Bookshelf Evolution: Modelling Order Out of Chaos

Stacy Lathrop – Bookshelf Program Manager

U.S. National Library of Medicine
National Center for Biotechnology Information

What is Bookshelf?

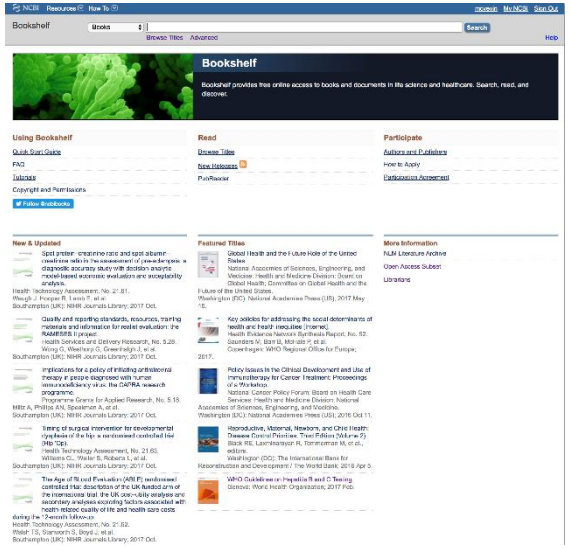
- Over 6,600 books and documents in life sciences and healthcare
- Full text browse and search
- Free for users

WHO

NHS

The National Academies of SCIENCES ENGINEERING MEDICINE

HHS



U.S. National Library of Medicine
National Center for Biotechnology Information

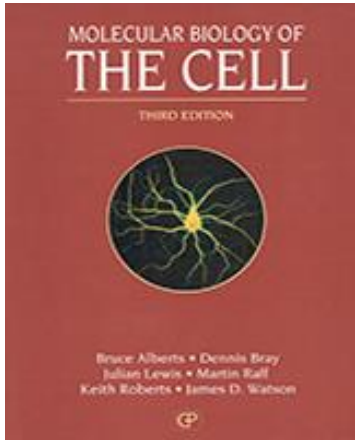
NCBI

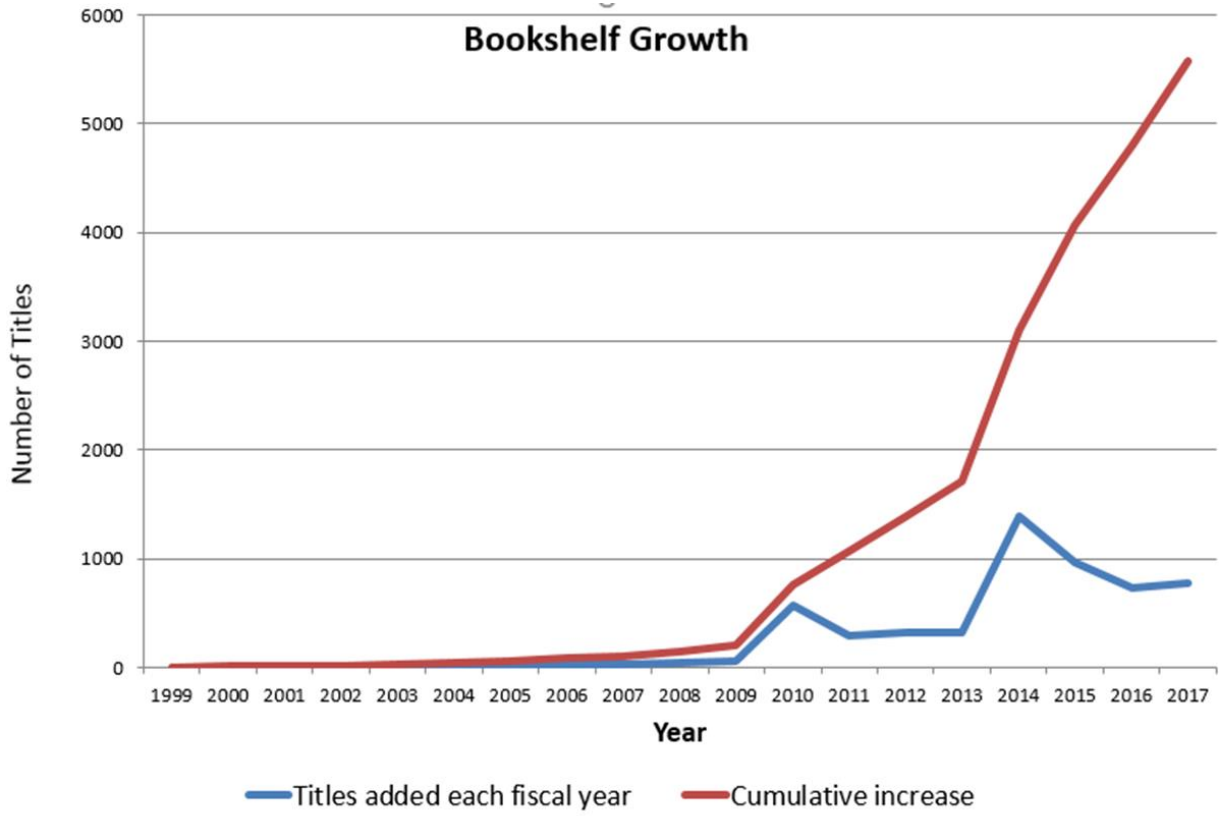
Why Bookshelf?

