

Development of PDA Version Cancer Management Guidelines

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In partial fulfillment of the requirements of the Master of Health Informatics Program,
Dalhousie University

Report of Internship for the period May 9th – September 2nd, 2005

Date Submitted: Oct. 3rd, 2005

Acknowledgement and Endorsement

This report has been written by Manhui Li for fulfilling the requirement of the Master of Health Information program, Dalhousie University and has not received any previous academic credit at this or any other institution.

I would like to thank Jill Patrella, Larry Broadfield for offering the great opportunity and giving guidance and supervision, Grace Paterson for her excellent research resources, David Zitner for his evaluation support, and Mike Shepherd for his research suggestions.

Manhui Li

Signature: _____

Date: _____

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Executive Summary

The internship was performed in Cancer Care Nova Scotia (CCNS) from May 9th to September 2nd, 2005. The objective of the internship work was to convert the cancer management guidelines developed by Cancer Site Teams of CCNS into PDA document format. The existing guidelines in CCNS before were hard copy and electronic version such as Word documents and PDF documents, CCNS recognized that there were certain requirements for the PDA version guidelines by health professionals in Nova Scotia.

The author was mainly responsible for providing PDA technology consulting, building prototypes of PDA version guidelines including “Guidelines for the Management of Lung Cancer” and “Guidelines for the Management of Cancer-Related Pain in Adults”. Also, the author assisted CCNS to evaluate the usefulness of PDA version guidelines, and finally gave the recommendations and support for future development by CCNS.

This internship opportunity allowed the author utilized her knowledge and experience of health informatics, and there were many challenges during this process. The report will discuss the problems that the author encountered and also gave the solutions to solve those problems. Finally, the report will indicate the recommendations to achieve more successful PDA technology adoption in health care.

1. Introduction

This content of this internship was to develop PDA version cancer care management guidelines for Cancer Care Nova Scotia (CCNS). Developing cancer management guidelines is the one of the most important work of CCNS, and CCNS recognized that there were the requirements for the PDA version guidelines besides the existing hard copy and electronic version guidelines. To convert the current hard copy and electronic guidelines from Word, PDF format into PDA document format, the author should provide a complete PDA conversion solution, give PDA file format recommendations and then develop the prototypes of PDA version guidelines. Finally, the author was also responsible for developing an evaluation system to assess the prototype guideline and collecting feedback.

2. Description of the organization

Cancer Care Nova Scotia, established in 1998, is a program of Nova Scotia Department of Health. In order to strengthen the cancer system in Nova Scotia, CCNS is partnering with the Canadian Cancer society and other organizations such as Medical Society of Nova Scotia ^[1]. Working with the province's district health authorities and other experts in the field of cancer and health, its programs address prevention, screening, education, treatment, follow-up care and palliation ^[1].

CCNS has adopted the Cancer Site Team (CST) approach for cancer care. There are 13 Cancer Site Teams currently (e.g. Breast, Gastrointestinal, Genitourinary) ^[2]. Most of those teams are multidisciplinary teams including the member of professionals in cancer cure, systemic therapy,

supportive care, patient information. Each team meets regularly to review clinical cases, clinical trial proposals, and also develops clinical practice guidelines for aspects of cancer care in Nova Scotia ^[2].

3. Cancer Management Guidelines

Cancer management guidelines are great references for physicians, other health professionals, as well as patients and family. In order to provide the best practice solution for the potential users, guidelines should combine the research evidence, and practical knowledge of the health professionals in Nova Scotia region ^[2]. Most importantly, the guideline should carry comprehensive knowledge in a simple explanation way in terms of delivery. Guideline should also help health professionals to treat patient and provide recommendations best for the patient individually, instead of to “treat tumors” ^[2]. Patient centered decision is extremely important and works effectively to build the patient-doctor trust as well.

Multidisciplinary cancer site team members are devoted to develop cancer management guidelines over time, to make sure the knowledge in the guideline has be most consensus and the guidelines are easy to use ^[2]. Before guidelines are published they are sent to the health professionals in Nova Scotia and other Maritime province to review. The current approved disease management guidelines include ^[2]:

- Position Statement on the Early Detection of Prostate Cancer
- Guidelines for the Management of Kidney Cancer
- Guidelines for the Management of Adult Testicular Cancer
- Guidelines for the Management of Acute Myelogenous Leukemia in Adults

- Guidelines for the Management of Lung Cancer

“Guidelines for the Management of Lung Cancer” is the latest one, which was published in 2005. Under the review this Guideline, about one-third of reviewers pointed out they would like to have the opportunity to access the guidelines in their PDA.

4. The relationship with Health Informatics

As been well known, the traditional well accepted medical references are all paper-based. With fast developing of Information Technology, especially after extensive using of internet, more and more electronic medical information is available for physicians, health professionals, medical students, patients, their family and other people who are interested. The most common formats of those electronic medical materials are in PDF, Word format and some in web pages. To use this electronic information, users need to have access of a PC or work station. It may be a possible solution for physicians who use this information in their office or at home. However, physicians do not always work in one place in their daily practices, where they may not always have access to computer or Internet. Compared with computer, PDA (Personal Digital Assistant), with the features of light and small, is very good for physician’s practice in flexible health care environment. PDA could be a “pocket” tool to improve the availability and accessibility of medical information.

