Nutrition Informatics Competencies

Delphi Study

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Director, NFSC Dietetic Internship
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February 14, 2013
1. Provide an overview of the nutrition informatics Delphi study.

2. Provide an overview of competencies for computer skills, informatics skills and informatics knowledge.

3. Identify key nutrition informatics competencies for different levels and areas of practice.

4. Share a checklist for evaluating your nutrition informatics skills and knowledge.
Healthcare Information Management & Systems Society

A cause-based, not for profit organization exclusively focused on providing global leadership for the optimal use of information technology (IT) and management systems for the betterment of healthcare.

- 46,000+ individual members
- 560+ corporate members
- 300+ not-for-profit organizations (Organizational Affiliate)
- 240+ Non profit Partners & REC Affiliates
HIMSS Clinical Informatics Community

A multidisciplinary framework focused on thought leadership that is supported by membership programs for nutritionists, physicians, pharmacists, dietitians, clinical engineers and nurses.

HIMSS Nutrition Informatics Resources
http://www.himss.org/asp/topics_nutritioninformatics.asp
At 73,000 members, is the Largest Food & Nutrition Organization in the World

**Academy of Nutrition & Dietetics**

- **Education and Research**: 7%
- **Consultation and Business**: 8%
- **Food/Nutrition Management**: 12%
- **Community**: 11%
- **Clinical Nutrition - Acute Care**: 30%
- **Ambulatory Care**: 17%
- **Long Term Care**: 9%

**Compensation & Benefits Survey 2011**
"The effective retrieval, organization, storage, and optimum use of information, data, and knowledge for food and nutrition related problem solving and decision making. Informatics is supported by the use of information standards, information processes, and information technology”.

ADA Nutrition Informatics Work Group, 2007
Adapted from the definition of biomedical informatics in Biomedical Informatics by Shortliffe & Cimino Springer Science & Media 2006
“The intersection of information, nutrition, and technology.”
Nutrition Informatics Competencies

- Delphi study conducted in 2011
- Study published in the Academy Journal - December 2012
- Study documents and competencies available at:
  
  http://eatright.org/NIDelphi2012
Nutrition Informatics National Delphi Study

NUTRITION INFORMATICS COMPETENCIES BY LEVEL OF PRACTICE

2012 National Delphi Study

Nutrition Informatics competencies were developed by the Academy Nutrition Informatics Committee through the use of the Delphi technique. Delphi Studies use a structured approach to gathering "collective intelligence" whereby participants answer several rounds of questions. After each round, a facilitator provides an anonymous summary of the experts comments from the previous round. Each round allows participants to revise earlier comments based upon collective group comments from the previous round. The expectation is that through this process, the range of answers will focus on the correct answers and/or criteria.


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More Information:

- 2012 Academy of Nutrition and Dietetics Nutrition Informatics Delphi Study Competencies by Level Of Practice
- 2012 Nutrition Informatics Competencies – GRID
- Nutrition Informatics Delphi Study Competencies Survey Round 1
- Nutrition Informatics Delphi Study Competencies Survey Round 2
- Nutrition Informatics Delphi Study Competencies Survey Round 3
Study Goals

Establish the first compilation of informatics competencies for RDs, DTRs and students based on the Academy’s Career Development Guide six levels of practice;

- Novice
- Beginner
- Competent
- Proficient
- Advanced practice
- Expert
Levels of Practice

- Novice – a student
- Beginner - an intern or one engaged in a supervised practice setting
- Competent - a dietitian or dietetic technician registered in their first three years of practice
- Proficient - over three years of experience
- Advanced practice – an informatics specialist
- Expert – an informatics leader
Study Endpoints

- Define informatics competencies for the field of nutrition and dietetics
- Determine the assignment of each competency to the appropriate level of practice based on Academy definitions
Item Selection

<table>
<thead>
<tr>
<th>Computer Skills</th>
<th>The proficiency in the use of computer or device hardware and software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informatics Knowledge</td>
<td>The theoretical and conceptual basis of informatics</td>
</tr>
<tr>
<td>Informatics Skills</td>
<td>The use of methods, tools and techniques specific to informatics</td>
</tr>
</tbody>
</table>