- Provides reference information for biological data and facilitates its discovery
- Reaches diverse audiences through PubMed and Google Scholar indexing
- Increases educational and scientific impact of sponsored public access content

Bookshelf started in 1999, with a single book …

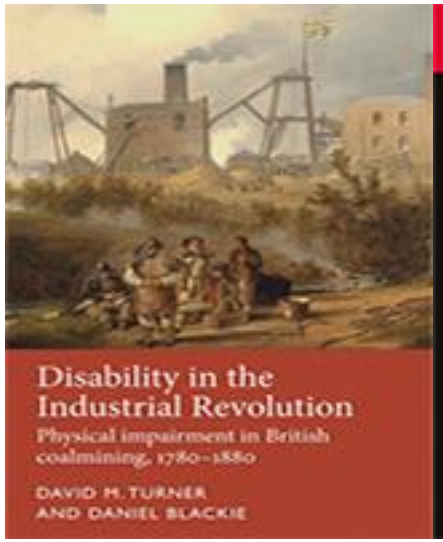
… the third edition of Alberts' *Molecular Biology of the Cell*.

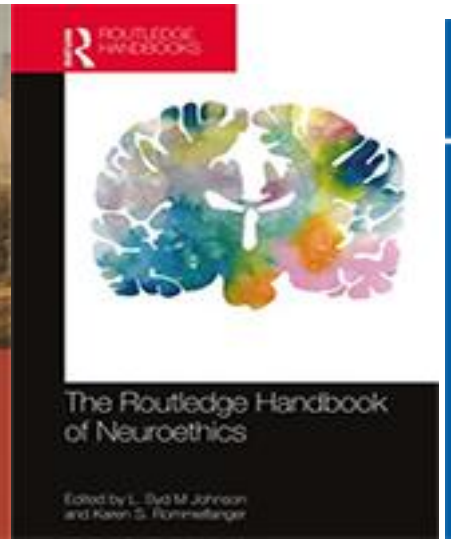


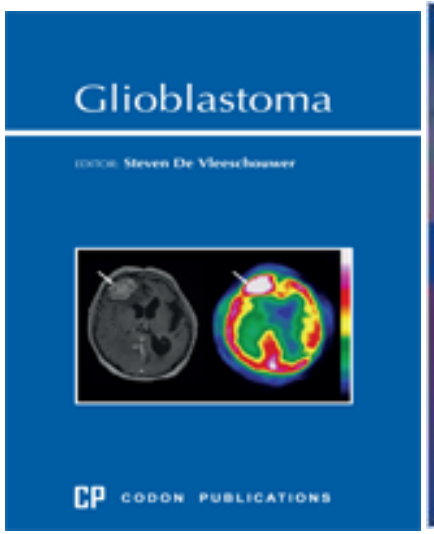


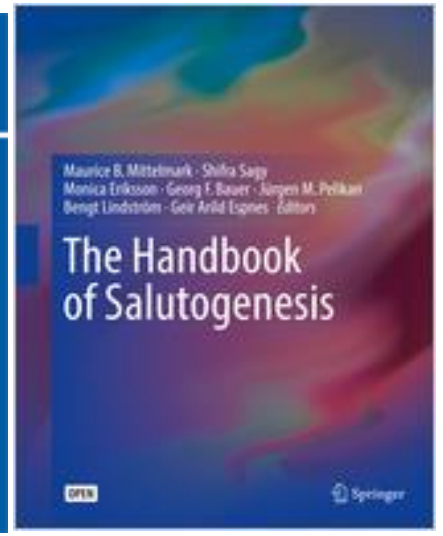
What types of content does Bookshelf host?

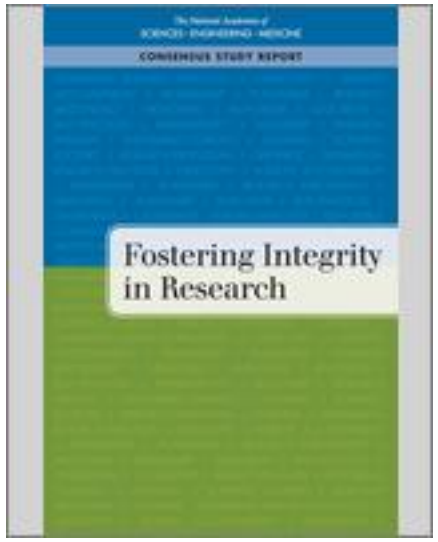
- Monographs
- Biographical Works
- Collected Works
- Government Publications
- Handbooks and Manuals
- Reference Works
- Standards and Guidelines
- Statistical Works
- Technical Reports
- Textbooks
- Web Content
- Other Grey Literature