Using of PDA by physicians is on the upswing^[3]. From the CMA’s 2003 Physician Resource Questionnaire (PRQ), about one third of MDs in Canada are now using PDA in practices increasing from 19 percent recorded in 2001, and more than half of MDs under age 35 (53

percent) are now using PDA ^[4]. In United States, more than half the doctors use PDA in 2003, and among residents and students the percentage is even higher ^[5].

Using of PDA is qualitatively different from the use of a PC-based tool, as the handheld does not supplant, but rather supplement, the physician's skills ^[6]. A small US study by Rich Dr. David of Children's Hospital in Columbus has determined that these small hand-held devices can help improve the delivery of medical care, almost half (47 percent) of respondents reported that tracking patients on their PDA was more useful than existing methods ^[7]. By providing the up-to-date best evidences for physicians to make decisions, more than 85 percent of the Skyscape 2003 survey respondents pointed to PDA as helping reduce medical errors, with more than 50 percent of doctors indicating PDA use reduce their medical errors by more than 4-5 percent ^[5]. Moreover, almost 20 percent of respondents concluded that PDA use enables them to treat at least three more patients a day, with another 20 percent of respondents concluding that they can treat 1 – 2 additional patients per day ^[5].

The available PDA medical material mainly includes ^[8]:

- Clinical general reference
- Drug reference and drug interaction guide
- Medical calculator
- Record tracking database and research database
- Medical Journalism
- Textbook

It is also indicated that about 72 percent of doctors reported that they rely on their PDA for treatment purposes—primarily using it for drug references, clinical references, drug interaction guides or hospital treatment guidelines ^[5]. Obviously, PDA version cancer management guidelines would definitely help the physician and other health professionals deliver better cancer care by giving an instant access to reference.

5. Work performed at the organization

Author was working to develop PDA version guideline for CCNS during this summer and her job included:

- Offering a complete solution for PDA version cancer management guidelines conversion;
- Developing the prototype PDA version cancer management guidelines – “Guidelines for the Management of Lung Cancer” and “Guidelines for the Management of Cancer Related Pain in Adults (draft)”;
- Building the evaluation system and assessing cancer management guidelines; and,
- Offering recommendations and consultant for further development.

5.1 Problems identified and related solutions

5.1.1 PDA Background and User Fact

PDA – Personal Digital Assistant has evolved 3 decades from 1970s ^[9], and there are many types of PDAs based on different operating systems, such as Palm OS PDA, Pocket PC, Window CE handheld PC, Symbian, SmartPhone and so on ^[10]. According to the statistics

report of IDC, Palm OS PDA is dominant about 72 percent of the PDA worldwide market ^[10], while Pocket PC is getting more common after entering the market. Pocket PC vendors include Asus, Casio, Dell, Gateway, Hewlett-Packard, Toshiba, and ViewSonic, and the majority of Palm OS PDA models in the U.S. come from Sony and Palm/Handspring ^[10].

Before starting to work on the solution, it is extremely important to understand the needs of the main users - physicians. In what proportion physicians in Nova Scotia are holding PDA, and what types of PDA they are using are the key questions. By consulting Wes Robertson, chair of Palm Committee, Faculty of Medicine, Dalhousie University, and other key people (Jim Thompson, Steve Anderson), there was still no clear answer about how many physicians are using PDA in Nova Scotia. But among the physicians who are using PDA, probably about over 75 percent are using Palm OS while the rest are using Pocket PC mainly, which has changed from 1999 when at least 90 percent of physicians were having Palm OS devices. Definitely, more and more users are using Pocket PC with the low-price wireless-capable models and multiple tasks features.

Since the majority physicians in Nova Scotia are mainly using either Palm OS PDA or Pocket PC, it is clearly that the PDA version cancer management guidelines should at least cover those two main types of users. It has got the consensus of CCNS to develop the prototype basically for Palm OS PDA and Pocket PC during the first phase.

5.1.2 Complete solution for PDA document format

There are a lot of PDA document formats existing and most of them are related to certain eBook Readers developed by different vendors. Most eBook Readers also support several

major types of PDA (such as Palm OS PDA, Pocket PC and so on) by providing separate version of software for each type of device based on same eBook document format. Therefore, finding the most compatible eBook Reader is the core question during the whole project.



Moreover, in disease management guidelines, decision tree is the most common way to represent knowledge effectively. The cancer management guidelines in CCNS also adopt this method from the “Guidelines for the Management of Lung Cancer”, which gives the overall and precise pictures of the treatment flow and tumour illustrations by each cancer stage. Large table is another common method to interpret huge amount of information in an organized format. It is clear that the eBook document format should support the image display and table as well.

In order to build a well-organized navigation network, “hyperlink” like cross-reference in one guideline or from one to other guidelines will also be concerned. Such as connecting “Guidelines for the Management of Lung Cancer with Management of Cancer Pain”, it will benefit users greatly by improving “in-time-manner” accessibility to more related references effectively.

Regarding the basic requirements for eBook format, the author reviewed all current major PDA eBook Readers and analyzed functions and features of each reader (Refer to Table 1 ^{[11][12]}).

