Health Literacy in the Context of Medication Use

Examining the role of pharmacists and pharmacy tools to support health literacy and the transfer of medication information to acute and chronic disease patients

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Panel of experts and format of presentation

**Speaker 1:** Rebekah Moles, Senior Lecturer *(10 minutes)*: Functional Health Literacy and the Measurement of Doses in Caregivers of Children Aged 5 Years and Under: How to Prevent Medication Errors/Overview of work in relation to health literacy in the context of medication use

**Speaker 2:** Anne Metzger, Assistant Professor University of Cincinnati *(10 minutes)*: Correlation Between Medication Adherence and Health Literacy / Overview of work in relation to health literacy in the context of medication use

**Speaker 3:** Annie Pouliot, Research Facilitator *(10 minutes)*: Health Literacy in the Context of Medication Use or Medication Literacy

**Speaker 4:** Carolyne Dufresne, RN, Lecturer *(10 minutes)*: Patient Education, Health Literacy and Chronic Disease: Lessons Learned from A Multicultural Community in Quebec, Canada/Overview of work in relation to health literacy in the context of chronic disease

Questions and Debate for the panel of experts
Affiliations - Disclosure
Beyond The Development and Validation of Pictograms to Communicate Drug Information: Application of Tools and Lessons Learned from the Pictogram Project at the International Pharmaceutical Federation
“A Picture is Worth a Thousand Words.”

This quote is a Chinese Proverb, fabricated by an advertising executive in an attempt to compel users to buy baking soda. The executive assumed that consumers would be compelled to buy a product that had the weight of a Chinese philosophy behind it.

One Picture is Worth Ten Thousand Words.
http://www2.cs.uregina.ca/~hepting/research/web/words/history.html
Photos, medication sachets for use in humanitarian aid missions - Kabul 2004
Method used for the validation of the pictograms by the FIP
Pictogram and Infographic Development

1. Semiotic analysis of key counselling points

2. Pictogram design

3. Initial Testing
   • Transparency (guessability) & Translucency

4. Recall
   • Transparency

5. Pictogram redesign
“The study of how signs are perceived and how they should be designed.”

Pictogram and Infographic Development

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Pictogram and Infographic Development

1. Semiotic analysis of key counselling points

- Internet Semiotic Analysis
- Image search (20+)
- Image element analysis
- Extract key graphic elements

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Internet Semiotic Analysis

Image search (20+)

Image element analysis

Extract key graphic elements
Pictogram and Infographic Development

1. Semiotic analysis of key counselling points

Preferred Image Semiotic Analysis

Image proposal

Preferred image element analysis

Extract key graphic elements
Pictogram and Infographic Development

2. Pictogram Design (Anaphylaxis)

- Use of extracted graphic elements
  - Open mouth 0.8
  - Worried eyebrows 0.6
  - Closes eyes 0.6
  - Leaning forward 0.55
  - Bags under eyes 0.55
  - “Tight” eyes 0.5

Pictogram and Infographic Development

3. Initial testing

- **Comprehension test:** ISO standards 9186

  - *Transparency (guessability):* Ability to guess what an image means when significance is unknown

- **Translucency:** The relationship between the image and its meaning, measured by the subject’s perception of the image.
LESSONS LEARNED
Pictogram and Infographic Development – General rules

- Provide context to pictogram
- Avoid images that are too abstract
- Use recognizable elements
- Use symbols cautiously
- Using text if needed
- Uncluttering
Pictogram Clarity: Context
Pictogram Clarity: Abstract
Pictogram Clarity: Symbols
Pictogram Clarity: Symbols
Uncluttering Pictograms

- Unnecessary elements
- Unnecessary details
- Colour
Population specific

- Plate and fork
- Plate with food
- Person with a thermometer
- Person with a cold
- Person with a runny nose
- Person with a cough
- Person with a fever
- Person with a headache
- Person with a sore throat
- Person with a stomach ache
General observations on the development and validation of the pictograms

- Pictograms depicting basic day-to-day medication usage are much easier to comprehend.
- Pictograms depicting side effects, time intervals, complex instructions or abstractions are more challenging.
Current Projects

- Usability testing of software to relay pharmaceutical information using pictograms to overcome language barriers and poor health literacy
- Medication Safety pictograms for secure medication handling by healthcare workers
- Validation of an illustrative multimedia information tool for pediatric patients using patient-controlled analgesia
- Evaluation and validation of pictograms to support eczema counselling - RCT
- Recall of Sickle Cell disease pictograms used in the Sickle Cell Action Plan and Prescription for children
- Evaluation and validation of medication pictogram labels, storyboards and Calendars
Infographics: Anaphylaxis Action Plan & Prescription

How to use Auto-Injectors:

1. **EpiPen®**
   - Hold firmly with orange tip pointing downward.
   - Remove blue safety cap by pulling straight up. Do not bend or twist.