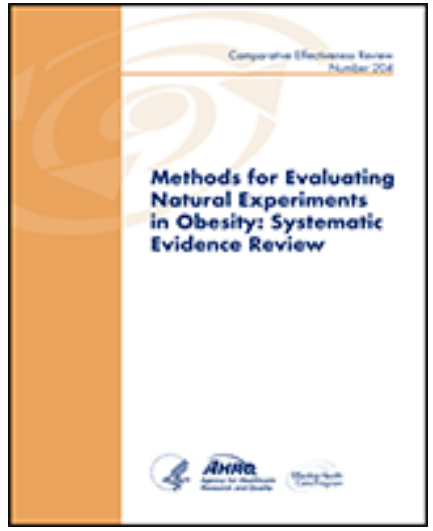


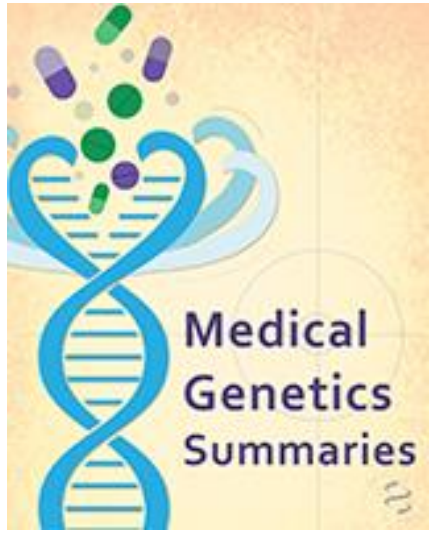






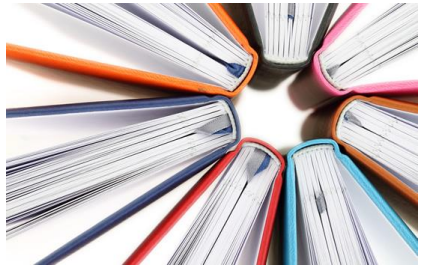






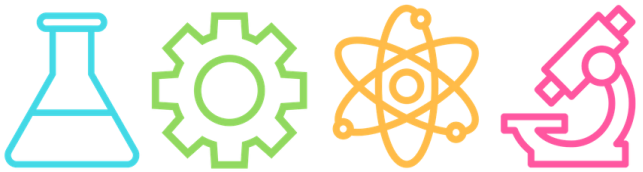
How does Bookshelf decide what to take?

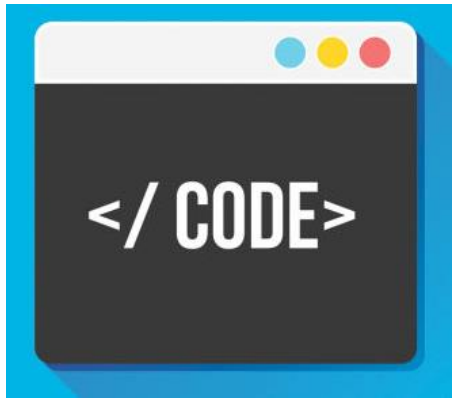
- Scope review
- Scientific review
- Technical review



Scope reviewed by the NLM Collection Development and Acquisitions Section (CDAS)

Scientific quality reviewed by the NLM Technical Services Division





Technical quality reviewed by the NCBI Bookshelf

How does Bookshelf support its XML providers?

- BITS Collaboration
- Tagging Guidelines
- Validation Tools
- Style Checker
- File Specifications
- Content Review
- Technical Review

https://www.ncbi.nlm.nih.gov/books/about/filespec/

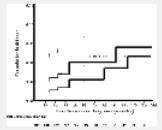
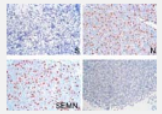
<book> Book

Top-level element for this DTD. A "book", as defined in this DTD, covers a single work or book component such as a technical monograph, government report, volume of a monographic series, STM reference work, etc.

Attributes

book-type Type of Book
dtd-version Version of the Tag Set (DTD)
id Document Internal Identifier
indexed Indexed
xml:base Base
xml:lang Language
xmlns:ali NISO ALI Namespace (NISO Access License and Indicators)
xmlns:mml
xmlns:xi
xmlns:xli
xmlns:xsi

2. Figure Graphic Formatting Guidelines

Image Type	Description	Example	Recommended Format	Color Mode	Resolution
Line Art	An image composed of lines and text, which does not contain tonal or shaded areas		tif or eps	Monochrome 1-bit or RGB	900 - 1200 dpi
Halftone	A continuous tone photograph, which contains no text		tif	RGB or Grayscale	300 dpi

<front-matter> Front Matter

Wrapper element for narrative introductory material su
"Introduction to the Fifth Edition", etc.

Related Elements

A BITS <book> may be divided into several components

1. the <book-meta> (the bibliographic information al
2. the <front-matter> (the narrative front matter o
3. the <book-body> (the textual and graphical conte
4. any <book-back> (any ancillary information such

Attributes

id Document Internal Identifier
xml:base Base

Content Model

```
<!ELEMENT  front-matter %front-matter-model;
```

Expanded Content Model

```
(ack | bio | dedication | fn-group | glossar
preface | notes | ref-list | xi:include)+
```

Description

One or more of any of:

- <ack> Acknowledgments
- <bio> Biography
- <dedication> Dedication

Document Objects

These Document Objects refer to parts of the document (author/affiliation relationships, copyrig
tagging.

Index of objects

Abstracts

Chapters may contain multiple abstracts.

Translated Abstracts

Data delivery

- FTP submissions
- Common archive format (zip, tar, gzip)
- Consistency, consistency, consistency!
- XML and associated files linked by filename

```
ForNCBI.zip
|-- 1.tif
|-- 2.TIF
|-- FULL.PDF.pdf
`-- Full\ REport\ v5\ rev20180417_final\ READY.xml
```

```
978-1-23-456789-0.zip
|-- images
|    |-- 978-1-23-456789-0-F1.tif
|    |-- 978-1-23-456789-0-F2.tif
|    `-- 978-1-23-456789-0-F3.tif
|-- pdf
|    `-- 978-1-23-456789-0.pdf
|-- suppl
|    `-- 978-1-23-456789-0-S1.csv
`-- xml
     `-- 978-1-23-456789-0.xml
```

```
MR-MD-2012.zip
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|     | -- MR-M9-2012_ch2.fig01.png
|     | -- MR-M9-2012_ch3-fig01.png
| -- pdf
|     | -- MR-M9-2012.pdf
|     | -- MR-M9-2012_appc-m001.pdf
|  -- xml
|     | -- MR-M9-2012.xml
```

XML coding

- Full-text in XML!
- A “mutually agreed upon” DTD
- All submissions must be valid!
- Consistent quality in future submissions