After the comparison of popular eBook format, the author believes “Mobipocket Reader” as the best solution. Mobipocket Reader is one of the best cross platform PDA reader, which can work on Palm OS, Pocket PC, Windows CE, Smart Phone, Psion and Symbian devices. The Mobipocket eBook is converted from HTML file originally, so it inherits the characters of

HTML, such as image, table, hypertext link and framework and so on. All those features give the best support for the guideline development. Although Mobipocket Reader is a commercial product charging \$19.95, it also provides a very satisfied free version with all the basic functions, which is enough for basic guideline reference using.

Format	Advantages	Disadvantages	Navigation	Images	Reader Software	Platforms	Commercial
DOC format (PalmDOC or AportisDOC)	Best Cross-platform compatibility Can be read on most Palm and Pocket PC	No compression, need more storage place than other format	None	No	Many	Palm OS, Pocket PC	No
HTML	Easy to use, customizable, can be read on anything with a browser	Less Organization of a lot of files, no compression	Hypertext links	No		Palm OS, Pocket PC	No
Adobe Format	Cross-platform compatibility, printable, easy conversion	Hard to adjust complicated document layout	Library, Table of contents, Chapter links, bookmarkable	Yes		Palm OS, Pocket PC	No
Microsoft Reader format	ClearType Display Technology, bookmarks and annotations	Only work on Microsoft devices	Library, Table of contents, Chapter links, bookmarkable	Yes		Pocket PC	No
Mobipocket Format	Can be used on any PDA, table display	No scrolling while turning page	Library, Table of contents, Hypertext links, bookmarkable	Yes		Palm OS, Pocket PC, indows CE, Smart Phone, Symbian, Psion	Yes, but with free version with limited function
Palmreader Format (Peanut Format)	Great eBooks for PDA, comfortable reading environment	No hypertext links, no table display	Library, Table of contents, Chapter links, bookmarkable	Yes		Palm OS, Pocket PC, Windows CE, Symbian	Yes, but with free version with limited function
Plucker format	Open source software, easy navigation	Need two different software to work on Palm or Pocket PC, not satisfied technical support	Library Hypertext links, bookmarkable	Yes		Palm OS	No
					Vade Mecum	Pocket PC	No
Isilo format	High text compression, table display, high quality image	Free reader doesn't support image, table, hypertext links	Library Hypertext links	Yes		Palm OS, Pocket PC, Windows CE, Smart Phone, Symbian	Yes, with free version with very limited function

5.1.3 Display Large Content on Small Screen of PDA

In terms of screen size, most Pocket PCs now support QVGA, or 240 x 320 resolution. Windows Mobile 2003 SE also supports full VGA resolutions (480 x 640), as well as square 240 x 240 and 480 x 480 resolutions. Palms before PalmOS 5 generally supported square 160 x 160 resolution, but that has gone up to 320 x 320 for the Tungsten E ^[13]. To fit most possible PDA devices that our readers may use, the author designed two versions for each clinical management guideline – graphic version and text version. Graphic version is designed for the device with resolution of 240 * 320 and up (including Pocket PC, Palm and Windows Mobile), carrying the most important portion of guidelines – decision trees – in graphics, and some illustration as well. On the contrary, the palm with 160 * 160 resolution cannot support high quality images required by decision trees and illustrations, so that the text version is designed for those devices instead of the graphic version. The notion of the text version uses text to replace every decision step and hyperlinks to navigate through decision tree.

Palm OS PDA:	
1: Before PalmOS 5	
Resolution:	160 * 160
Screen Display:	Black and White
2: After PalmOS 5	
Resolution:	320 * 320 or Up
Screen Display:	Color
Pocket PC:	
Resolution:	240 * 320
Screen Display:	Color

Table 2 is the display characters of basic Palm OS PDA and Pocket PC

Following is an example of decision tree.

