Medical Apps to Optimize Care

Knowledge Translation at the Point of Care

Daniel Schwartz, MD | Oct 17, 2014

Disclosure

Medical leadership, equity @ QxMD

Objectives

- Increase productivity
- Be smarter in less time
- We all need to contribute to apps

Problem

HCPs Face Information Overload

- 20M papers available in PubMed
- 25K journals
- 16K new papers each week

HCPs Want to Apply Best Evidence & Provide

- Difficult to identify important content
- Difficult to apply at the point of care
- Shift from volume to value

12 Easy Steps to get your Patient List for the Whole Group
1. Green Meditech Icon
2. Your name & new password (mblackwell → xxoo)
3. Click EMR
4. Click only 1 time – "Pt Census by Provider"
5. Click RCH & Green √ on Right of screen
6. Click Acute Pt Census by Provider Group
7. Dr. Group in CAPS RC-CARD
8. Click F9
9. Click RCH Cardiology & Green √ on right
10. Click printer, OK (this only gives one page)
11. Click Printer Icon at top of screen
12. Click Print ALC

Opportunity

80%

Use a smartphone in daily practice

UpToDate

Personal Subscription

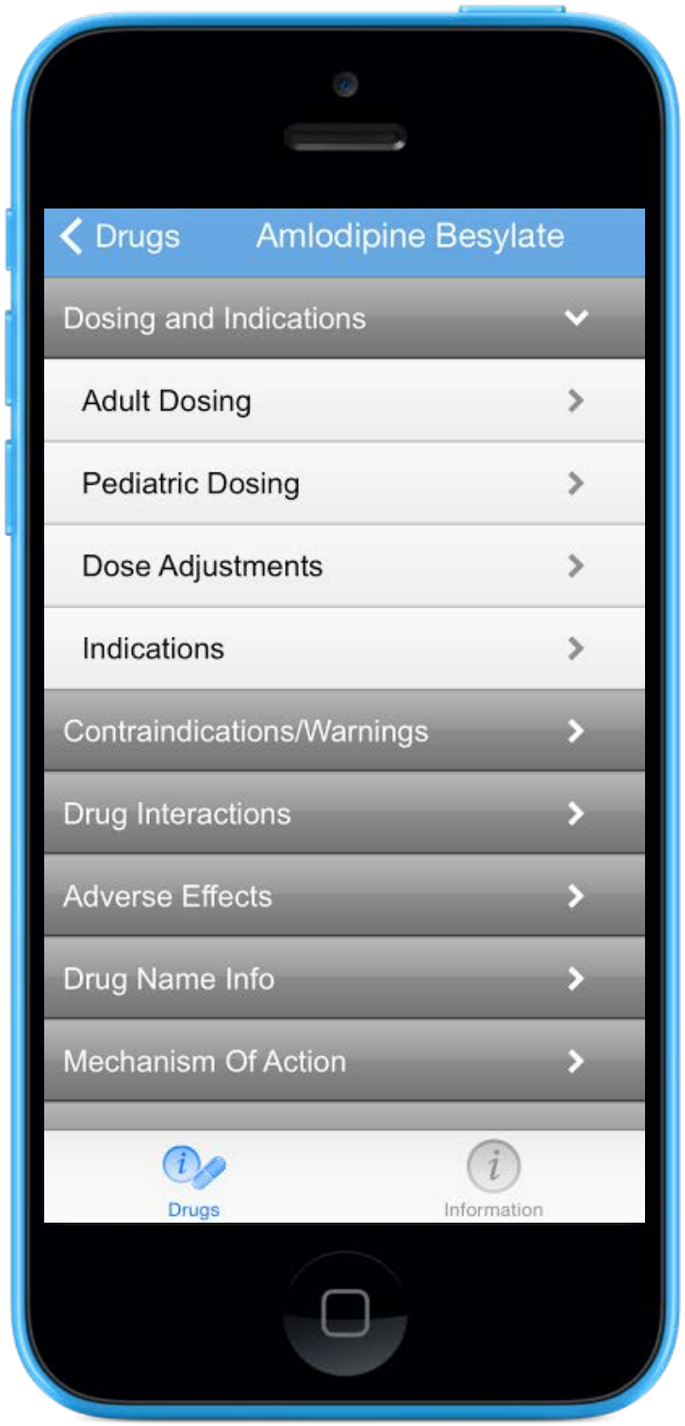
UpToDate Anywhere

Institutional Subscription

UpToDate | Values

- Summaries
- Evidence
- Actionable

Micromedex



- Institutional subscriptions

Figure1

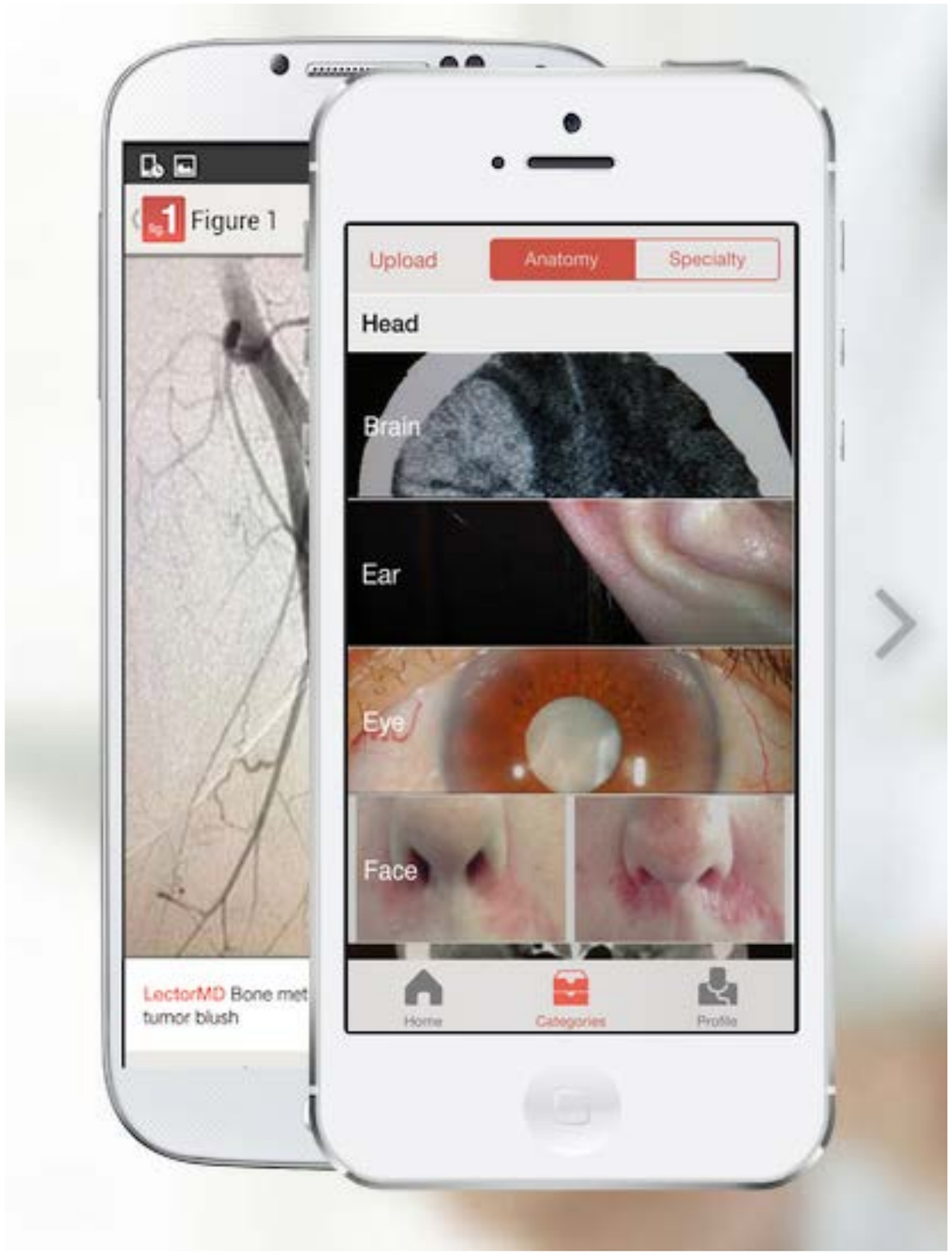
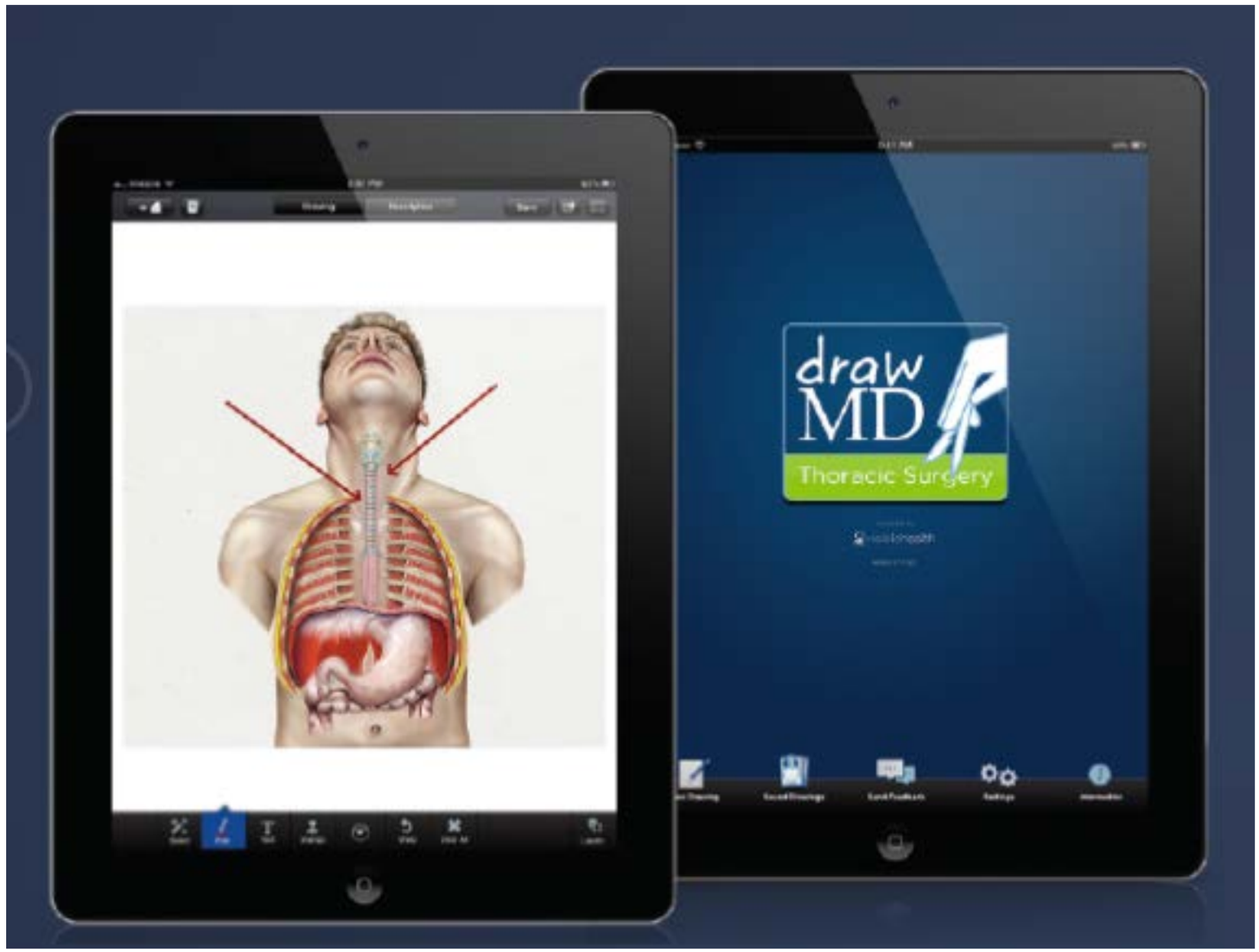


Figure 1
Upload
Anatomy
Specialty
Head
Brain
Ear
Eye
Face
Home
Categories
Profile

DrawMD



Solution

QxMD

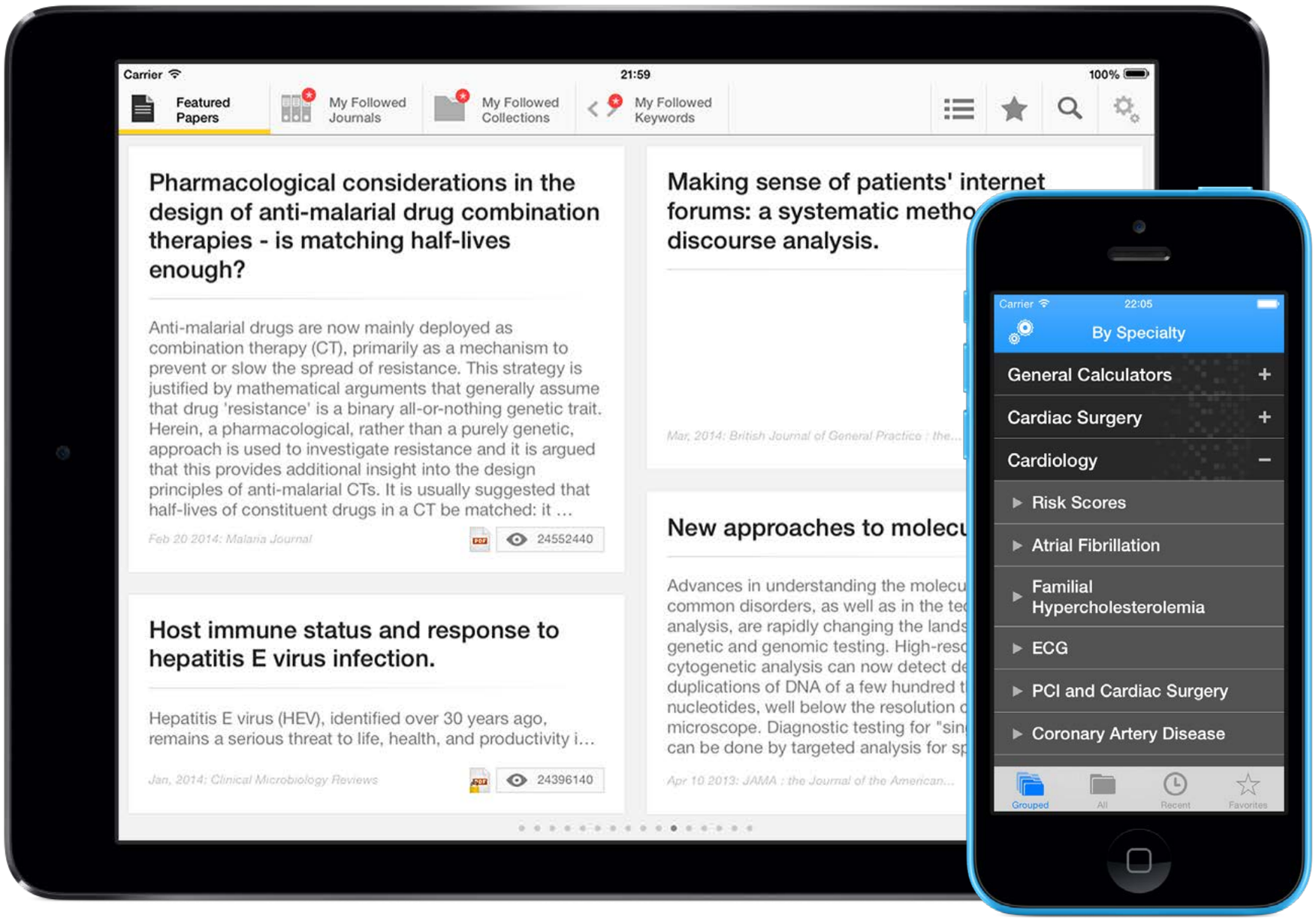
- Automated discovery and delivery of the most important research directly to physicians
- Provide a platform for easy sharing and discussion of published papers
- Provide a decision support tool for MDs at the point of care