Structural and textual elements

- Chapters, sections, subsections
- Titles, paragraphs
- Figures, tables, boxes
- Reference citations, footnotes
- Formatting, links

IDs

The following elements require an `@id` attribute:

Element	Context
`<ack>`	when child of `<back>`, `<body>`, `<book-app-group>`, `<book-back>`, `<front-matter>`, or `<named-book-part-body>`
`<app>`	all
`<app-group>`	all
`<bio>`	when child of `<back>`, `<book-back>`, or `<front-matter>`
`<book-app>`	all
`<book-app-group>`	all
`<book-part>`	all
`<boxed-text>`	all
`<dedication>`	all
`<element-citation>`	outside `<ref>`
`<fig>`	all
`<fig-group>`	all
`<foreword>`	all
`<front-matter-part>`	all
`<glossary>`	when child of `<back>`, `<book-back>`, or `<front-matter>`
`<mml:math>`	all
`<mixed-citation>`	outside `<ref>`
`<notes>`	when child of `<back>`, `<book-back>`, or `<front-matter>`
`<preface>`	all
`<ref>`	all
`<ref-list>`	when child of `<back>`, `<book-back>`, or `<front-matter>`
`<sec>`	when child of `<back>`, `<body>`, `<book-app-group>`, or `<named-book-part-body>`
`<table-wrap>`	all
`<table-wrap-group>`	all
`<tex-math>`	all

```
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BITS submissions

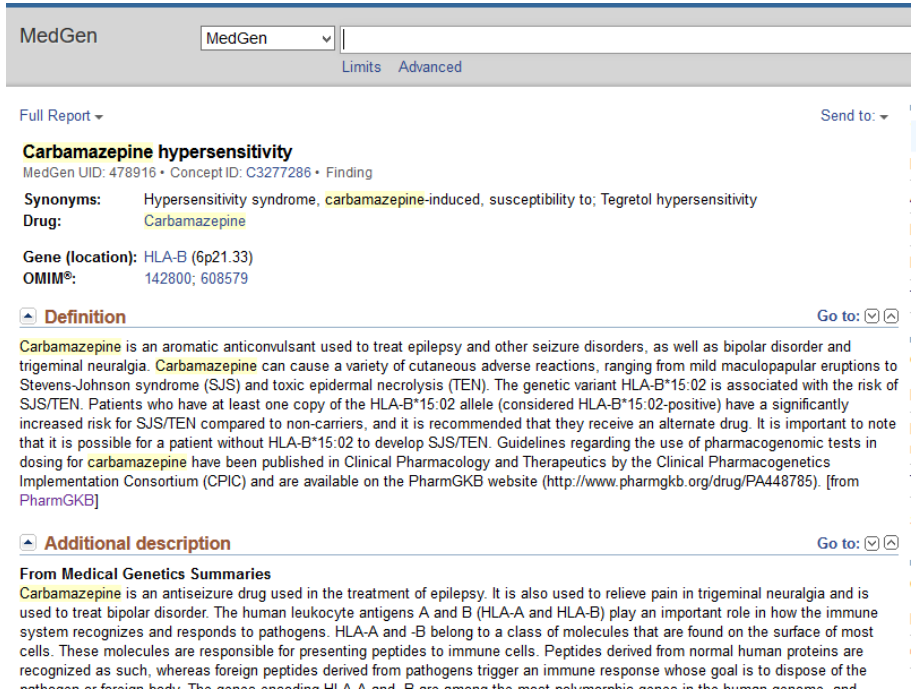
- BITS preferred
- PMC style-checker recommended
- Tagging guidelines for additional help

Content review

- Content is adequately copyedited and structured
- How best might we map the content to a structure Bookshelf supports?
- Are there any specific content types such as chemical or gene names to be supported in the XML?