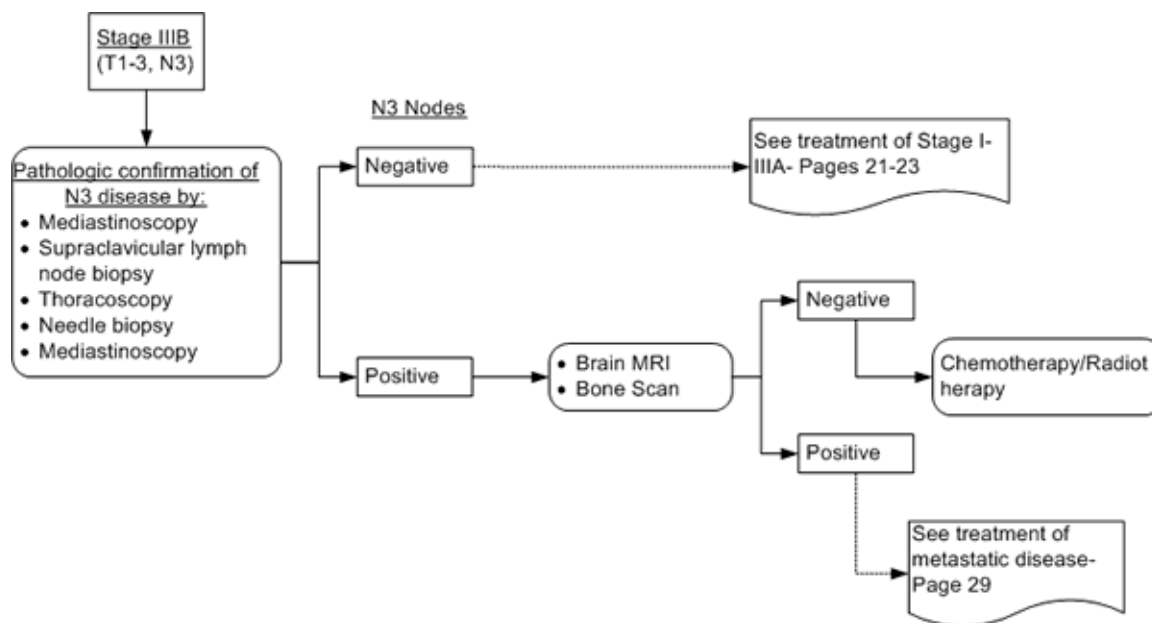


Figure 1. Treatment of Non-Small Cell Lung Cancer - Clinical Stage IIIB (T1-3, N3)^[14]

Graphic version

The sample decision tree is a simple example in “Guidelines for the management of Lung Cancer”, and many others are more complicated than this one. Most decision trees are huge and hardly fit in one small PDA screen display. Obviously, breaking down the decision tree is a straightforward idea. If the decision tree is broken into several pieces, every piece of information should be organized logically, not just simply put together. “Hyperlink” is an excellent method to link each piece together to integrate the decision tree again.

In the example, this decision tree will be broken down into two screen display :

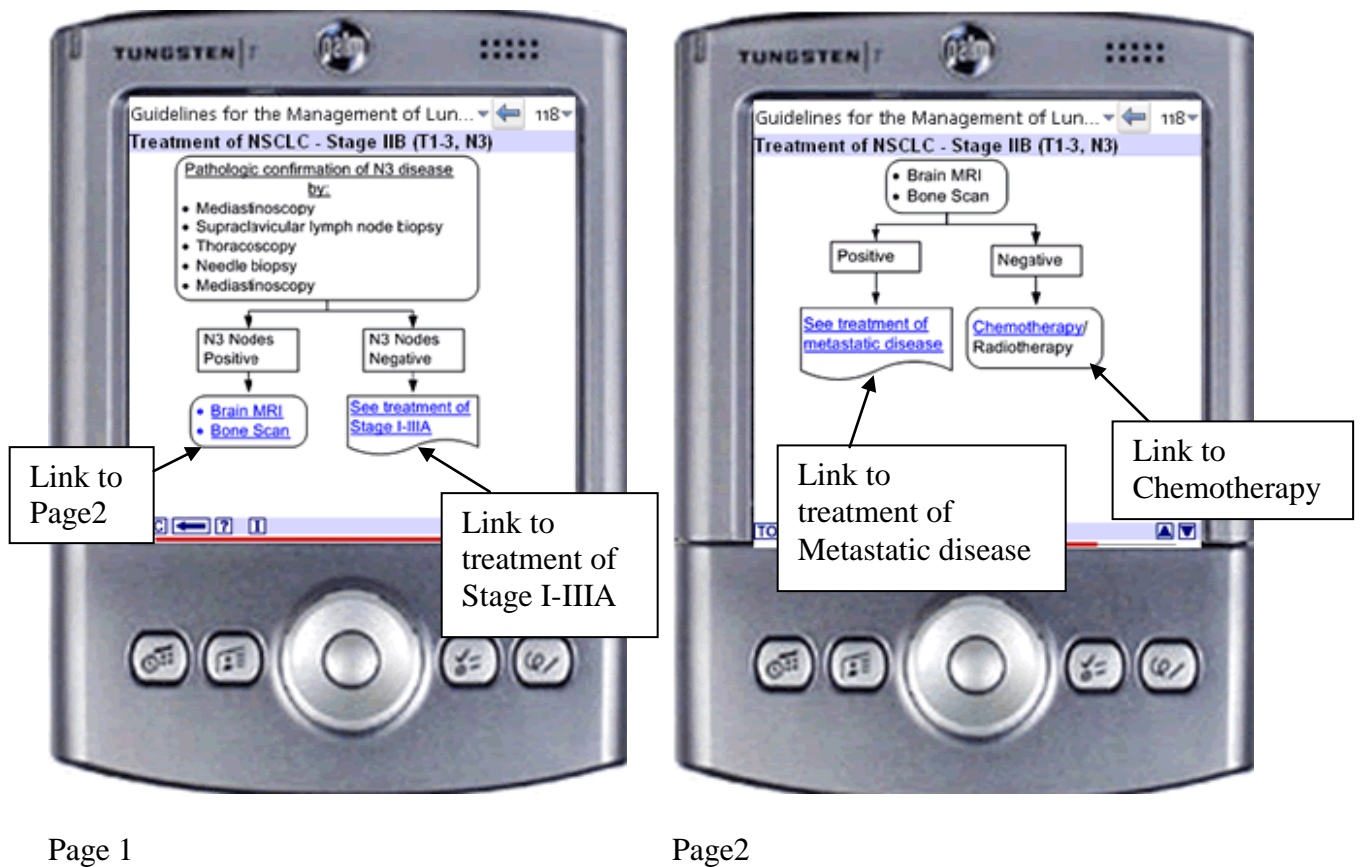


Figure 2. Decision tree in Graphic Version PDA version Guideline

Text version

In text version, information in the decision tree is simply represented by text. By using hypertext linking to the following steps, it is easy to break the decision tree down into small PDA screen display. Compared with the graphic version, there are more steps to break down, and it is recommended to display the current decision status as step index at each screen, in order to help user have better understanding of context ^[15].

