Unstructured to Structured Content

A Two-Pronged Approach

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Healthwise, Inc.
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• Nonprofit established 1975
• Mission: *Help people make better health decisions*
• Produces evidence-based consumer health information
  • Web-based health topics
  • Patient instruction handouts
  • Symptom checker
  • Decision aids
  • Shared decision making campaigns
Who I Am

• Content Technical Manager
• Former content developer
• Conduct training
• Work with engineering to:
  • Develop and implement new tools
  • Establish best practices
  • Troubleshoot problems
  • Improve process efficiency
The Challenge

Convert ~40,000 “pages” of digital consumer health information to structured content
The Conversion

• Large documents → Small, focused chunks of content
• Repeated language → Language reuse across products
• Multiple voices → Consistent voice across products
• Relatively “loose” formats → “Tighter” format options
• Some metadata → Additional metadata
• Well-defined roles → Overlapping roles
The Tool

- DITA – Darwin Information-Typing Architecture
- XML standard
- Allows specialization of topic type and tagging elements
- Allows constraints on tagging element choices
- Facilitates multiple reuse mechanisms
- Accommodates accessibility
<h1>Specialized topic type</h1>

- <strong>Metadata</strong> - allows constraining
- <strong>Specialized elements</strong> - provide semantic meaning
- <strong>Constraints</strong>

1. **1st slide title** (required)
   - Replace camera image here with 1st slide image here (required) AND add additional info.
   - We can add:
     - A bulleted list.
2. **Second slide title**
   - Additional information is placed here. In this location, we can emphasize a word or a long phrase, or we can indicate a genus/species of an organism, such as *Escherichia coli*, or we can highlight a change.
   - We can also constrain out element tags we don’t want content developers to use, such as `<fig>`, `<filepath>`, `<hazardstatement>`, `<msgblock>`, `<table>`, etc., all of which are allowed in a nonspecialized topic in this location.
3. **3rd slide title** (required)
   - Result: Slideshow result(s) here (optional)
The Approach

Path A: Curated content

Path B: “Bursting” content

Small focused chunks of consumer health information (DITA topics)
Path A: Curated Content

- Find best content
- Manually convert into XML standard markup (DITA)
- Identify reuse opportunities
- Manually enter metadata
- Follow guidelines established by Editorial Guidelines Group (EGG) and the technical team
- Provide feedback about what works and what doesn’t
Selected essential “aspects” of a condition

- What is heart failure?
- What course does it take?
- What causes heart failure?
- How is heart failure treated?
- How is heart failure diagnosed?
- What can you do at home?
- When should you call a doctor?
- What are the symptoms of heart failure?

Pulled content from many documents

- Heart Failure
- Heart Failure Stages
- Heart Failure Types
- Heart Failure Complications
- Heart Failure: Easier Breathing
- Heart Failure: Roles of Different Doctors
- Heart Failure: Eating a Healthy Diet
- Heart Failure: Disease Management Programs
- Heart Failure: Exercise
Heart Failure

What is heart failure?

Heart failure means that your heart muscle doesn’t pump as much blood as your body needs. Failure doesn’t mean that your heart has stopped. It means that your heart is not pumping as well as it should.

Your heart can’t pump well, your body tries to make up for it. To do that:

- Your body holds on to salt and water. This increases the amount of blood in your bloodstream.
- Your heart beats faster.
- Your heart might get bigger and stronger.

Your body has an amazing ability to make up for heart failure. It may do such a good job that you don’t know you have a disease. But at some point, your heart and body will no longer be able to keep up. Then fluid starts to build up in your lungs and other parts of your body.

This fluid build-up is called congestion. It’s why some doctors call the disease congestive heart failure.

How is heart failure treated?

Heart failure is treated mainly with medicine and with steps you take to make lifestyle changes and check your symptoms.

- Treatment can slow the disease and help you feel better and live longer.
- You’ll probably take several medicines.
- You’ll take steps to care for yourself at home. You’ll watch for changes in your symptoms. You may need to make lifestyle changes, such as limiting sodium, getting regular exercise, not smoking, and eating healthy foods.
- You might attend cardiac rehabilitation (also called cardiac rehab) to get education and support that help you make lifestyle changes and stay as healthy as possible.
- You may get a heart device. A pacemaker helps your heart pump blood. An ICD can stop abnormal heart rhythms.
Path B: Bursted Content

• Selected existing documents with rigid outlines
• One document section = One DITA topic
• Metadata applied programmatically
  • Some metadata (medical reviewer names) obtained from the document and applied to all topics from that document
  • Some metadata applied to individual sections (= topics)
• Some prep work and cleanup required
Calcium (Ca) in Blood

- Test Overview
- Why It Is Done
- How To Prepare
- How It Feels
- Risks
- Results
- What Affects the Test
- What To Think About

Topics created by “bursting”

- Calcium (Ca) in blood test: Overview
- Why is a calcium (Ca) in blood test done?
- How do you prepare for a calcium (Ca) in blood test?
- How is blood taken from a vein? (46)
- How does having blood drawn from a vein feel? (100)
- What are the risks of a blood draw from a vein? (80)
- What results are possible from a calcium (Ca) in blood test?
- What affects calcium (Ca) in blood test results?
Calcium (Ca) in Blood
[hw3833] MedicalTest <en-us>

Test Overview
[hw3836]
A test for calcium in the blood checks the calcium level in the body that is not stored in the bones. Calcium is the most common mineral in the body and one of the most important. The body needs it to build and fix bones and teeth, help nerves work, make muscles squeeze together, help blood clot, and help the heart to work. Almost all of the calcium in the body is stored in bone.

Normally the level of calcium in the blood is carefully controlled. When blood calcium levels get low (hypocalcemia), the bones release calcium to bring it back to a good blood level. When blood calcium levels get high (hypercalcemia), the extra calcium is stored in the bones or passed out of the body in urine and stool. The amount of calcium in the body depends on the amount of:

- Calcium you get in your food.
- Calcium and vitamin D in your intestines absorb.
- Phosphates in the body.
- Certain hormones, including parathyroid hormone, calcitonin, and estrogen in the body.

Vitamin D and these hormones help control the amount of calcium in the body. They also control the amount of calcium you absorb from food and the amount passed from the body in urine. The blood levels of phosphates are closely linked to calcium levels and they work in opposite ways: As blood calcium levels get high, phosphate levels get low, and the opposite is also true.

It is important to get the right amount of calcium in your food because the body loses calcium every day. Foods rich in calcium include dairy products (milk, cheese), eggs, fish, green vegetables, and fruit. Most people who have low or high levels of calcium do not have any symptoms. Calcium levels need to be very high or low to cause symptoms.

Why It Is Done
[hw3946]
A blood calcium test may be done:

- To check for problems with the parathyroid glands or kidneys, certain types of

Document to DITA topics
Over every mountain there is a path, although it may not be seen from the valley.

- Theodore Roethke
Questions?