Concepts and Accessions

Term	Source	ID
Carbamazepine response	MedGen	CN077964
Carbamazepine hypersensitivity	MedGen	CN077825
HLA-B	Gene	3106
HLA-A	Gene	3105
Carbamazepine	UMLS	C0004482

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Related Summaries by Gene

Abacavir Therapy and *HLA-B*57:01* Genotype

Allopurinol Therapy and *HLA-B*58:01* Genotype

Phenytoin Therapy and *HLA-B*15:02* and *CYP2C9* Genotypes

Related Summaries by Drug Class

Phenytoin Therapy and *HLA-B*15:02* and *CYP2C9* Genotypes

Tests in GTR by Condition

Carbamazepine response

Carbamazepine hypersensitivity

Tests in GTR by Gene

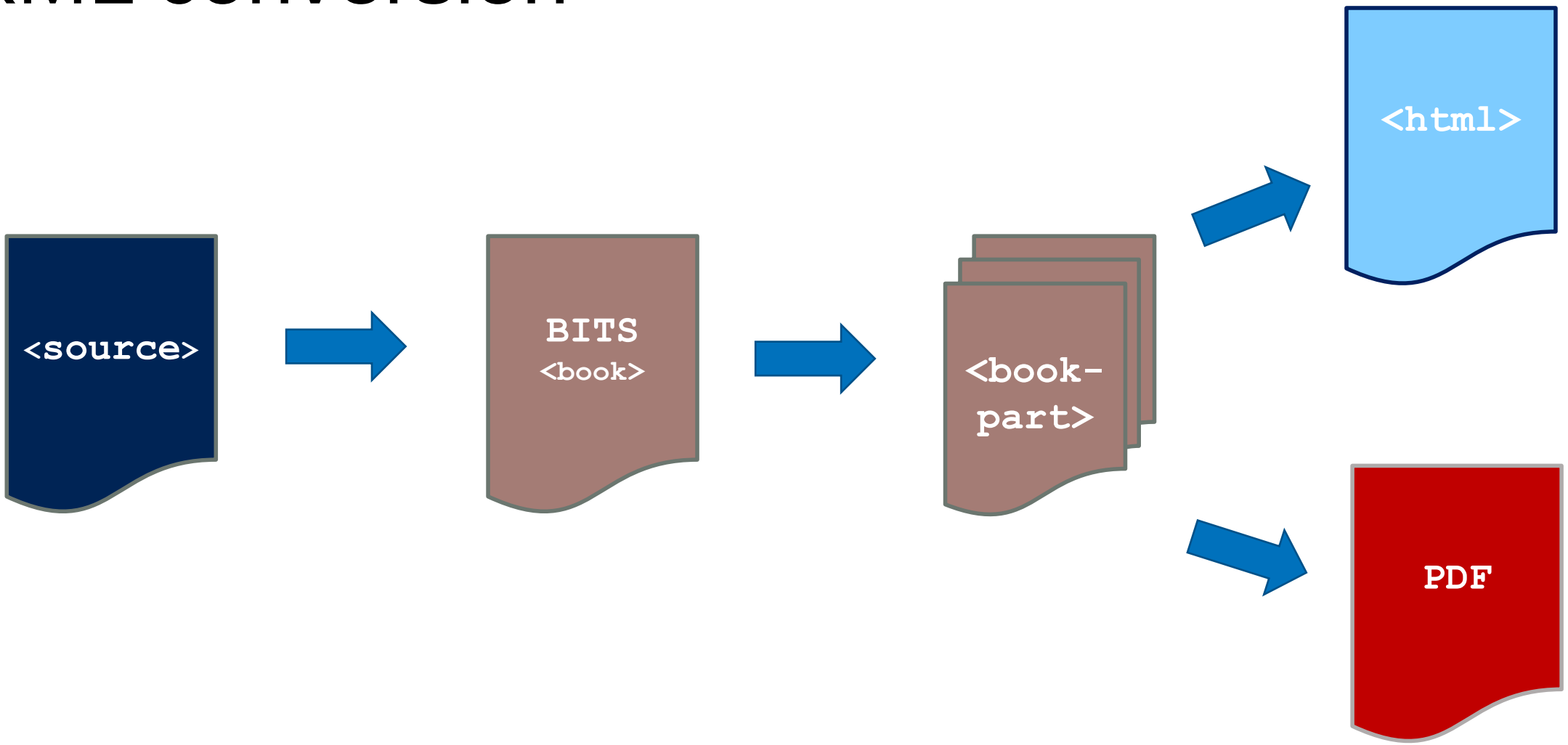
HLA-B gene

HLA-A gene

Technical review

- Evaluation of sample XML and associated files
- Machine validation and human QA
- Detailed feedback report with required fixes and suggested improvements

XML conversion



Why chop it up to BITS?

Must the HTML look like the PDF?

- Pre-published content
- Born digital content

Drug Abuse Warning Network

The CBHSQ Report

Short Report — November 30, 2017

EMERGENCY DEPARTMENT VISITS INVOLVING THE ACCIDENTAL INGESTION OF OPIOID PAIN RELIEVERS BY CHILDREN AGED 1 TO 5

AUTHORS

Elizabeth H. Crane, Ph.D., M.P.H.

In Brief

- According to the Drug Abuse Warning Network (DAWN), in 2011 an estimated 4,321 emergency

INTRODUCTION

As soon as infants learn to crawl and especially once they learn to
curiosity, and tendency to put things in their mouths make many s
potential danger.[1] Although parents and other caregivers may be a