In text version, the decision tree will be broken down as:

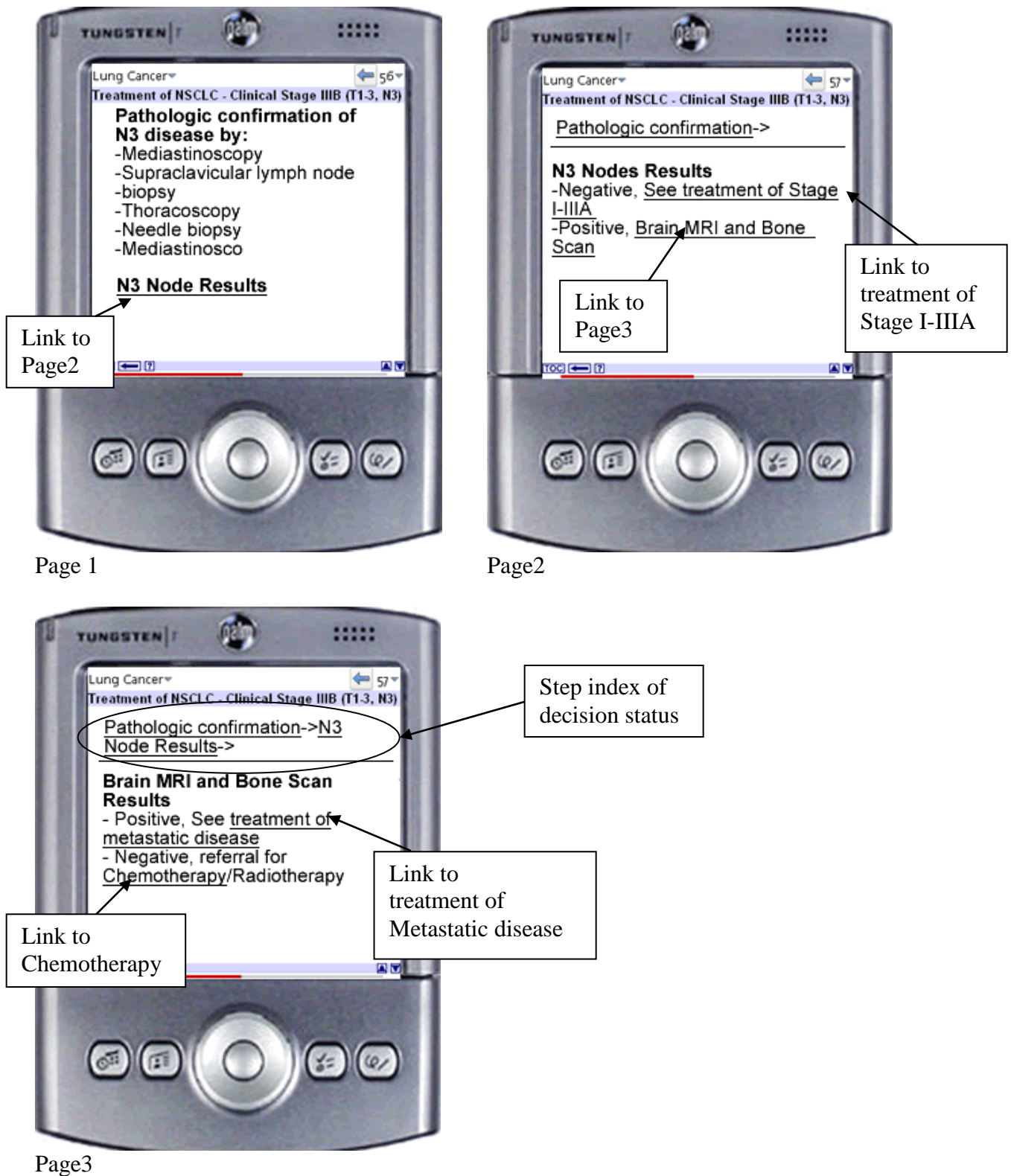


Figure 3. Decision tree in Graphic Version PDA version Guideline

Large Table display

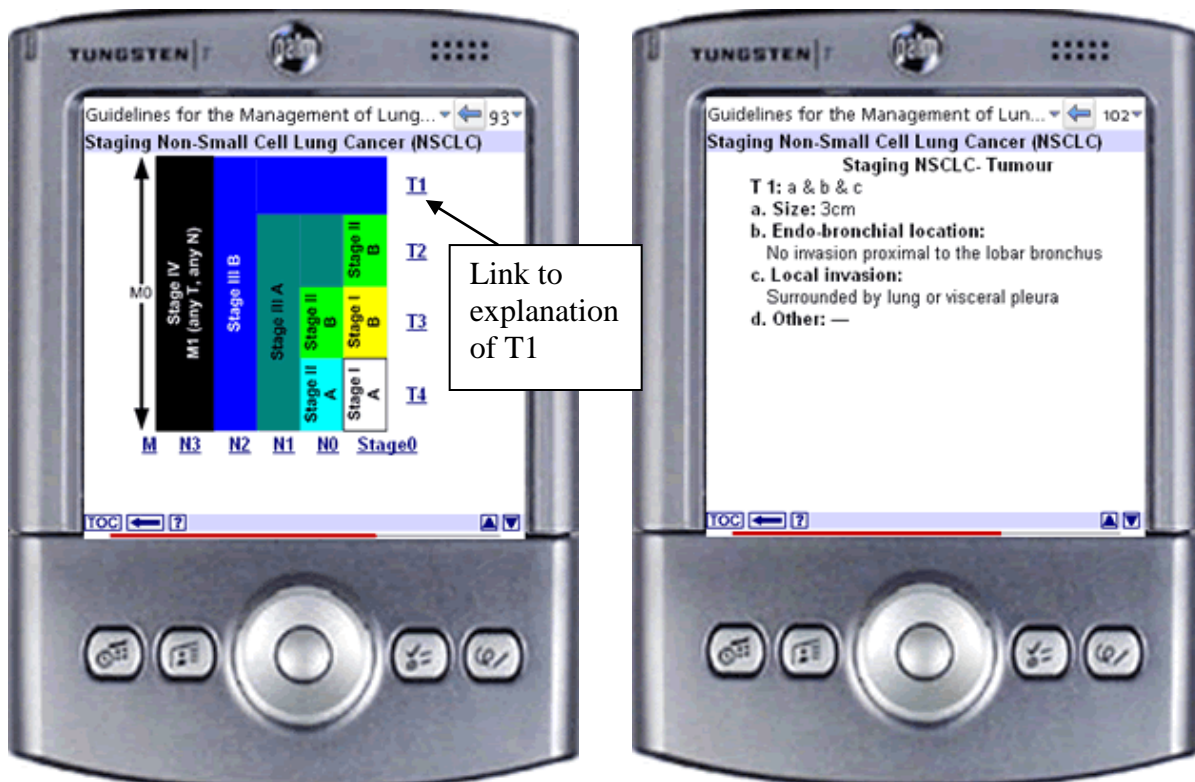
In cancer management guidelines, large table is often used to interpret the complicated medical knowledge. In PDA, it is another challenge to convert the large table into small screen display. To solve the problem, the author need to find the core terms of each table, and put those information in the first screen, and then the explanation of each terms in the following screen. Also, hypertext technology is used here to connect the explanation information with the first screen. The example is a lung cancer staging table including the explanation of T (Tumour), N (Lymph Node), and M (Metastasis) in each cancer stage.

Figure 3.1 TNM Staging of Lung Cancer

		Primary Tumour (T)					
		Criteria	a. Size	b. Endo-bronchial location	c. Local Invasion	d. Other	
Stage IV M1 (any T, any N)	Stage III B	T4 (a & c) or d	any	—	Mediastinum / trachea / heart / great vessels / esophagus / vertebral body / carina	Malignant pleural/pericardial effusion or satellite tumour nodule(s) within the ipsilateral primary tumour lobe	
		T3 (a & c) or b or d	any	Main bronchus (<2cm distal to the carina)	Chest wall (incl. superior sulcus tumour) / diaphragm / mediastinal pleura / pericardial pericardium	Atelectasis / obstructive pneumonia of the entire lung	
		T2 any of a, b, c, d	>3cm	Main bronchus (≥2cm distal to the carina)	Visceral pleura	Atelectasis or obstructive pneumonia that extends to the hilar region but does not involve the entire lung	
