic Assessment**

A Naturopathic / Holistic Veterinarian will:

- **D-3-1** Utilize all information gathered to create and prioritize a differential diagnosis list.
- **D-3-2** Continue the differential diagnosis process throughout patient / client care.
- **D-3-3** Analyze all information gathered and formulate a working assessment and treatment plan.
- **D-3-4** Understand and communicate assessment and pre / post-treatment procedures.

**General Uses of Data**

General data applications for managing continuing competence programs and initiatives.
General Uses of Data

Competency data can be used for:

- Planning
- Monitoring
- Tracking
- Decision making
- Needs identification
- Profiling
- Evaluating
- Reporting
- Research

Data Objectives

Specific objectives for the applications of competency data.
Data Objectives

Here are some ways competency data can be used in monitoring and managing continuing competence programs:

- **Compliance** – are members participating in the PD program as required (as measured by time stamps)
- **Progress** – where are members in regards to completing their learning activities (as measured by the learning plan “Status” variable)
- **Needs assessment** – what are this year’s learning needs of the members (as measured by the self assessment and learning plans)

Data Objectives . . . (2)

Here are some ways competency data can be used in monitoring and managing continuing competence programs:

- **Learning effectiveness** – are members learning what they need to learn most (as measured by comparing self assessments and learning plans)
- **Learning efficiency** – to what degree are learning activities meeting members’ PD needs (as measured by learning activity evaluations)
Data Objectives . . . (3)

Here are some ways competency data can be used in monitoring and managing continuing competence programs:

- **Competency Profile validation** – which competencies are no longer relevant (as measured by the NA ratings)
- **Differentiation** – since not all members are the same, are there certain groups of members that have different needs (as measured by cross-tabulating demographic variables with above factors).

Competency Assessment

Data elements collected and analyzed in the assessment of competence.
Competency Assessment

Competency assessment is first step in the process, e.g., what do I need to learn to do my work better?

- Self assessment most commonly used method
- Use self-assessment questionnaire based on competency profile
- Five point rating scale used:
  - 1 – Not applicable
  - 2 – Developmental
  - 3 – Competent
  - 4 – Desire to enhance
  - 5 – Excellent / Expert

Competency Assessment . . . (2)

Competency assessment provides valuable information.

- Analysis of self-assessment data identifies:
  - Not applicable competencies (NA)
  - Important learning needs (DEV)
  - Secondary learning needs (DTE)
  - Areas of expertise (EXC)
- Analysis may identify questionable responses
- Using demographic and other member data allows comparative analysis across groups
- Saving the analyzed data allows for year-to-year comparisons and trend analysis.
Below is a sample of a typical online self-assessment form:

Another approach used for self assessment of competencies is tests and quizzes

- Online test system provides short tests and quizzes on competencies
- Tests are scored and correct answers provided immediately to members
- Primary purpose is self assessment of knowledge and learning
- Regulatory college not interested in individual scores, but overall results provide indication of learning needs
Competency Assessment ... (5)

Tests and quizzes ...
- Item analysis available to improve quality of tests and quizzes
- The more tests and quizzes the better sampling and measure of learning needs
- Limited to knowledge areas; not effective in assessing skills
- Co-operative efforts among similar professions and educational institutions should be undertaken to create tests
- Members really like this component.

Learning Plans / Records

Data elements collected and analyzed relating to learning activities planned and completed.
Learning Plans / Records

This component is both an annual plan of proposed professional development activities and a record of learning completed.

- A brief form is completed for every learning / PD activity
- System is set up to provide a complete record of professional development activities
- Progress in completing learning activities is monitored
- Provides complete record / portfolio of training / learning

Learning Plans / Records . . . (2)

For every learning activity, the data captured include:

- Plan year
- Competency profile reference
- Learning objective (what I need to learn)
- Learning task / activity (how will I learn)
- Learning mode (course, self-study, etc.)
- Status (pending, in progress, completed)
- Date learning activity completed
- PD hours
- Results achieved
- Comments and notes
Learning Plans / Records . . . (3)

Below is an example of a learning plan / record form.

Learning Plans / Records . . . (4)

Data from this component has multiple uses.