Save Time

Learn

Improve Care

QxMD



‘Read’

Personalized Medical Journal

‘Calculate’

Decision Support Tool

KT Using “Native Advertising”

‘Read’

Promoted Research

- Analogous to Facebook Sponsored Stories & Twitter Promoted Tweets

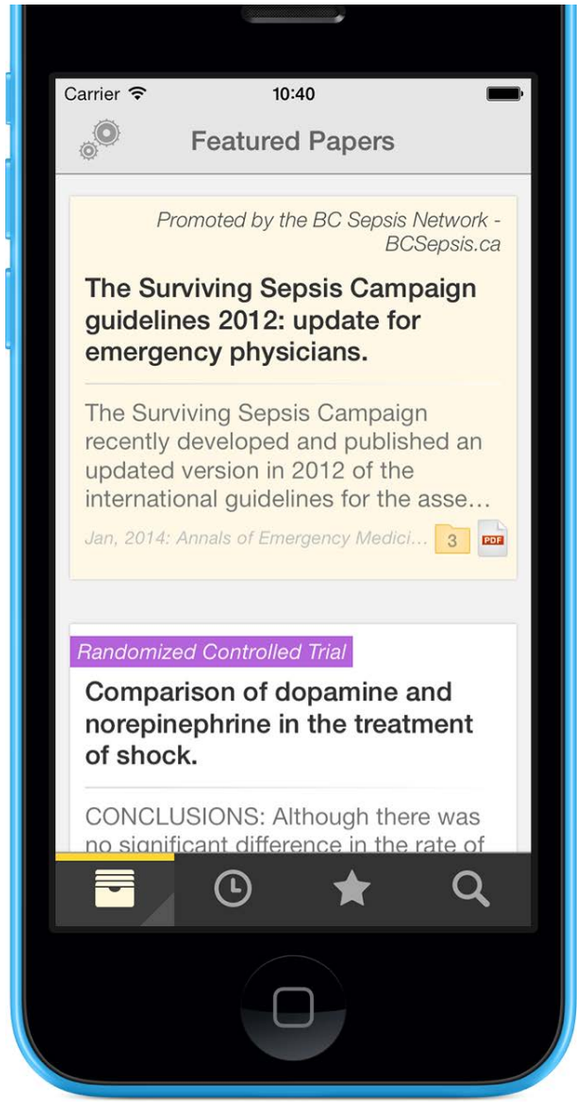
‘Calculate’

Digital Interactive Tools

- Help clinicians prescribe therapy, follow guidelines and raise disease awareness

BC Patient Safety & Quality Council + BC Sepsis Network

- Challenge: Increase adherence to evidence-based guidelines in sepsis
- Campaign: 150 Lives in 150 Days
- QxMD: Disseminated evidence and guidelines to support sepsis care in BC



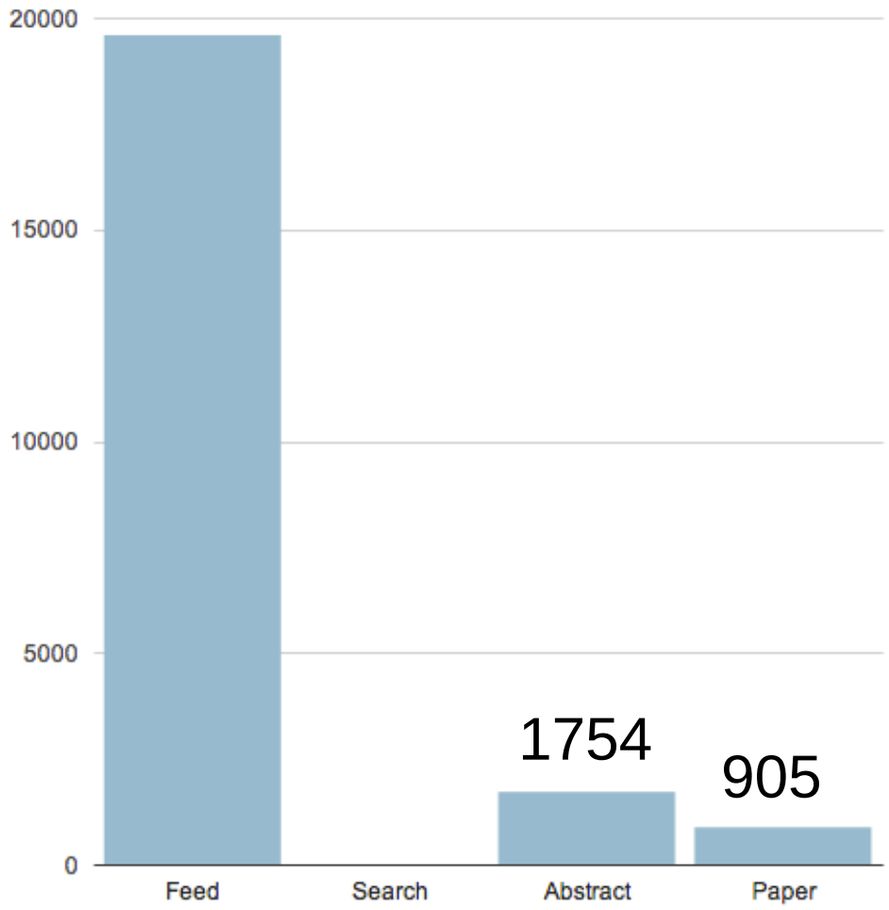
Results

Campaign: 150 Lives in 150 Days (Sepsis) **Start date:** 2013-11-13

Summary

Views: 22289

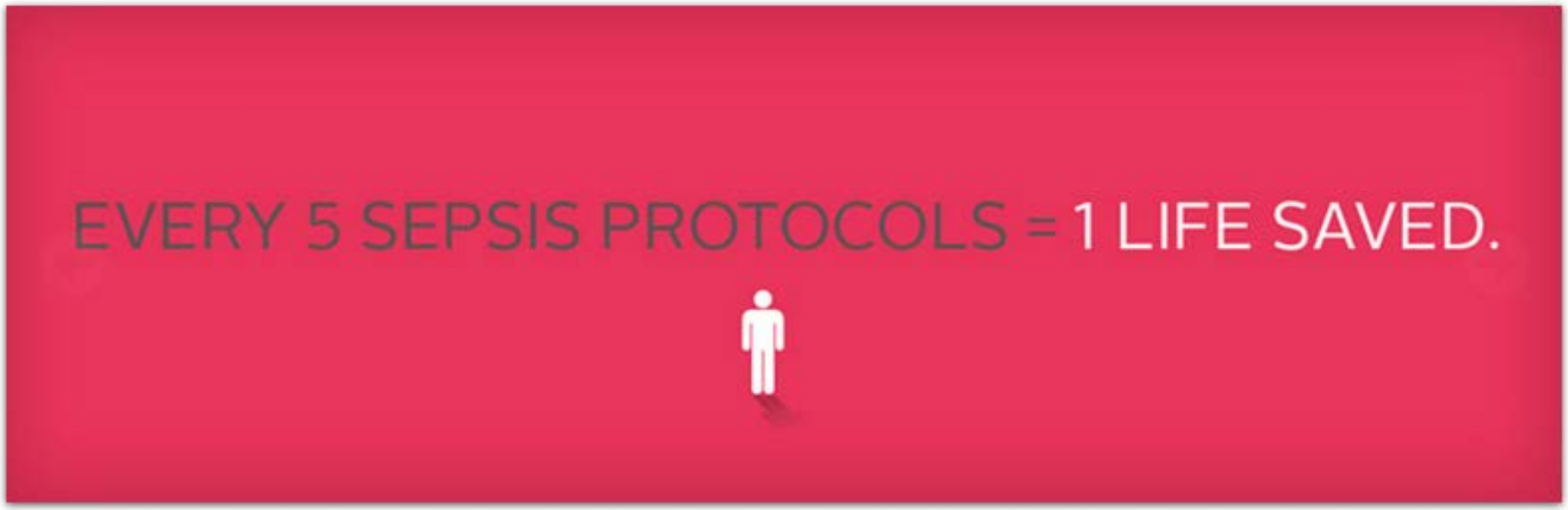
by View Type



by Profession

by Specialty

by Location


EVERY 5 SEPSIS PROTOCOLS = 1 LIFE SAVED.