dangerous substances, such as cleaning products and chemicals, t
the danger of accidental ingestion of medications. Every day, abou
poisoned in the United States.[2] Many of these poisonings occur bec
ingestion (i.e., children taking medications when parents/caregiver
parents accidentally giving children the wrong medication).

Bookshelf | Books | Search | Browse Titles | Advanced

The CBHSQ Report. < Prev | Next >

Show details

Contents | Search this book

Emergency Department Visits Involving the Accidental Ingestion of Opioid Pain Relievers by Children Aged 1 to 5

Elizabeth H. Crane, Ph.D., M.P.H.

Author Information

Published: November 30, 2017.

Summary

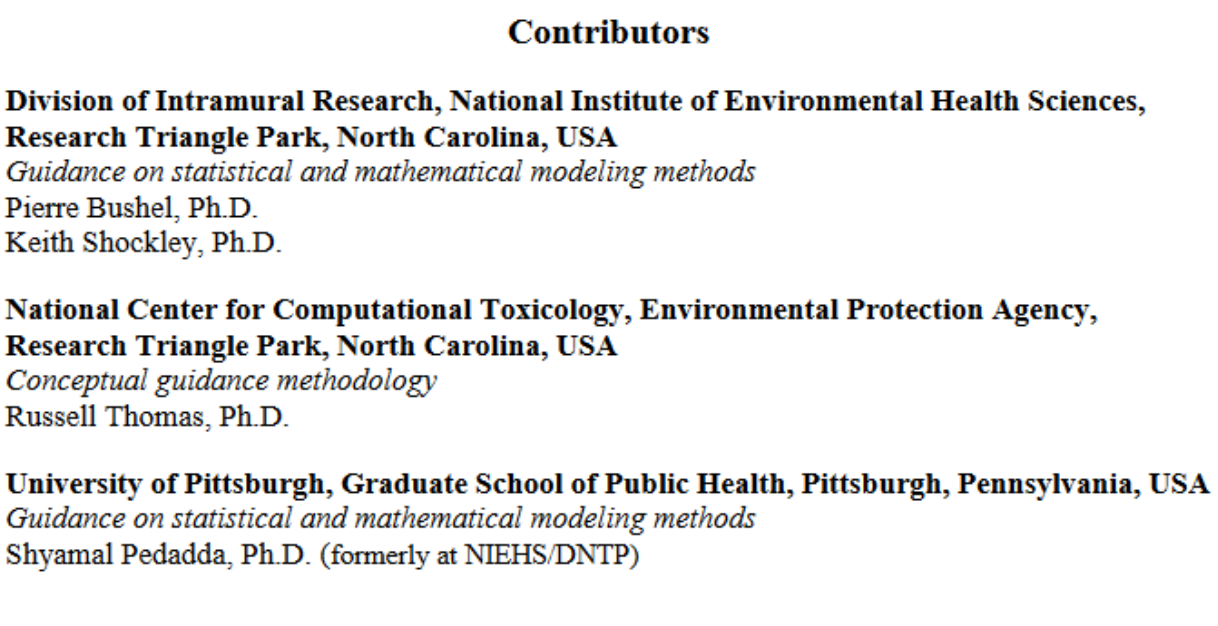
Go to:

Background: The ingestion of opioid pain relievers is dangerous for children. This report analyzes emergency department (ED) visits for children aged 1 to 5 that involved opioid pain relievers that occurred in 2011, and also examines combined data from 2004 to 2011 to identify characteristics of the ED visits. **Method:** Estimates on ED visits involving opioid pain relievers where the patient was a child aged 1 to 5 were examined for trends, and combined 2004 to 2011 DAWN data were analyzed to identify which specific opioid pain relievers were involved in the ED visits, to assess whether the visits involved a single drug or multiple drugs, and to learn the outcome of the ED

Views
PubReader
Print View
Cite this Page
PDF version of this page (2.8M)

In this Page
Summary
In Brief
Introduction
ED Visits: Trends 2004 to 2011
ED Visits: Combined 2004 to 2011