- Items culled from literature – biomedical informatics, nursing including TIGER*, pharmacy and other ancillary healthcare professions.
- Items reviewed by Academy Nutrition Informatics Committee Work Group
Computer Skills

More than a device, hardware or software
Seamless Integration

Electronic Health Records

Personal Health Records

Mobile Devices
Computer Skills - Examples

- Communications
  - E-mail
  - Document exchange
- Methods for accessing data and information
- Documentation
- Managing files
- Research
- Project management
Informatics Knowledge - Examples

- Privacy and security
- Use of data for decision making
- Impact of systems on workflow and patients/clients
- Usability of computers and technology
Informatics Skills - Examples

• Evaluation
  – Accuracy of information from electronic sources
  – Impact of electronic systems on practice

• Professional Role
  – Promoting effective use of information technology
  – Working with interdisciplinary teams to include nutrition in electronic systems and applications

• Management
  – Supporting integration of technology and information management into practice
Summary

<table>
<thead>
<tr>
<th></th>
<th>Novice</th>
<th>Beginner</th>
<th>Competent</th>
<th>Proficient</th>
<th>Informatics Specialist</th>
<th>Informatics Expert</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer Skills</td>
<td>32</td>
<td>16</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>58</td>
</tr>
<tr>
<td>Informatics Knowledge</td>
<td>5</td>
<td>7</td>
<td>9</td>
<td>3</td>
<td>14</td>
<td>3</td>
<td>41</td>
</tr>
<tr>
<td>Informatics Skills</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>16</td>
<td>88</td>
<td>5</td>
<td>117</td>
</tr>
<tr>
<td>TOTAL</td>
<td>37</td>
<td>23</td>
<td>25</td>
<td>20</td>
<td>103</td>
<td>8</td>
<td>216</td>
</tr>
</tbody>
</table>

- Competencies by category and level of practice at the completion of the study.
- *Note that lower level competencies apply to higher levels of practice.*
Competencies are Additive

- **Expert**: Blue (Computer Skills) + Red (Informatics Knowledge) + Green (Informatics Skills)
- **Specialist**: Blue (Computer Skills) + Red (Informatics Knowledge) + Green (Informatics Skills)
- **Proficient**: Blue (Computer Skills) + Red (Informatics Knowledge) + Green (Informatics Skills)
- **Competent**: Blue (Computer Skills) + Red (Informatics Knowledge) + Green (Informatics Skills)
- **Beginner**: Blue (Computer Skills) + Red (Informatics Knowledge) + Green (Informatics Skills)
- **Novice**: Blue (Computer Skills) + Red (Informatics Knowledge) + Green (Informatics Skills)
Competencies by Level of Practice
Computer Skills

• **Student** – able to locate nutrition resources on the internet

• **Beginner** – able to use an on-line application to document nutrition care

• **Competent** – able to use electronic systems to measure and report productivity

• **Proficient** – able to use statistical analysis software
Informatics Knowledge

• **Competent** – Supports the development and use of standardized terminology

• **Proficient** – Able to distinguish between unstructured and structured data

• **Specialist** – Able to describe risks and benefits of electronic systems

• **Expert** – Develops new methods of organizing data
What is Structured Data?

- **Unstructured Data**
  - a “blob” of text

- **Structured Data**
  - a spreadsheet or database
Structured Data Entry

- Data within fixed fields in a record or file.

Example:

- Energy Balance
  - Increased energy expenditure
  - Inadequate energy intake
  - Excessive energy intake

- Oral or Nutrition Support Intake
  - Inadequate oral food/beverage intake
  - Excessive oral food/beverage intake
  - Inadequate intake from enteral/parenteral nutrition
  - Excessive intake from enteral/parenteral nutrition
  - Inappropriate infusion of enteral/parenteral nutrition

- Fluid Intake
  - Inadequate fluid intake
  - Excessive fluid intake

- Bioactive Substances
  - Inadequate bioactive substance intake
  - Excessive bioactive substance intake
  - Excessive alcohol intake

- Nutrient
  - Increased nutrient needs (specify below)
  - Malnutrition
  - Inadequate protein-energy intake
  - Decreased nutrient needs (specify below)
  - Imbalance of nutrients