151
LIVES SAVED

Prognosis in HD

Clin J Am Soc Nephrol. 2010 Jan;5(1):72-9. doi: 10.2215/CJN.03860609. Epub 2009 Dec 3.

Predicting six-month mortality for patients who are on maintenance hemodialysis.

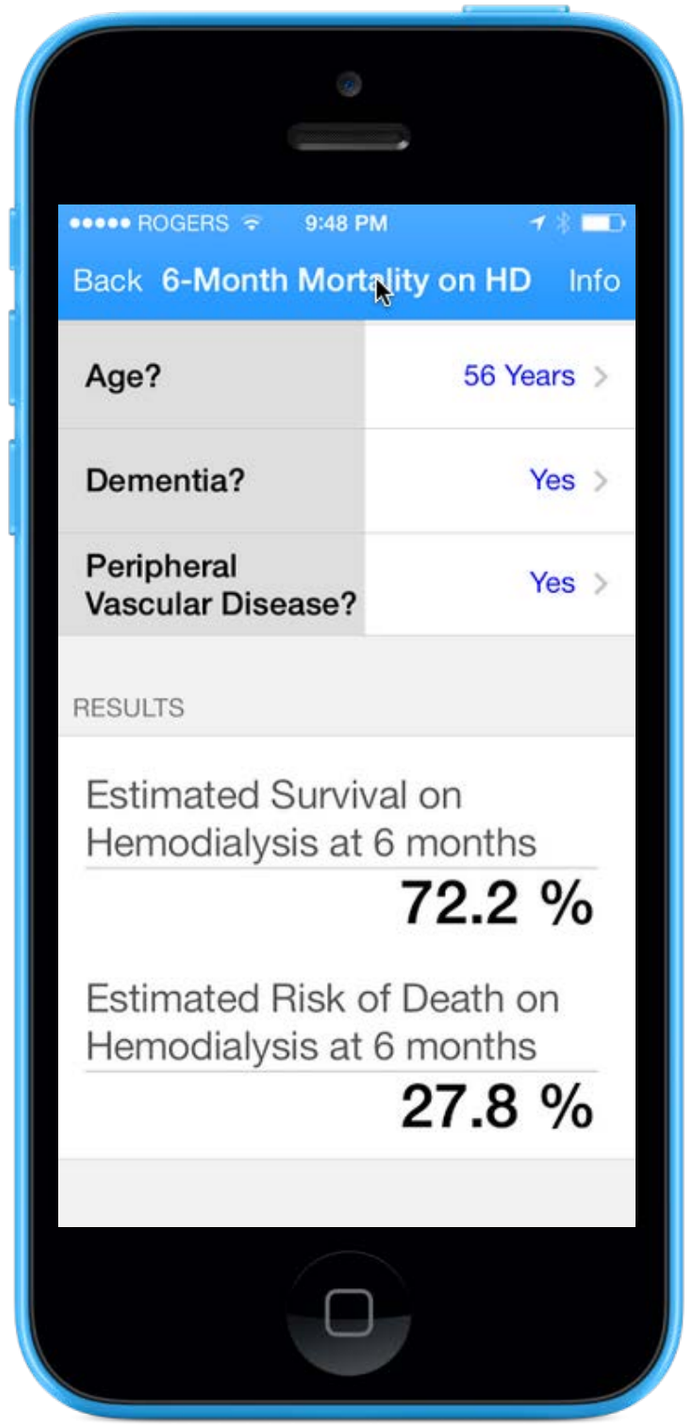
Cohen LM[1], Ruthazer R, Moss AH, Germain MJ.