Discussion
Suggested Citation
Endnotes

Named content types



Contributors

Division of Intramural Research, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, USA
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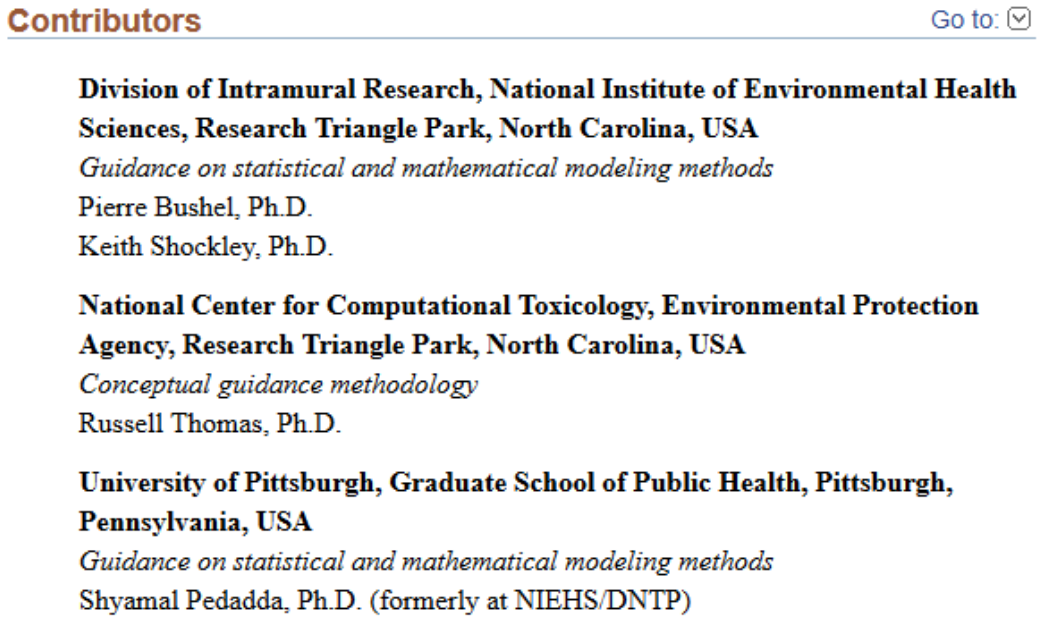
Conceptual guidance methodology
Russell Thomas, Ph.D.

University of Pittsburgh, Graduate School of Public Health, Pittsburgh, Pennsylvania, USA
Guidance on statistical and mathematical modeling methods
Shyamal Pedadda, Ph.D. (formerly at NIEHS/DNTP)



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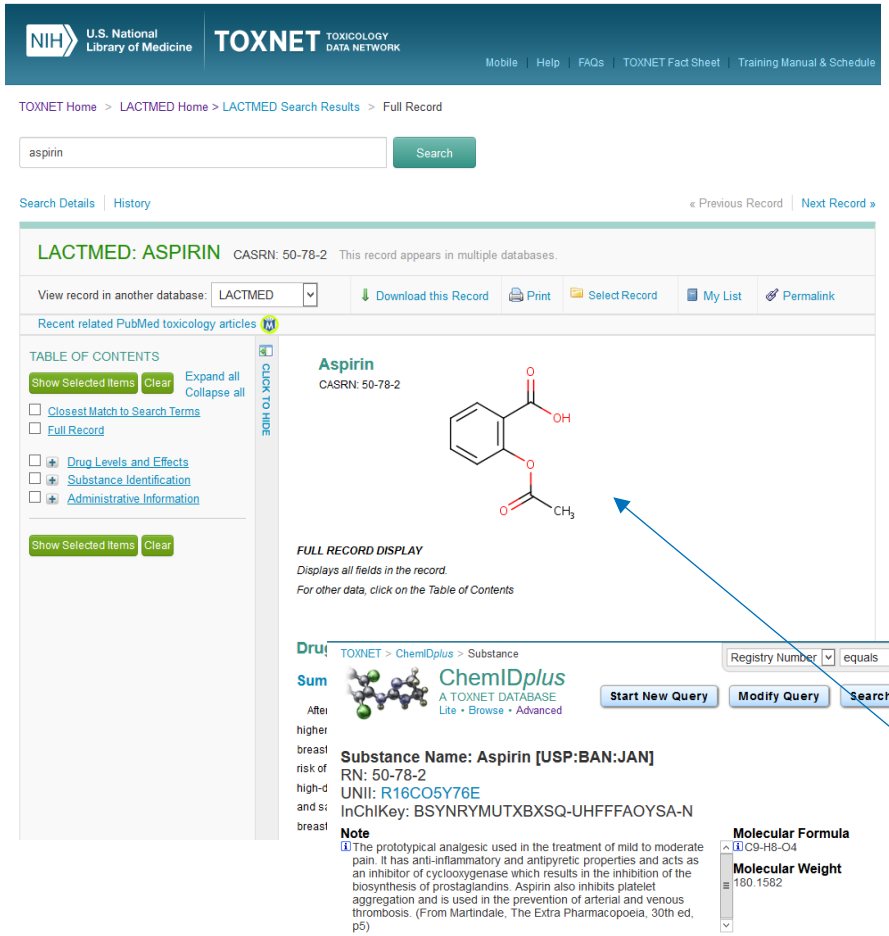

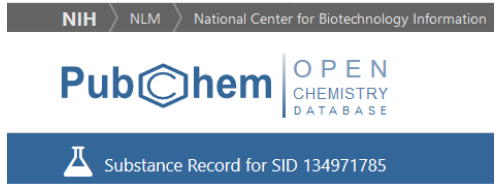

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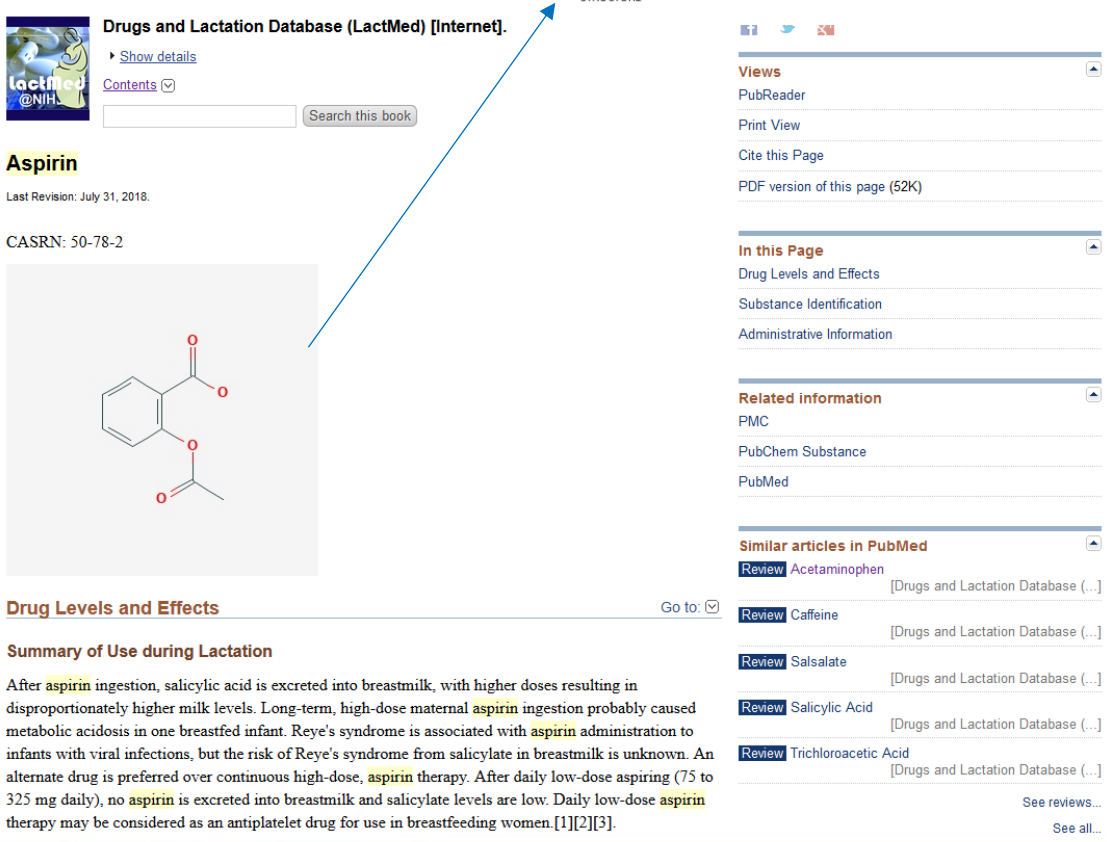

How do we model complex content?

- Metadata
- Structure
- Front matter

Legacies …

Use this form to tell us important information about this document, then start the text on the following page. All information you give in this form will appear in the document.

Document Information

Document Type	Label	Created (YYYY-MM-DD)	Updated (YYYY-MM-DD)	Revised (YYYY-MM-DD) (*GeneReviews* Project)
Chapter		2009-02-12	2018-08-16	

Note: for "Document Type", choose only one of the following: appendix, chapter, dedication, foreword, front-matter-part, glossary, preface, ref-list, or section.

Author Information

Given Name(s)	Last Name	Suffix	Degrees	Affiliation	Email	Corr Au? (Yes)	Au. Footnote
Mervyn G	Thomas		BSc (Hons), MB ChB, PhD	1	mt350@le.ac.uk		