- Provides regulatory college with a wealth of information on the PD activities of its members:
  - Assess whether learning plans are congruent with self-assessment needs
  - Identify learning needs of members from year to year
  - Be able to plan and provide / broker learning opportunities for its members
Learning Evaluations

Data elements collected and analyzed on evaluations of learning activities.

Most of our competency management systems have a learning activities evaluation component.

- A short evaluation form is completed on every learning activity completed
- Quickly becomes a huge searchable database of information
- Used by members to plan and select suitable learning activities
- Used by the regulatory colleges to screen / approve learning activities
- Provides feedback to training vendors and suppliers
Learning Evaluations . . . (2)

Data collected by the learning evaluation includes:

- Competency profile reference
- Learning type (course, self-study, etc.)
- Activity name, provider and location
- Cost and date completed
- Evaluation:
  - Quality of learning activity
  - Degree to which learning needs met
  - Value of learning activity
  - Recommendation to others

Learning Evaluations . . . (3)

Here is an example of a learning evaluation form:
Quality of Worklife

Data elements collected and analyzed on satisfaction with job, work and career.

This data is important as there is a relationship between job / career satisfaction and competence.

- Use online questionnaire that was developed in previous projects
- Measures all key components of job, work and career satisfaction
- Some issues as to role responsibility for this data (college vs. union)
- Important information in current environment of critical labour shortages.
Quality of Worklife . . . (2)

Below is the first page of the QWL online form:

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>SQM</th>
<th>SD</th>
<th>D</th>
<th>N</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>I enjoy doing work that is challenging.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q2</td>
<td>I feel I have a good balance between my work and personal life.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q3</td>
<td>My choice of career turned out pretty well what I expected it to be.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q4</td>
<td>I am treated with respect by my colleagues.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q5</td>
<td>I am usually able to complete my work during my work day.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q6</td>
<td>I am satisfied with what I am paid for the work I do.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q7</td>
<td>I am satisfied with my career.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q8</td>
<td>I have the information I need to do my job.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q9</td>
<td>My work is getting more complex in terms of the type of activities I perform.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q10</td>
<td>I am treated with respect by my clients.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Member / Practice Profiles

Data elements collected and analyzed on demographics and practices of members of the health profession.
Member / Practice Profiles

This data is collected by some of our CMS systems:

- Usually captured and stored in corporate membership database
- Some colleges wanted to capture additional practice data
- Useful to capture and report on data wanted by external agencies, e.g. CIHI, governments, etc.
- Desirable to be able to link to competency data for advanced analyses and research

An example of a member profile form:

| User Name: | MAVT22 | For information only! |
| Gender: | Male | Select Male or Female. |
| Birth Year: | 1966 | Specify year you were born, used in age calculations. |
| Register Year: | 1990 | Year you first registered with this Veterinary Association. |
| Practice Years: | 30 | Total number of years you have worked as a veterinarian. |
| Years of Education: | 6 | Years of formal education after high school. |
| Place of Education: | Canada | Country where you took your formal veterinary education and training. |
| Practice Type: | Small/comp. animals | Select your veterinary practice Type. |
| Work Type: | Clinic with several vets | Select your employment status. |
| CITY: | Edmonton | Select city where you practice. |
| Country: | Canada | Select country where you practice. |
| Plans for Leaving: | No | Do you have any plans to retire or otherwise leave veterinary practice within the next year? |
| Date of last Update: | 2017-11-15 12:55:34 | Automatically updated |

Update my Profile
Member / Practice Profiles . . . (3)

Demographic / practice data is useful for:

- Predicting requirements for new members for the profession:
  - Using age to project likely retirements
  - Using turnover data to project vacancies
- Identifying those whose competence may be at risk:
  - Formal training took place more than 20 years ago
  - Training was done out of country
  - Solitary practice

Discussion Forums

Data that can be collected and analyzed from postings on Discussion Forums.
Discussion Forums

Discussion Forums are included in most of our CMS applications.

- Not being used much – yet!
- Good source of data on technical issues and problems
- Source for data on membership concerns
- Good source for ideas and suggestions for improvements and enhancements.