Open in Read by QxMD

http://qxmd.com/r/19965531

17K/year

Clinicians, via iPhone, iPad, Android, Web

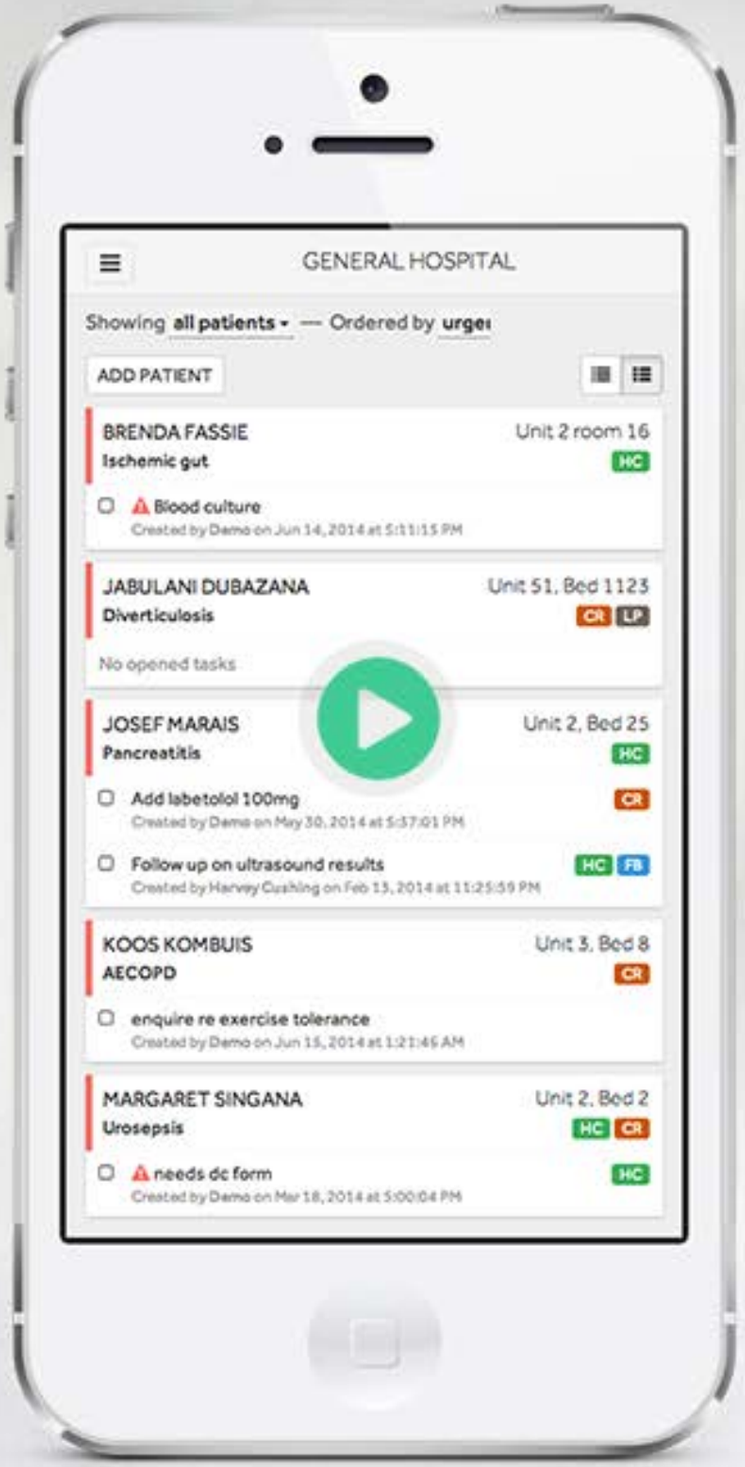


Your team and your patients on your phone — **all the time.**

Get Started

or **Tour the Product**

play video



Made For
I-PASS

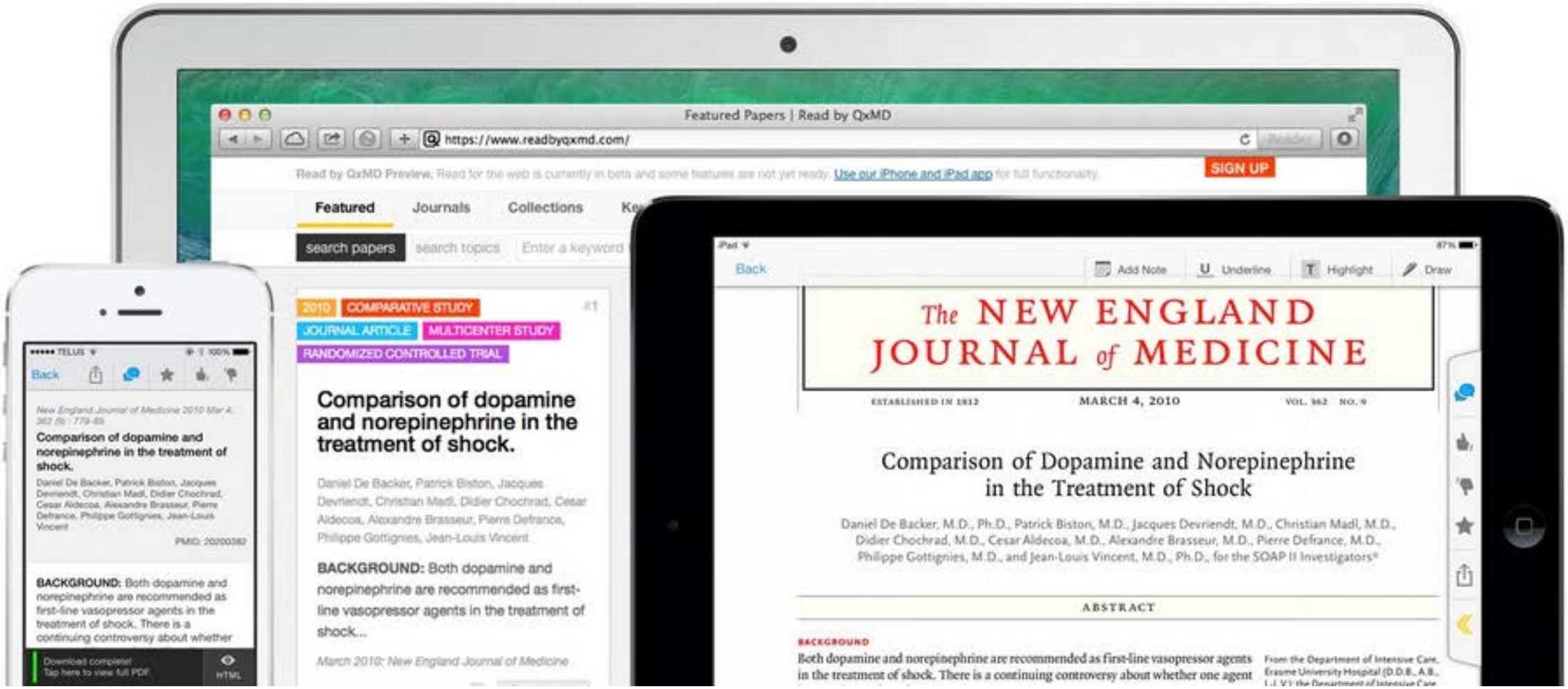
HIPAA Compliant

INTEGRATES WITH

McKESSON Cerner Allscripts Epic

Read: qxmd.com/read

QxMD



Personalized Medical Journal

Recommendation engine provides targeted clinical information to physicians

Inspired

QxMD

"Essential" + "New & Noteworthy"
- Featured by Apple in the App Store

iOS In Healthcare

"The Best Health and Fitness Apps"
TechCrunch

"Redefining Medicine with Apps and iPad"
The New York Times

"Most Innovative" + "Top Medical App"
iMedicalApps

Stellar. The future of medical literature review ★★★★★

I am amazed. Utterly amazed at the quality, the finish and scope of this application. This could be the best application to stay up-to-date in medicine since, well, UptoDate. And UptoDate is around $500 a year. This is free. Incredible.

Play **Flipboard for Medical Journals** ★★★★★

This is by far the most effective and efficient way to stay updated with medical literature. It also logs me in directly to my library logon and enables me to download and store PDF files of the articles. I can also share them on social media. If you are a scientist or clinician, it's a must have! (Reviewer professional designation: PharmD, MSPH, CDE)

QxMD

Active Users

31 Oct 2013 - 30 Sep 2014

Email Export Add to Dashboard Shortcut

All Sessions
100.00%

+ Add Segment

Active Users

1 Day Active Users | 7-Day Active Users | 14-Day Active Users | 30-Day Active Users

QxMD

Active Users

31 Oct 2013 - 30 Sep 2014

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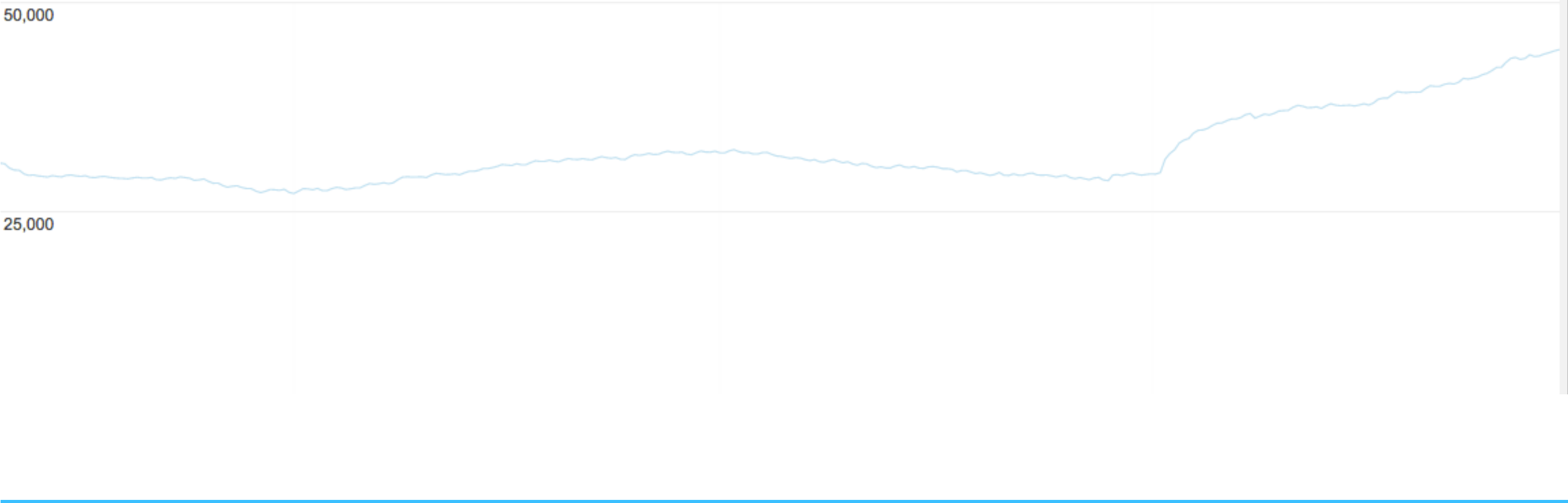