		T1 a & b & c	≤3cm	No invasion proximal to the lobar bronchus	Surrounded by lung or visceral pleura	—	
		Lymph Node (N)					
		a. Peribronchial (ipsilateral)		Stage 0 (Tis, N0, M0) Tis : Carcinoma in situ Staging is not relevant for Occult Carcinoma (TX, N0, M0) Metastases (M) M0 : Absent M1 : Present Separate metastatic tumour nodules in the ipsilateral nonprimary-tumour lobe(s) of the lung also classified M1			
		b. Hilar (ipsilateral)					
		c. Mediastinal (ipsilateral)					
		d. Subcarinal					
		e. Hilar (contralateral)					
		f. Mediastinal (contralateral)					
		g. Scapular (ipsi/contralateral)					
		h. Supraclavicular					
		N3 e or f or g or h					
		N2 c and/or d					
		N1 a and/or b only*					
		N0 none					

Adapted from: Lababede O, Moulay AM, Rice TW. TNM staging of lung cancer: a quick reference guide. Chest. 1999; 115: 233-35

Figure 4. Staging table of Lung Cancer [14]



Page 1

Page 2

Figure 5. Staging table of Lung Cancer in PDA version guideline

5.1.4 Navigation in eBook

It is obvious that it is more difficult to locate the target information on the small screen of PDA than regular computer monitor. The solutions to this problem are: Table of Contents and Navigation Bar at each page.

Table of Contents

Table of Contents is the most efficient way to navigate in guidelines, which links to each chapter in the eBook. Users can access the information they are looking for by just clicking the item. A hierarchical Table of Contents of navigation will give a clear overview of the guideline.

The parent level name can be displayed with a hyperlink to go down to the child level, and the lowest child level links to the webpage, which carries the content ^[15](See Figure 6).