Data Analysis Strategies

Strategies and techniques to extract, sort, analyze and interpret competency data.
Data Analysis Strategies

Here are some methods we use to analyze the data:

- Database table queries
  - Sort
  - Filter
  - Simple and complex searches
  - Real time
  - Counts and sums

Here is an example of a database table query:
Data Analysis Strategies . . . (3)

Here are some methods we use to analyze the data:

- Reports
  - Limited to selected variables
  - Sorted by specific variables
  - Grouped by selected variables
  - Filtering is possible
  - Counts and sums
  - Useful for textual data

Data Analysis Strategies . . . (4)

Here are some methods we use to analyze the data:

- Data export
  - Excel
  - SPSS
  - Basic and advanced statistical analyses
  - Charts and graphs produced
  - Not all data can be statistically analyzed
Data Analysis Strategies . . . (5)

Here are some methods we use to analyze the data:

- Real time graphs and charts
  - Programming needed to extract and prepare data for display
  - Need to refresh to update
  - Possible to aggregate data to produce summary graphs
  - Limited to numerical data

Reporting Strategies

Thoughts about what and how to report the results of data analysis and findings.
Reporting Strategies

The Annual Continuing Competence Program Report should include the following general information:
- Profile and description of membership
- Developmental needs
- Professional development activities
- Competence monitoring
- Challenges and issues
- Continuing competence plan

Reporting Strategies . . . (2)

Calculating and reporting key performance indicators (KPI) may also be useful. Some possible ones are:
- Percentage change in membership from previous year
- Percent turnover of members
- Percent of members of 55 years of age
- Average number of professional development activities per member
- Average annual hours of professional development per member
- Percent of members that passed their competency audit
Issues and Challenges

Issues and challenges related to the collection, analysis and use of competency data in managing health professions.

Here are some issues and challenges that we have encountered in our various competency projects:

- Requires a good competency profile as a foundation to the system
- Challenges with data collection
- Questions about representativeness of the data and conclusions reached
- Concerns about the quality and accuracy of the data
- Lack of access and knowledge of online tools and systems
- Uncertain about member reporting requirements
### Issues and Challenges . . . (2)

Here are some issues and challenges that we have encountered so far in our various competency projects.

- Concerns about confidentiality and privacy
- Lack of user knowledge and commitment
- Requires considerable member and program co-ordinator training
- Few analyses and reporting tools
- Need for information on learning opportunities

### Issues and Challenges . . . (3)

Here are some issues and challenges that we have encountered so far in our various competency projects.

- Desire for online learning and tests
- Need for monitoring and auditing systems
- Unclear information needs of colleges
- Unknown reporting requirements to stakeholders
- Using normative and comparative data across professions
- Lack of expertise and experience in aggregating, interpreting and presenting data to decision makers
Issues and Challenges . . . (4)

Dashboards are one way to present key information to decision makers.

Presentation Summary

- Reporting Strategies
- Data uses and objectives
- Issues and challenges
- Competency data sources
- Data Analysis Strategies
### Additional Resources

Here are some useful sources for additional information related to the topics discussed in this presentation.

- **CompeTrax.com** – a fully functional demonstration site for the CompeTrax competency management software system (CMS).
- **QuizReporter.com** – information, reviews and demos of different quiz and test software packages and their applications.
- **Articulate.com** – information, resources, tips and a community about e-Learning and quizzes.
- **Igivetest.com** – online test and quiz software.
- **Xlinesoft.com** – application development software with very good online reporting and charting capabilities.

### Contact Information

To contact the presenter for more information:

**Russell Sawchuk**  
**Steppingstones Partnership Inc.**  
Box 8220  
Edmonton, Alberta T6E 6R2  
CANADA  
Phone: 780-430-8245 or 1-800-267-9997  
E-mail: russ@steppingstones.ca

Webs:  
[Steppingstones.ca](http://steppingstones.ca)  
[CompeTrax.com](http://competrx.com)  
[Surveys-Plus.com](http://surveys-plus.com)  
[LearningNurse.com](http://learningnurse.com)  
[QuizReporter.com](http://quizreporter.com)

A copy of this presentation can be downloaded from the Library at [http://www.competrax.com](http://www.competrax.com)