2017-11-07

How the National Library of Medicine Can Add Evidence To Your mHealth App

Susan Halpin
University of Massachusetts Medical School

Sherry Pagoto
University Of Connecticut

Follow this and additional works at: https://escholarship.umassmed.edu/ner

Part of the Communication Technology and New Media Commons, Health Communication Commons, Library and Information Science Commons, Other Computer Engineering Commons, Public Health Commons, Social Media Commons, and the Telemedicine Commons

Repository Citation
https://escholarship.umassmed.edu/ner/52

This material is brought to you by eScholarship@UMMS. It has been accepted for inclusion in National Network of Libraries of Medicine New England Region (NNLM NER) Repository by an authorized administrator of eScholarship@UMMS. For more information, please contact Lisa.Palmer@umassmed.edu.
Welcome to the Webinar -- To Connect to Webinar Audio

1. To receive a call back, provide your phone number when you join the event, or call the number below and enter the access code.
2. Access Code 622 538 642
3. Call-in toll number (US/Canada) 1-650-479-3208

This Webinar is being recorded. To view the captions for this event click on the URL in the chat box.
How the National Library of Medicine (NLM) Resources Can Add Evidence to Your Mobile Health App

Presented by National Network of Libraries of Medicine & UConn Center for mHealth and Social Media
About your Webinar Hosts

Susan Halpin  
susan.halpin@umassmed.edu  
NNLM NER,  
Education & Outreach Coordinator  
University of Massachusetts Medical School  
Worcester, Massachusetts

Sherry Pagoto, PhD  
sherry.pagoto@uconn.edu  
UConn Center for mHealth and Social Media  
University of Connecticut  
Storrs, Connecticut
Many commercial health apps lack evidence-based strategies

- Obesity (Pagoto et al. 2012, Rivera et al. 2016)
- Physical activity (Modave et al. 2015, Conroy et al. 2014)
- Arthritis (Geuens et al. 2016)
- Stress management (Coulon et al. 2016)
- Eating disorders (Juarascio et al. 2015)
- Smoking cessation (Jacobs et al. 2014)
- HIV prevention (Muessig et al. 2013)
Ways to incorporate evidence into apps

Have app deliver an evidence-based behavior change strategy

- Self-monitoring is most popular example employed by apps
- Michie's behavior change taxonomy includes numerous behavioral strategies
- Evidence-based protocols available for many behavioral issues

Have app provide user with evidence-based health information

- Big question is: what is an evidence-based resource? Is it vetted? Up-to-date?
Purpose of Today’s Webinar

- Introduce you to NLM and the FREE Health & Medical websites databases and tools. Why are NLM resources better than commercial websites such as WebMd?
- Demonstrate how NLM resources carry out the mission to improve public health.
- Provide examples of how these health related resources can add value to your app
What Makes a Resource Good?

- **Ease of Use**
- **Links to Original Articles**
- **Freedom from Advertisements**
- **Evidence, Not Expert Opinion**
- **Ease of Access**
- **Disclosure of Conflict of Interest**
About National Library of Medicine (NLM)

Physical library is Bethesda, MD part of the NIH campus.

Largest biomedical library in the world

One of the federal government’s largest providers of digital content

The library is open to everyone

**NLMs mission**
Advance the progress of medicine and improve public health by making biomedical information accessible to everyone.
NLM Carries Out its Mission Through National Network of Libraries of Medicine (NNLM)

- Nationwide network of health sciences libraries, public libraries & information centers
- Each region has a partnership with a regional medical library
- Outreach provided through
  - Free access to online resources
  - Training & PD
  - Grant funding opportunities
NLM Resources you know…


https://medlineplus.gov/
NLM Partners
Partners in Information Access for the Public Health Workforce [https://phpartners.org/](https://phpartners.org/)
Why Use NLM Resources?

What is the AD?

What is the information you were looking for?
Why Use NLM Resources?
MedlinePlus Connect

Linking Patient Portals and EHRs to Consumer Health Information

MedlinePlus API is available as a Web application or a Web service.
Search for Adderall in DailyMed

Adderall (dextroamphetamine and amphetamine) is a prescription medication used to treat ADHD (Attention-Deficit Hyperactivity Disorder) and narcolepsy. It works by affecting the body's use of certain chemicals in the brain that can affect attention and hyperactivity.

