



A Presentation System for Just-in-time Learning in Radiology

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"Just-in-Time" Learning

- Traditional CME approaches may have little impact on the quality of medical care
- Educational theory and empirical evidence support "situated learning" to integrate learning into the setting in which the knowledge is used.
- RIS and PACS can embed learning and self-assessment into the radiologist's daily workflow.
- Radiologists have indicated strong interest in integrating learning and decision support into their clinical workflow.

Introducing TEMPO

- Brief educational modules
 - Users can select learning modules based on the clinical context, such as the imaging procedure being viewed.
- Targeted to
 - Imaging procedure and body part(s) being viewed.
 - Radiologist's educational needs, preferences, and level of expertise.
- Elicits the user's responses to self-assessment questions.



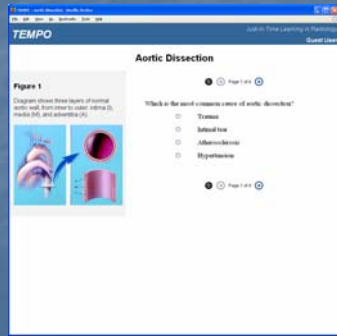
The radiology workstation displays images of a 60-year-old man who presented with sudden back pain, radiating to the lower extremities. CT images show a type-B aortic dissection. The "TEMPO Learning" hyperlink activates the just-in-time learning system.



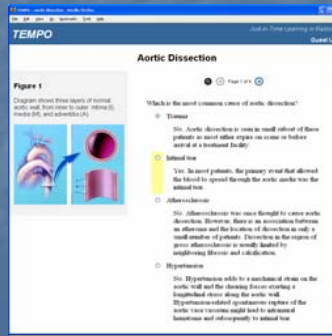
TEMPO lists the six most pertinent learning modules in descending order by relevance to the case being viewed on the radiology workstation, based on age, sex, imaging modality, body part (or organ system), and clinical indicators. The system lists learning modules that have not yet been completed by the user.



Start page for each learning module includes the learning objectives, number of CME credits, and reference to the journal article on which the module is based.



First page of learning module on aortic dissection. A multiple-choice test item is presented. The user can view the remainder of the module without answering the question, but will not be able to view the answers until he or she does so.



After the user chooses a response to a multiple-choice item, TEMPO displays the correct response (indicated by the shaded bar), the user's choice (the filled radio button), and an explanation for the response.



Page 2 of the "Aortic Dissection" learning module. When the user clicks on the hyperlink for a figure or a reference, it appears in the sidebar on the left.

Materials



- 36 learning modules derived from high-quality, peer-reviewed journal articles.
- Indexed by:
 - topic (e.g., gastrointestinal system)
 - imaging modality (e.g., CT)
 - journal article's Medical Subject Heading (MeSH) codes

Discussion

Web-based information systems can be integrated with PACS to deliver context-sensitive educational modules that create a "just-in-time" learning environment.

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