Email

QxMD

Read by QxMD

A/B test outgoing journal emails, subject line D and E

Rationale for 2 tags per email is so we can compare Journal emails vs other emails AND compare various subject lines for Journal emails

A/B Test | Email | Recapture

- ✓ Asssign 50% of emails a 2nd tag "Journal - Subject C — SB
- ✓ Assign 50% of emails a 2nd tag "Journal - Subject D — SB
- ✓ Subject Line C = Latest articles from tracked journals | Read by QxMD — SB
- ✓ Subject Line D = Most recent articles from tracked journals | Read by QxMD — SB
- ✓ Review various subject line performance and pick winner, then launch new variation — Sep 16, 2013 — DS
- ✓ Keep 50% emails with 2nd tag "Journal - Subject D" + change 50% "Journal - Subject C" to Journal - Subject E" — SB
- ✓ Subject Line E = Electronic Table of Contents for Journals | Read by QxMD — SB
- ✓ Compare Subject line D and E and pick winner, then launch new version — Nov 7, 2013 — DS

OPENED	CLICKED
59.16%	8.70%
726,690	106,858

Email

QxMD

Read by QxMD | My Keywords

pain control

Effects of hydroxychloroquine on symptomatic improvement in primary Sjögren syndrome: the JOQUER randomized clinical trial.

Primary Sjögren syndrome is a systemic autoimmune disease characterized by mouth and eye dryness, pain, and fatigue. Hydroxychloroquine is the most frequently prescribed immunosuppressant for the syndrome. However, evidence regarding its efficacy is limited. To evaluate the efficacy of hydroxychloroquine for the main symptoms of primary Sjögren syndrome: dryness, pain, and..

Jul 16, 2014: JAMA : the Journal of the American Medical Association

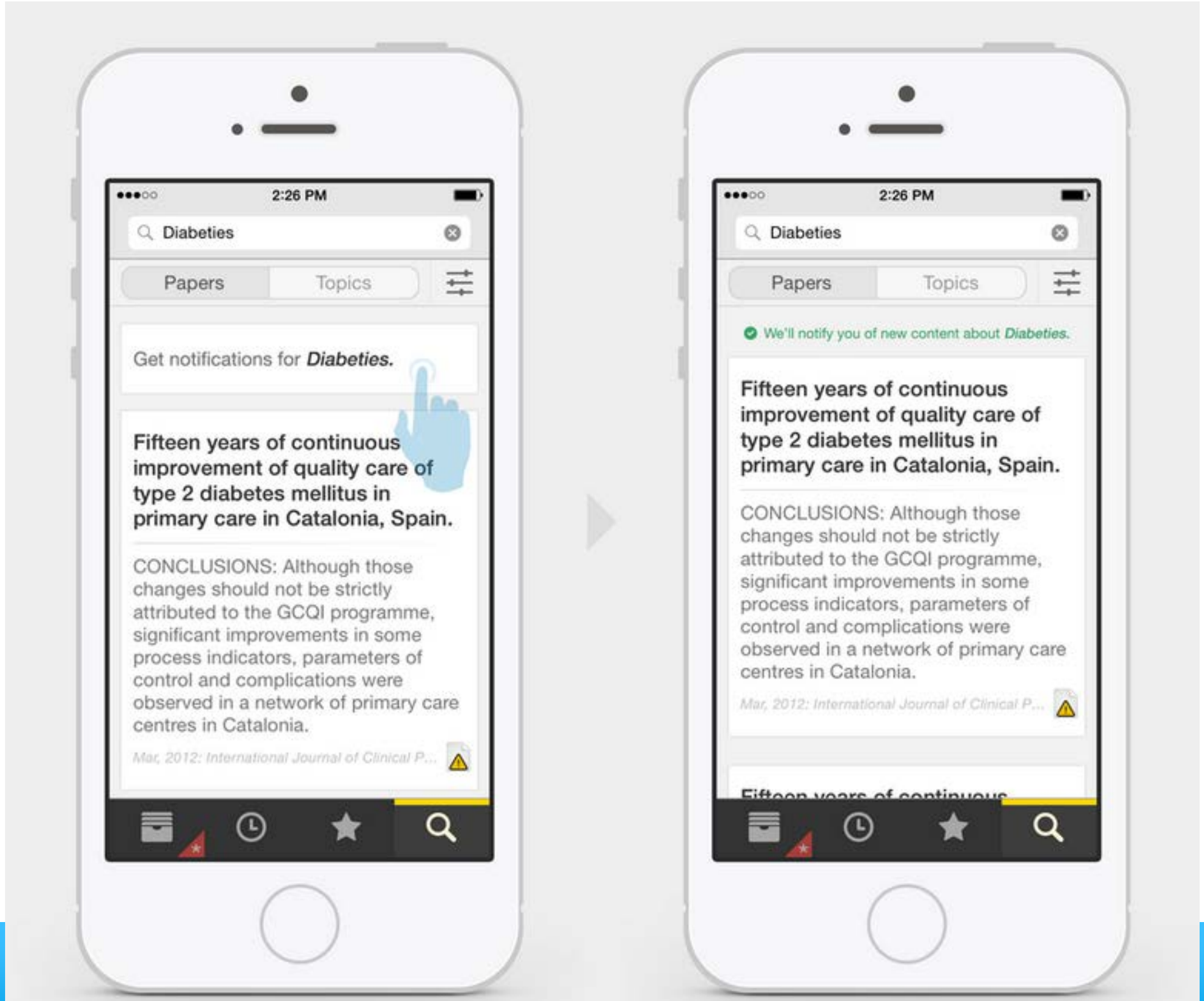
Telecare collaborative management of chronic pain in primary care: a randomized clinical trial.

Chronic musculoskeletal pain is among the most prevalent, costly, and disabling medical disorders. However, few clinical trials have examined interventions to improve chronic pain in primary care. To determine the effectiveness of a telecare intervention for chronic pain. The Stepped Care to Optimize Pain Care Effectiveness (SCOPE) study was a randomized

Best Open %	KEYWORD **85.28**
Best Click %	KEYWORD **13.41**

So drive keywords!