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Michael	Hisaund		BSc	2			
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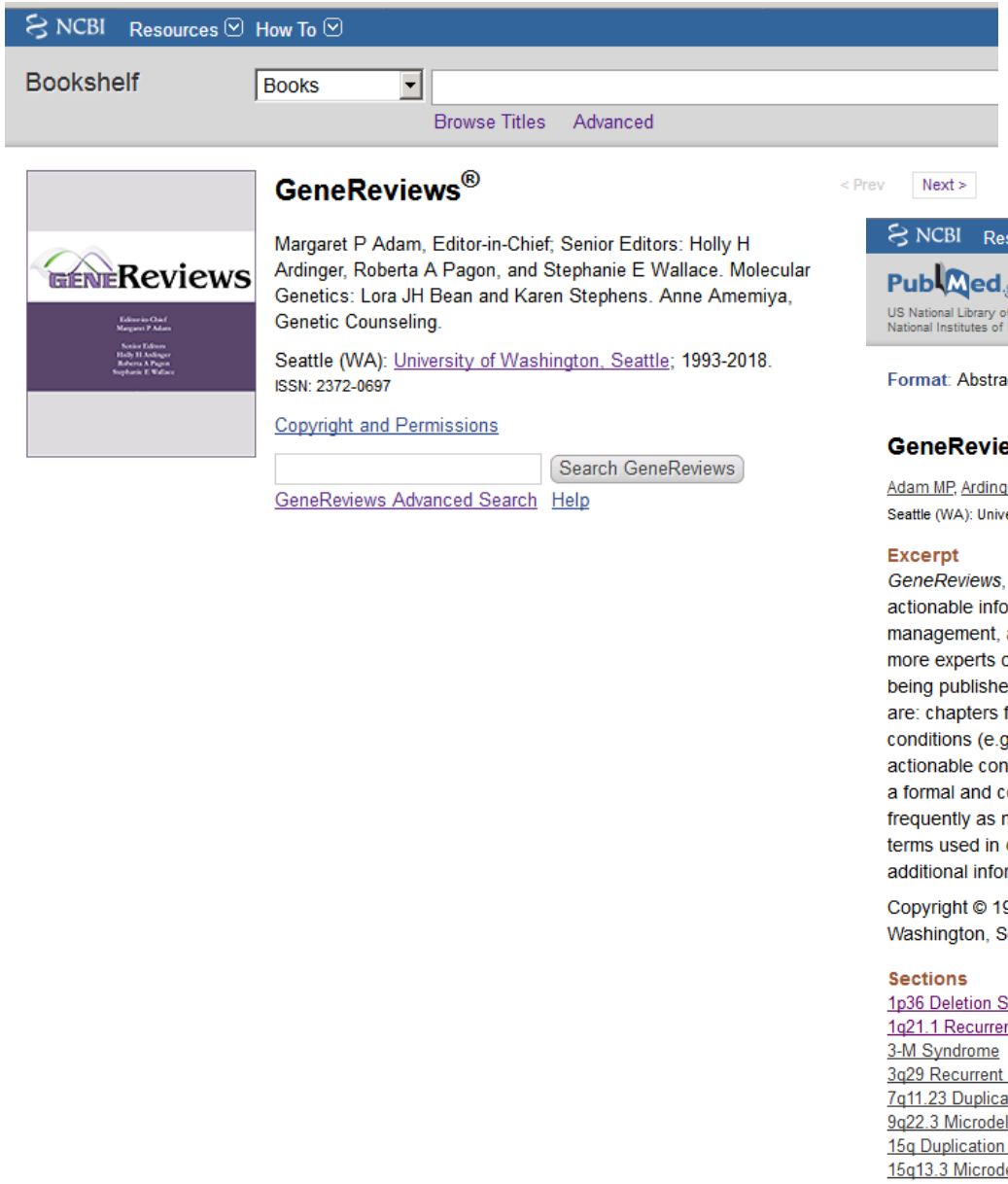
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- Structure as a challenge unique to books and BITS
- Need for standard versus diverse document types
- 3 models suggested

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Substance Abuse and Mental Health Services Administration
SAMHSA
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Drug Abuse Warning Network

The CBHSQ Report

Short Report November 30, 201

EMERGENCY DEPARTMENT VISITS INVOLVING THE ACCIDENTAL INGESTION OF OPIOID PAIN RELIEVERS BY CHILDREN AGED 1 TO 5

AUTHORS

Elizabeth H. Crane, Ph.D., M.P.H.

INTRODUCTION

As soon as infants learn to crawl and especially once they learn to walk, their mobility, curiosity, and tendency to put things in their mouths make many substances in the home a potential danger.[1] Although parents and other caregivers may be alert to securing obviously

AMBULANCE

In Brief

- According to the Drug Abuse Warning Netw (DAWN), in 2011 an estimated 4,321 emer department (ED) visits involved accidental ingestion of opioid pain relievers by childre 1 to 5. The number of ED visits increased 2 percent from 1,437 visits in 2004 to 4,321

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This research was supported by the Intramural Research Program of the NIH, National Library of Medicine.

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And all of our participants and other collaborators ….