**Boxed Warning: Potential for Abuse**
Amphetamines have a high potential for abuse. Administration of amphetamines for prolonged periods of time may lead to drug dependence. Pay particular attention to the possibility of subjects obtaining amphetamines for non-therapeutic use or distribution to others and the drugs should be prescribed or dispensed sparingly.

Mouse of amphetamine may cause sudden death and serious cardiovascular adverse reactions.
Pillbox

### Search Results: 535 record(s) for "Oval | Orange"

**Display: 1 - 40**

<table>
<thead>
<tr>
<th>Name</th>
<th>Drug</th>
<th>Label</th>
<th>Imprint</th>
<th>Ingredient(s)</th>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paroxetine</strong> - Paroxetine 20 MG Oral Tablet [Paxeva]</td>
<td><img src="image2.png" alt="Image" /></td>
<td>NOVEN THERAPEUTICS, LLC</td>
<td>20mg:2POT26([a]);POT20</td>
<td>Paroxetine mesylate</td>
<td>Show More Information</td>
</tr>
<tr>
<td><strong>Hectorol</strong> - Doxercalciferol 0.001 MG Oral Capsule [Hectorol]</td>
<td><img src="image3.png" alt="Image" /></td>
<td>Genzyme Corporation</td>
<td>g</td>
<td>DOXERCALCIFEROL mixture with COCONUT OIL and GELATIN and GLYCERIN and TITANIUM DIOXIDE and ALCOHOL and BUTYLATED HYDROXYANISOLE and FD&amp;C YELLOW NO. 6</td>
<td>Show More Information</td>
</tr>
<tr>
<td><strong>Clonidine Hydrochloride</strong> - Clonidine Hydrochloride 0.2 MG Oral Tablet</td>
<td><img src="image4.png" alt="Image" /></td>
<td>Qualitest Pharmaceuticals</td>
<td>25:45:V</td>
<td>CLONIDINE HYDROCHLORIDE</td>
<td>Show More Information</td>
</tr>
<tr>
<td><strong>Trandolapril</strong> - trandolapril 1 MG Oral Tablet</td>
<td><img src="image5.png" alt="Image" /></td>
<td>Teva Pharmaceuticals USA Inc</td>
<td>0.13,7825</td>
<td>TRANDOLAPRIL</td>
<td>Show More Information</td>
</tr>
<tr>
<td><strong>Simvastatin</strong> - Simvastatin 10 MG Oral Tablet</td>
<td><img src="image6.png" alt="Image" /></td>
<td></td>
<td></td>
<td>SIMVASTATIN</td>
<td>Show More Information</td>
</tr>
</tbody>
</table>

**Search Results: 535 record(s) for "Oval | Orange"**

**Display: 1 - 40**

<table>
<thead>
<tr>
<th>Name</th>
<th>Drug</th>
<th>Label</th>
<th>Imprint</th>
<th>Ingredient(s)</th>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Paroxetine</strong> - Paroxetine 20 MG Oral Tablet [Paxeva]</td>
<td><img src="image8.png" alt="Image" /></td>
<td>NOVEN THERAPEUTICS, LLC</td>
<td>20mg:2POT26([a]);POT20</td>
<td>Paroxetine mesylate</td>
<td>Show More Information</td>
</tr>
<tr>
<td><strong>Hectorol</strong> - Doxercalciferol 0.001 MG Oral Capsule [Hectorol]</td>
<td><img src="image9.png" alt="Image" /></td>
<td>Genzyme Corporation</td>
<td>g</td>
<td>DOXERCALCIFEROL mixture with COCONUT OIL and GELATIN and GLYCERIN and TITANIUM DIOXIDE and ALCOHOL and BUTYLATED HYDROXYANISOLE and FD&amp;C YELLOW NO. 6</td>
<td>Show More Information</td>
</tr>
<tr>
<td><strong>Clonidine Hydrochloride</strong> - Clonidine Hydrochloride 0.2 MG Oral Tablet</td>
<td><img src="image10.png" alt="Image" /></td>
<td>Qualitest Pharmaceuticals</td>
<td>25:45:V</td>
<td>CLONIDINE HYDROCHLORIDE</td>
<td>Show More Information</td>
</tr>
<tr>
<td><strong>Trandolapril</strong> - trandolapril 1 MG Oral Tablet</td>
<td><img src="image11.png" alt="Image" /></td>
<td>Teva Pharmaceuticals USA Inc</td>
<td>0.13,7825</td>
<td>TRANDOLAPRIL</td>
<td>Show More Information</td>
</tr>
<tr>
<td><strong>Simvastatin</strong> - Simvastatin 10 MG Oral Tablet</td>
<td><img src="image12.png" alt="Image" /></td>
<td></td>
<td></td>
<td>SIMVASTATIN</td>
<td>Show More Information</td>
</tr>
</tbody>
</table>