QxMD



Push Notification

QxMD

Active users

Drop

US Gov't

Shutdown

iOS 7

Notification issues

Push notification

Natural Experiment

- Develop Hypothesis
- Trial more PNs

FFR	Breaking: Fractional Flow Reserve–Guided PCI for Stable Coronary Artery Disease (NEJM)	3	25176289	5651	0	1328	6979	Y	2014-09-05 05:16:09
Tuberculous Pericarditis	Breaking: Prednisolone and Mycobacterium indicus pranii in Tuberculous Pericarditis (NEJM)	3	25178809	19757	0	4690	24447	Y	2014-09-05 05:13:41
Lenalidomide	Breaking: Lenalidomide and Dexamethasone in Transplant-Ineligible Patients with Myeloma (NEJM)	3	25184863	1682	0	380	2062	Y	2014-09-05 05:11:24
myeloma	Breaking: Autologous Transplantation and Maintenance Therapy in Multiple Myeloma. (NEJM)	3	25184862	2061	0	1	2062	Y	2014-09-05 05:09:44
ACA	Breaking: Subsidies and the survival of the ACA--divided decisions on premium tax credits. (NEJM)	3	25075618	34731	0	47	34778	Y	2014-09-05 05:08:20
Neprilysin	Breaking: Angiotensin-Neprilysin Inhibition versus Enalapril in Heart Failure. (NEJM)	3	25176015	25981	0	42	26023	Y	2014-09-02 18:58:49
COPPS-2	Trending: Colchicine for Prevention of Postpericardiotomy Syndrome and Postoperative Atrial Fibrillation: The COPPS-2 Randomized Clinical Trial. (JAMA)	3	25172965	16204	0	14	16218	Y	2014-09-02 05:08:01
Pain in Older patient	Trending: Management of Persistent Pain in the Older Patient, A Clinical Review (JAMA)	3	25157726	920	0	0	920	Y	2014-09-02 05:05:17
Self-titration BP	Trending: Effect of self-monitoring and medication self-titration on systolic blood pressure in hypertensive patients at high risk of cardiovascular disease (JAMA)	3	25157723	32678	0	11	32689	Y	2014-09-02 05:03:52
DVT Thrombolysis	Breaking: Catheter-Directed Thrombolysis Plus Anticoagulation vs Anticoagulation Alone to Treat Lower-Extremity Proximal Deep Vein Thrombosis. (JAMA Intern Med)	3	25047081	797	0	2	799	Y	2014-09-02 04:59:21
Minutes per day.	Been busy? Keep up with the latest research with Read in only minutes per day.	4		46729	0	30	46759	Y	2014-09-01 14:39:08
Behavioural Counselling	Breaking: Behavioral Counseling to Promote a Healthful Diet and Physical Activity for Cardiovascular Disease Prevention in Adults With Cardiovascular Risk Factors: USPSTF Recommendation Statement.	3	25155419	92124	0	44	92168	Y	2014-08-31 06:11:25
health reform subscription health policy	Health Reform and Changes in Health Insurance Coverage in 2014 (NEJM)	3	25054609	6158	0	5	6163	Y	2014-08-29 21:36:55
Health reform	Health Reform and Changes in Health Insurance Coverage in 2014 (NEJM)	3	25054609	334	0	0	334	Y	2014-08-29 21:35:58
Adenoma removal	Breaking: Long-Term Colorectal-Cancer Mortality after Adenoma Removal (NEJM)	3	25162886	15721	0	29	15750	Y	2014-08-29 21:33:48
QALY 50K	Perspective: Updating cost-effectiveness--the curious resilience of the $50,000-per-QALY threshold.	3	25162885	91916	0	32	91948	Y	2014-08-29 14:33:29
ESC ESA	Trending: 2014 ESC/ESA Guidelines on non-cardiac surgery: cardiovascular assessment and management	3	25086026	4153	0	0	4130	Y	2014-08-28 03:38:22

QxMD

Implemented new screens Sep 14

No co-interventions

QxMD

New Users

Sep 14, 2014 - Sep 21, 2014
Compare to: Sep 6, 2014 - Sep 13, 2014

Email | Export | Add to Dashboard | Shortcut

iOS Traffic
+2.60%

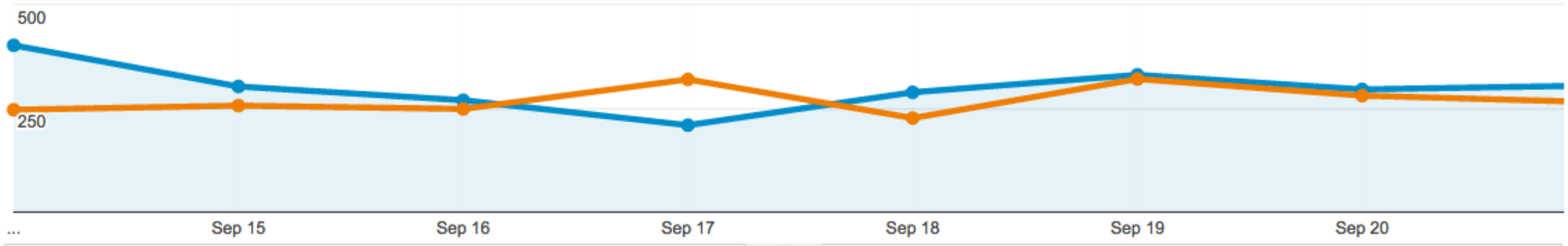
+ Add Segment

Overview

New Users vs. Select a metric

Hourly | Day | Week | Month

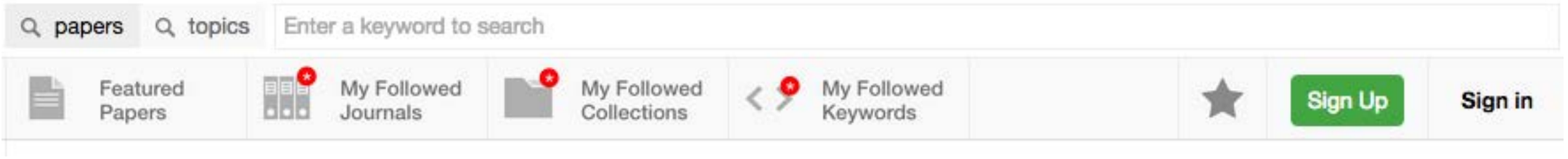
Sep 14, 2014 - Sep 21, 2014: New Users
Sep 6, 2014 - Sep 13, 2014: New Users

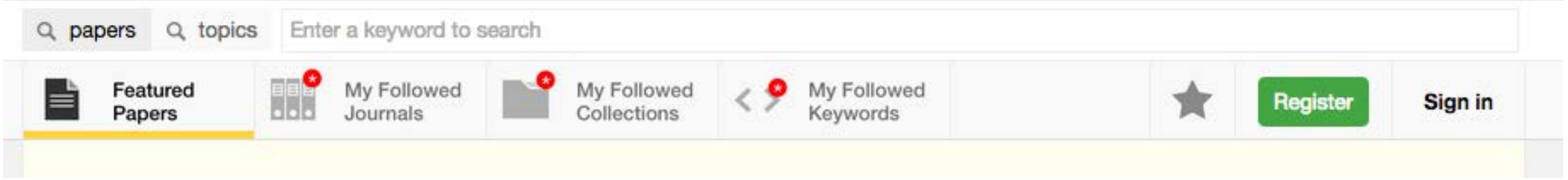


New Users
iOS Traffic
11.02%
2,398 vs 2,160

Users
iOS Traffic
8.06%
18,147 vs 16,793

Sessions
iOS Traffic
10.55%
40,327 vs 36,478

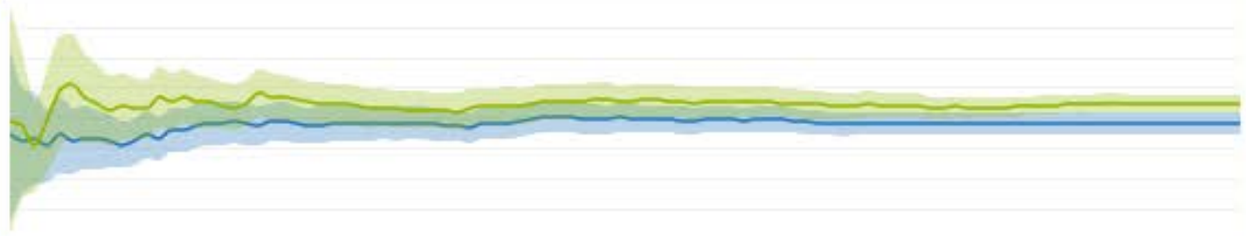

papers
topics
Enter a keyword to search
Featured Papers
My Followed Journals
My Followed Collections
My Followed Keywords
Sign Up
Sign in


papers
topics
Enter a keyword to search
Featured Papers
My Followed Journals
My Followed Collections
My Followed Keywords
Register
Sign in

GOAL
Register

Variation #1 is currently winning.