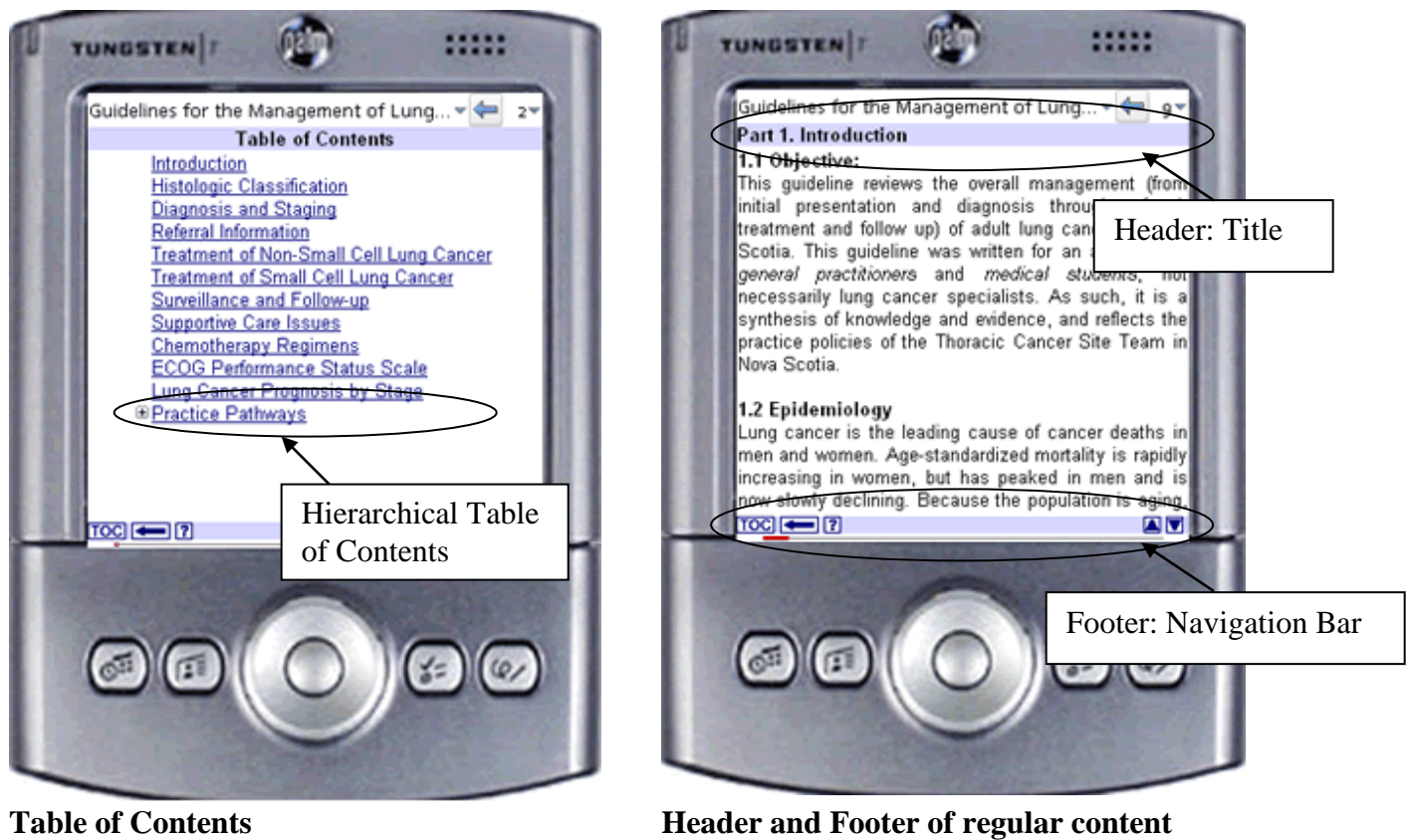




Figure 6. Table of Contents and Navigation Bar

Navigation Bar


In regular contents, each chapter of guidelines can be one webpage. The author used Mobipocket custom frame tags to build a same page header and footer for every page of this chapter. The header displays the title of the chapter, and the footer is actually including the


Navigation Bar (See Figure 6). Navigation Bar includes several useful buttons to help navigate the guideline:

: Goes to the table of contents.

: Moves back to your previous position where you linked through a hyperlink.

: Goes to guideline help document.

: Goes to previous page.

: Goes to next page.

5.1.5 Content Development

Overview

The feature of HTML hyperlinks provides flexible navigation through eBook – just like what is used already in web pages. Moreover, it is easy to design the layout and format of the eBook using HTML tags, such as font size and color ^[15].

Basically, there are 2 steps to develop a Mobipocket eBook:

- Developing HTML web pages which are fit for PDA screen display by using HTML Editor
- Creating eBook file by using Mobipocket Creator Publisher

Mobipocket Creator Publisher also provides a Palm Emulator to test eBook.

Development Environment

Ebook Reader:

Mobipocket Reader

Ebook Creator:

Mobipocket Creator Publisher 4.0

Other Software:

- HTML Editor: Such as Macromedia Dreamweaver
- Graphic Editor: Such as Macromedia Fireworks
- Original File Format: Microsoft Visio
- Palm Synchronization Software: HotSync
- Pocket PC Synchronization Software: ActiveSync

6. Evaluation

The author finished both graphic version and text version of “Guidelines for the Management of Lung Cancer” and the graphic version of “Guidelines for the Management of Cancer-related Pain in Adult” in this internship period. It is extremely important to evaluate the effectiveness of the PDA version and collect feedbacks from the users. CCNS sent out a survey (Refer to Appendix) with the prototype PDA version guidelines to about 200 health professionals in the email list of CCNS and a few other professionals who are interested in the brand new PDA guidelines. There is one respondent with valuable feedback so far, and the outcome is extremely satisfied except the respondent indicated that the introduction part of cancer management could be summarized or even removed.