**Drug Details:**
- **Name:** Lisinopril - Lisinopril 5 MG Oral Tablet
- **Ingredient(s):** LIONPRIL
- **Imprint:** WW:66
- **Label:** Wast-Ward Pharmaceutical Corp
- **Color(s):** Pink, Orange
- **Shape:** Oval
- **Size (mm):** 8.00
- **Score:** 2
- **Inactive Ingredient(s):** starch, corn / silicon dioxide / calcium phosphate, dibasic, anhydrous / magnesium stearate / mannitol / ferric oxide red / sodium starch glycolate type a potato
- **DEA Schedule:** Non-scheduled
- **Product Code:** 0143-1266

**Display Options:**
- Hide More Information
- Drug Label
- Drug Information Links

**Related Links:**
- Show Search Criteria
- Drug Label
- Drug Information Links
NLM Disaster Resources and Apps

How Does NLM Select Partner Sites/Organizations?


This is a 2 page promotional flyer you can print out (.PDF)
NLM Trending Health Topics Infographic

bit.ly/NLMtrendingtopicsinfographic

Link to NLM Home Page
https://www.nlm.nih.gov/
Topics of Interest

More

Stay Connected
NLM Nutrition Related Resources

https://medlineplus.gov/nutrition.html
MedlinePlus offers information in multiple languages.

MedlinePlus also has a quarterly magazine available online and in print.

MedlinePlus also allows you to choose to search on External Health Links to locate info from external organizations (that have been vetted by NLM).

For example,

* American College of Obstetricians and Gynecologists
* National Center for Health Statistics
* National Multiple Sclerosis Society

https://medlineplus.gov/
NLM Resources Related to Mental and Behavioral Health

https://medlineplus.gov/

https://mentalhealth.gov/

https://www.nlm.nih.gov/
# Gallery of NLM Mobile Apps

## Biomedical Literature

**PubMed Mobile**  
Mobile website: [https://nnlm.nih.gov/tpubmed](https://nnlm.nih.gov/tpubmed)  
Database of more than 20 million citations for biomedical literature from MEDLINE, life science journals, and online books.

**PubMed for Handhelds (PubMed4HH)**  
Unique PubMed tools, including PICO (clinical queries), and MEDLINE (a rich language search), and Consensus Abstracts.

## HIV/AIDS Guidelines

**AIDSInfo**  
Mobile-optimized website: [https://aidsinfo.nih.gov/](https://aidsinfo.nih.gov/)  
Federally approved HIV/AIDS medical practice guidelines, HIV treatment and prevention clinical trials, and research.

**AIDSInfo HIV/AIDS Drug Database**  
Mobile app for Android and iOS: [https://aidsinfo.nih.gov/app](https://aidsinfo.nih.gov/app)  
Information about drugs approved to treat HIV infection and other infections or diseases common to people living with HIV.

**AIDSInfo HIV/AIDS Glossary**  
Mobile app for Android and iOS: [https://aidsinfo.nih.gov/app](https://aidsinfo.nih.gov/app)  
Definitions for HIV/AIDS-related terms, written in concise and easy-to-understand language, in both English and Spanish.

## Public Health

**PHPartners (Partners in Information Access for the Public Health Workforce)**  
Mobile-optimized website: [https://phpartners.org/](https://phpartners.org/)  
Provides timely, convenient access to selected public health resources, including data, tools, and statistics.