- Fat and Cholesterol
  - Inadequate fat intake

- Intake Plan/Interventions
  - Meal and Snacks
    - General/healthful diet
    - Modify distribution, type, or amount of food and nutrients
    - Specific foods/beverages or groups
  - Enteral and Parenteral Nutrition
    - Initiate EN or PN
    - Modify rate, concentration, composition, or schedule
    - Discontinue EN or PN
    - Insert enteral feeding tube
    - Site care
  - Supplements: Medical Food
    - Commercial beverage
    - Commercial food
    - Modified beverage
    - Modified food
    - Purpose (specify below)
  - Vitamin and Mineral Supplements
    - Multivitamin/mineral
    - Multi-trace elements
    - Vitamin A
    - Vitamin C
    - Vitamin D
    - Vitamin E
    - Vitamin K
    - Thiamin
Informatics Skills

- **Competent** – uses electronic systems for the retrieval, organization and analysis of data
- **Proficient** – participates in the selection process of systems
- **Specialist** – analyzes business processes to best use electronic information work flows
- **Expert** – manages complex projects using information technology
Competency Checklist

You within your organization
Competency Checklist

You outside your organization
Competency Checklist

✓ Technology and systems
  ✓ Can you use the current technology?
  ✓ How does this technology link to other organizations and your patients/clients?

✓ Information management
  ✓ How do you manage data and information within your organization?
  ✓ Are you prepared to share data and information outside of your organization?
  ✓ How does your organization use data and information from outside sources?

✓ Informatics skills
  ✓ Can you represent our profession at the table?

✓ Relationship of nutrition practice to competencies
Where Do You Fit?

Practitioner
• Uses tools
• Gathers data using standards
• Analyzes data for outcomes

Informaticist
• Develops tools
• Creates standards
• Analyzes outcomes of using tools
Transitional Competencies

• Contributing to the informatics activities in your organization
• Seek new methods of communication and sharing data
• Embrace technology
• Evaluate how you manage your own health care data
• Find a NIRD – a nutrition informatics R.D.
Nutrition Informatics Specialists and Experts

R.D.’s dedicated to the field of informatics

- Electronic health records
- Food and nutrition management systems
- Social media
- Informatics education
- Informatics research
Free Informatics Resources

Informatics Skills

Expanding your Informatics Skills & Knowledge Complimentary Resources

The resources listed below were presented in session #165 by Christel Anderson at the Fall 2012 FNCE session

- Assessment of the Value of IT
- Bioinformatics and Genomic Information
- Business-centered Systems
- Data Management and Patient Medical Record
- Emerging and Mobile Technologies
- Ethical Issues in the Use of Health IT
Further Studies Needed

- Competencies for consumer informatics and social media
- Refine competencies for informatics specialists and experts
Informatics Impacts All Areas of Nutrition Practice

Research
- Leveraging digital data for outcomes evaluation

Education
- Translation of Technology To Practice

Community
- School Lunch, Food Safety
- Health Departments, Food Availability

Food & Nutrition Management
- Nutrition Information Systems, Food Purchasing & Distribution

Clinical
- Electronic Health Records

Consultation & Business Practice
- Mobile Monitoring & Consumer Access
Additional Resources

HIMSS Nutrition Informatics Web Page
http://www.himss.org/asp/topics_nutritioninformatics.asp

Academy Nutrition Informatics Blog
http://www.eatright.org/Media/Blog.aspx?id=6442473707&blogid=6442451184

Academy Nutrition Informatics Web Page
http://www.eatright.org/HealthProfessionals/content.aspx?id=6442471521
Save the Date!

Nutrition Informatics Town Hall Series

Meaningful Use in Action – Exploring the Possibilities of Nutrition Informatics
Thursday, April 11, 2013 at 12:00 pm Central/1:00pm Eastern

Presenter: Jan Greer-Carney, MS, MBA, RD, LD
Panelist: Lindsey Hoggle, MS, RD, PMP (Academy Director, Nutrition Informatics)
Registration - https://himss.webex.com/himss/onstage/g.php?t=a&d=922070039
Questions?
Academy Members

All webinar participants will receive their CPEU Certificate within 7 days via e-mail.
Questions: Contact lhoggle@eatright.org

HIMSS Members

To get CPHIMS credits, you can go to the Nutrition Informatics website for the paperwork at
http://www.himss.org/ASP/topics_FocusDynamic.asp?faid=698
Thank You!

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