7. Recommendations

The current PDA version cancer management guidelines are converted exactly from the original version without changing content. It is indicated from the survey result that the users don't like to "read" on their PDAs. It might need to differentiate the content of PDA version guidelines from traditional hard copy and electronic version, by simplifying the information or remove certain unimportant part in the further development.

It is essential to promote usefulness of the PDA version guidelines and other new technologies as well. More effort is need to encourage people, especially health professionals, to accept and adopt more technology in their practices by give more education and training to help health professional understand that new technology can facilitate to deliver better health care. Only after more and more health professional are involved in using new technology, it will be possible to collect more feedback from health professionals and find out what really they need , and then help new technology work better in health care.

8. Conclusions

Information Technology can help health professionals provide better health care by providing best up-to-date medicine evidence. PDA is one of the most effective "pocket" tools to allow health professionals access reference at anytime and any place in their practices. Although still in the first stage, PDA version cancer management guidelines can greatly change the structure of medical information delivery and improve the quality of cancer care.

Reference:

- [1] Who we are & why we're here, Cancer Care Nova Scotia, <http://www.cancercare.ns.ca/media/documents/WhoWeAre.pdf>, accessed in sep. 2005
- [2] Cancer Care Nova Scotia, <http://www.cancercare.ns.ca/inside.asp?cmPageID=94>, accessed in sep. 2005
- [3] Shelley Martin, MDs' computer, PDA use on the upswing, Can. Med. Assoc. J., Oct 2002; 167: 794
- [4] Shelley Martin, More than half of MDs under age 35 now using PDAs Can. Med. Assoc. J., Oct 2003; 169: 952
- [5] Skyscape Inc., SURVEY: PHYSICIANS USING HANDHELD COMPUTERS CAN PROVIDE BETTER CARE, THOUGH INTEGRATION WITH THE ENTERPRISE IS SLOW, www.skyscape.com, accessed in sep. 2005
- [6] Michelle Greiver, Hand-held brain extenders Can. Med. Assoc. J., Aug 2001; 165: 273
- [7] Michael O'Reilly, PDAs and medicine, Can. Med. Assoc. J., Oct 2001; 165: 938
- [8] Feisal Adatia and Philippe L. Bedard, "Palm reading": 2. Handheld software for physicians Can. Med. Assoc. J., Mar 2003; 168: 727 - 734
- [9] NCCW Online, <http://www.nccw.net/mobile-internet/history-of-the-pda.html>, accessed in sep. 2005
- [10] James A. Martin, Mobile Computing: Palm vs. Pocket PC, PC World, <http://www.pcworld.com/howto/article/0,aid,111825,00.asp>
- [11] EBOOKMALL, <http://ebookmall.com/knowledge-collection/format-comparisons.htm>, accessed in sep. 2005
- [12] Handebooks, Formats for PalmOS, <http://www.handebooks.com/formats/palmformats.html>, accessed in sep. 2005
- [13] email for Wes Robertson, chair of Palm Committee, Faculty of Medicine, Dalhousie University
- [14] CCNS, Guidelines for the Management of Lung Cancer, 2005
- [15] Mobipocket development center, <http://www.mobipocket.com/dev/>, accessed in sep. 2005

Appendix

Survey for Lung Cancer PDA version guideline

Jun. 2005

Please send the survey back to Jill Petrella by email Jill.Petrella@ccns.nshealth.ca

1. Are you a

- Family Doctor
- Specialist physician
- Resident

2. You own the following PDA:

- Palm
- Pocket PC
- Other: _____

2a) Device model # is _____, or if you don't know your device model #, please answer the question 2b and 2c.

2b) Your PDA is

- Black and white display
- Color display

2c) Your PDA's resolution is

- 160*160 pixel
- 320*320 pixel
- 240*320 pixel
- Other: _____
- I don't know

3. Would you use this PDA version guideline in your own practice?

- Yes
- No
- Unsure

If no or unsure, please explain

4. Does the PDA version contain the information that you need?

- Yes
- No

If no, please explain

5. What do you like most about this PDA version guideline?

6. How do you think this PDA version guideline can be improved?

7. Did you find the navigation bar easy to use?

Yes

No

If no, please explain

8. Is the hierarchy of the table of contents clear?

Yes

No

If no, please explain

9. Are the decision trees easy to follow through hyperlinks?

Yes

No

If no, please explain

10. Are the illustrations and graphics easy to read?

Yes

No

If no, please explain

11. Is the font size in decision tree easy to read?

Yes

No

12. Did you have any problems using this PDA version of the guideline?

Yes

No

If you had problems, did you use the "help" feature of the guideline?

Yes

No

If you used the "help" feature, did it answer your question?

Yes

No

If no, what question did you have?

13. Did you have any problems when you installed Mobipocket reader or this guideline on your PDA?

14. Is there a delay in opening the guideline or moving from page to page?

Yes

No

15. Would you like to see more guidelines for cancer management in PDA format?

Yes

No

16. Any other comments.