## Drugs and Medical Devices

**Drug Information Portal Mobile**  
Mobile website: [https://hivinfo.nih.gov/diaportrait](https://hivinfo.nih.gov/diaportrait)  
Gateway to drug information from US Government agencies including NIB, FDA, and CDC.

**DailyMed**  
Comprehensive resource of medication content and labeling found in FDA label information.

**LastMed**  
Mobile app for Android and iOS: [https://search.nlm.nih.gov/db/lastmed/app](https://search.nlm.nih.gov/db/lastmed/app)  
Information about maternal and infant drugs and dietary supplement levels, effects on lactation and on breastfed infants, and alternative drugs to consider.

**Pillbox**  
Mobile app for iOS: [https://itunes.apple.com/app/id892353903](https://itunes.apple.com/app/id892353903)  
Identify unknown prescription, over-the-counter, homopathic, and veterinary medications.

**AccessGUIDE (Global Unique Device Identification Database)**  
Key device identification information about medical devices that have Unique Device Identifiers (UDI).

## Toxicology

**Haz-Map**  
Occupational health database of information about the adverse effects of workplace exposures to chemical and biological agents.

**TOXNET Mobile**  
Collection of databases on toxicology, hazardous chemicals, environmental health, and toxic industries.

## Consumer Health

**MedlinePlus**  
Mobile-optimized website: [https://medlineplus.gov/](https://medlineplus.gov/)  
Covers diseases, conditions, medications, wellness topics, and the latest news, in both English and Spanish.

## Educational

**Digital Collections**  
Mobile-optimized website: [https://nhlbi.nih.gov/](https://nhlbi.nih.gov/)  
Access NLM's transcribed and fully searchable historical biomedical books and videos.

**Emubio**  
Mobile app for iOS: [https://itunes.apple.com/app/id422317604](https://itunes.apple.com/app/id422317604)  
Explore human embryo development through videos, micrographs, images, interactive tools, and related resources.

**Native Voices**  
Mobile app for iPad and Android: [https://itunes.apple.com/app/id821284108](https://itunes.apple.com/app/id821284108)  
Explore the interconnectedness of wellness, illness, and cultural life for Native Americans, Alaska Natives, and Native Hawaiians.

**TOXinventors**  
Mobile app for iPad: [https://itunes.apple.com/app/id7776152](https://itunes.apple.com/app/id7776152)  
Game that supports middle school science concepts about environment and health.

**Turning the Pages**  
Mobile app for iPad: [https://itunes.apple.com/app/id8923539194](https://itunes.apple.com/app/id8923539194)  
Virtually flip through rare books and manuscripts and learn more about them through historian and curator annotations.

---

Examples of Mobile app Use
Aidsinfo, LactMed
Promotional Items & Printable Handouts

NLM Also Provides
Grant Funding Opportunities

• Community Engagement (up to $10,000) - short-term outreach projects to advance health information resources in collaboration community groups.

• Knowledge and Data Management (up to $10,000) – projects that support innovations data management and research services at the health care or research institution.

• Member Programs (up to $5,000) — Projects & programs that improve the knowledge and skills of librarians & health information professionals

• Technology (up to $7,000) - Improve technology access and delivery of health information for network members
Example of mHealth Project
MedlinePlus and LactMed for Patient Education

https://vimeo.com/217207971
Using NLM Resources
A Win/Win
For mHealth Developers & Users

health literacy
definition: the capacity to obtain, process, and understand basic health information and services to make appropriate health decisions.
National Network of Libraries of Medicine

NNLM has about 6800 Network Members

Anyone can join the network, it’s FREE

To Join the NNLM Network:
https://nnlm.gov/members/join-network
Benefits of NNLM Membership
How Will Use NLM Resources in Your mHealth App?

For more information about how to incorporate MedlinePlus in your application development

https://medlineplus.gov/fordevelopers.html

Please share your ideas, comments, and questions in the Chat Box
Thank you for Attending this Webinar!

Webinar Evaluation Link
http://www.surveygizmo.com/s3/3529624/47e6102b9be5

For more information about how you can benefit from NNLM NER outreach contact Susan Halpin, Education & Outreach Coordinator susan.halpin@umassmed.edu

For more information about the University of Connecticut Center for mHealth & Social Media contact Dr. Sherry Pagoto sherry.pagoto@uconn.edu