2. **Allerject™**
   - Swing and push orange tip firmly into mid-outer thigh until you hear a “click.”
   - Hold on thigh for several seconds.

- Pull off RED safety guard.
- To reduce the chance of an accidental injection, do not touch the black base of the auto injector, which is where the needle comes out. If an accidental injection happens, get medical help immediately.
- **NOTE:** The safety guard is meant to be tight. Pull firmly to remove.

- Pull the outer case, remove the needle, and inject as directed.
- Replace the outer case and take your used Allerject™ with you to your pharmacist or physician for proper disposal and replacement.

Avoiding Allergens:

- Food: Avoid allergen-containing foods. Read food labels. Bring own food to school. Avoid food swapping.
- Insects: Cover up as much as possible. Wear shoes when outdoors. Avoid scents.
- Medication: Let doctors, pharmacists, dentists and nurses know of any medication allergies. Wear medic-alert bracelet.

Controlling your Anaphylaxis:

1. Avoid allergens.
2. Know how and when to use your epinephrine auto-injector.
3. Ensure you/your child always has an epinephrine auto-injector immediately available.
4. Ensure your auto-injector is not expired. Do not store in very hot or very cold places.
5. If you are a long distance from a hospital have a backup supply of an epinephrine auto-injector.
6. Wear a Medic Alert bracelet that tells what allergens you are anaphylactic to.

Note: Children with asthma are at higher risk for severe anaphylaxis.
PICTO-RX

- FREE software
- Creates pictogram based:
  - Medication labels
  - Information sheets
  - medication calendars

http://www.fip.org/pictograms
Acetaminophen 160 mg/5 mL for Children 16-21.9 kg

Dosage/Preparation:

- Afebrile:
- Headache
- Muscle pain
- Backache

Dosage:

16-21.9 kg

7.5 mL

7.5

Schedule:

- Morning
- Afternoon
- Evening

Precautions:

- Mixing

Notes:

- No precautions

Side Effects:

- None

Remarks:

- No remarks
Example - Medication Storyboard

**Indication:**

- Personalized Indication

**Dose / Route:**

- 1 tablet

**Frequency:**

- Morning
- Noon
- Night

**Precaution:**

- Do not take with alcohol or drug

**Medication:**

- **Medication Name:** Acetaminophen 50mg
- **Date:** 2015/08/18
- **Quantity:** 90 tablets
- **Refills:** 1
- **Prescriber Name:** Annie
- **Pharmacy Info:** CHEO Pharmacy

**Side Effects:**

- Rash

**Comments:**

- Do not exceed 8 tablets daily
Panel expert #1

Rebekah Moles
Panel expert #2
Anne Metzger
Panel expert #3

Annie Pouliot
Panel expert #4

Carolyne Dufresne
Q & D

Let’s debate!
Panel question #1?

Are the current tools used to measure health literacy convenient for pharmacists in order to detect patients with low medication literacy in their daily practice? Which tools do you use in practice to identify patients with low medication literacy?
Annie: Universal Precautions Approach

- Ensure that all discussions and materials are simple enough for all patients to understand
- Focus on patients’ experience with disease, desired behavior, and useful day-to-day, drug-related information
- Recognize the individual health literacy needs of patients and families and tailor an approach to meet their specific needs
  - **Very challenging for pharmacists in our hospital to use a test when counselling patients.**
  - **In research, the Newest Vital Sign and REALM-Teen, however, are not validated in French.**
Regis’ experience in community pharmacy

• Group at risk:
  – People over the age of 65
  – Recent immigrants
  – People with low income
  – People who have low education levels
  – People who have low English or French proficiency

• Signs to look for from a healthcare provider standpoint:
  – Those who have trouble filling out forms or provide excuses for not filling out forms
  – Those who appointments and do not follow-up
  – Those who describe medication by appearance and not by the name or what it is used for
  – Those who smile and nod a lot without asking questions
  – Those who cannot respond to open ended questions
Identifying ‘at risk’ patients during medication reconciliation in hospital

- Difficulty speaking English
- Living outside of the Ottawa area
- Have no drug coverage or provincial drug coverage (RAMQ or ODB)
- Show potential for non-adherence based on interviews
- Cannot provide the name of the medication taken
- Discrepancies b/w patient interview and pharmacy record
- Have complex medication regimens
Panel question #2

What are the roles of the different health care professionals when it comes to health education in a multicultural context and providing counselling to patients with different health literacy levels?
Panel question #3

Relationship between medication adherence and health literacy: what are the issues and next steps?
Panel question #4

What tools are being used at your centers to provide drug information counselling and ensure a universal approach to health literacy?
Literacy-Sensitive
Tools and Interventions

• Use plain language and avoid jargon
• Focus on actions rather than information
• **Ask Me 3 / It’s Safe to Ask**
• Combination of oral, written, and validated graphics
• Solicit questions
• **Teach back method**
• Product demonstrations
• Brown bag medication review