Launch

	VISITORS	CONVERSION RATE	IMPROVEMENT	CONVERSION RATE OVER TIME
Variation #1 VARIATION	5768	4.91%	+36.8%	
Original BASELINE	2425	3.59%		

GOAL
Register

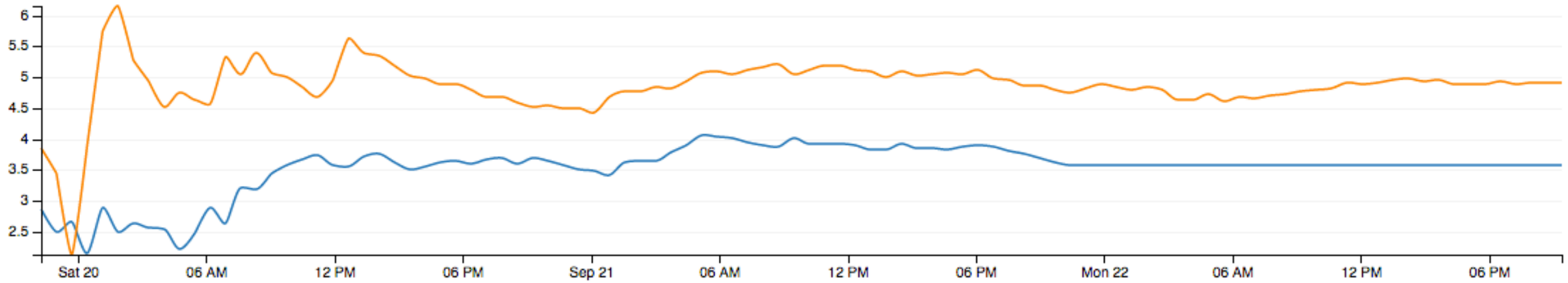
Expand

Variation #1 is currently winning.

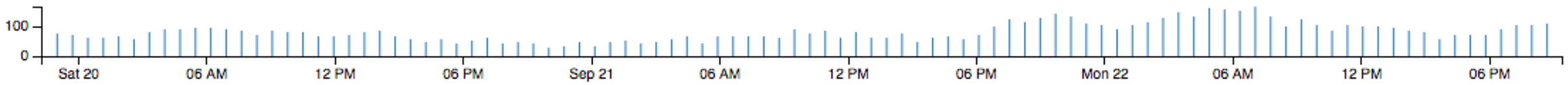
Launch

Conversion Rate Over Time

View Annotations



[click and drag on the chart below to zoom in]



VARIATION	VISITORS	CONVERSIONS	CONVERSION RATE	IMPROVEMENT	CHANCE TO BEAT BASELINE
Register: Everyone / All Visitors					
Original	2425	87	3.59% (±0.74)	---	---
Variation #1	5768	283	4.91% (±0.56)	+36.8%	100%

QxMD

papers topics Enter a keyword to search

Featured Papers | My Followed Journals | My Followed Collections | My Followed Keywords | Sign Up | Sign in

Evolutionary rescue in a changing world

Stephanie M Carlson, Curry J Cunningham, Peter A H Westley

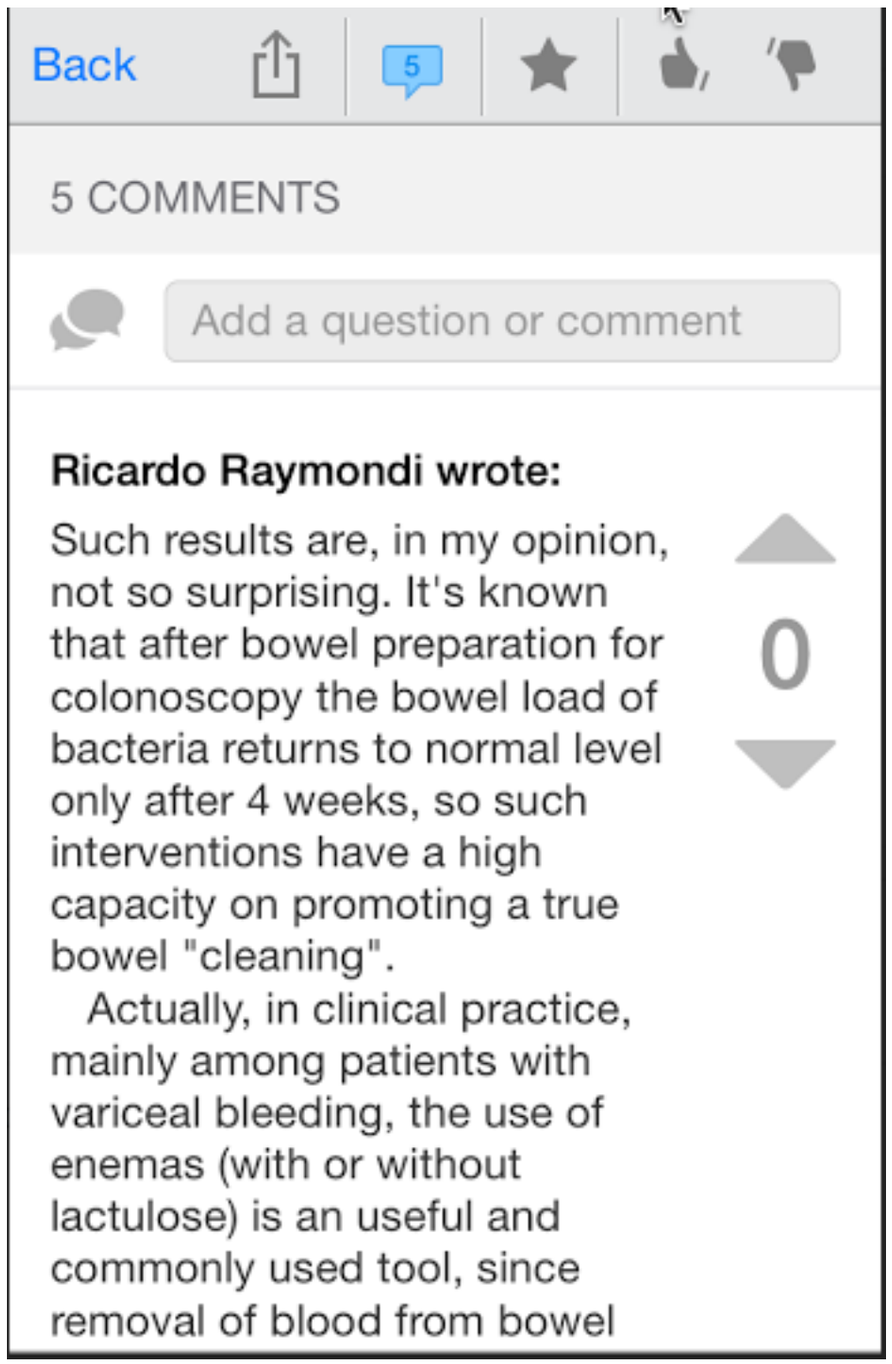
Trends in Ecology & Evolution 2014, 29 (9): 521-530

2

Evolutionary rescue occurs when adaptive evolutionary change restores positive growth to declining populations and prevents extinction. Here we outline the diagnostic features of evolutionary rescue and distinguish this phenomenon from demographic and genetic rescue. We then synthesize the rapidly accumulating theoretical and experimental studies of evolutionary rescue, highlighting the demographic, genetic, and extrinsic factors that affect the probability of rescue. By doing so, we clarify the factors to target through management and conservation. Additionally, we identify several putative cases of evolutionary rescue in nature, but conclude that compelling evidence remains elusive. We conclude with a horizon scan of where the field might develop, highlighting areas of potential application, and suggest areas where experimental evaluation will help to evaluate theoretical predictions.

Read this article (multiple options)

Read Full Text Now (multiple options)



20% of all comments submitted, ever, came 14 days after design overhaul

Orders - All Users | Orders - Non Pin Users | Query Maps | Clinical Data | Dietary | Pharmacy | Amb Orders

Facility	Active
Facility A	Yes
Facility B	Yes
Facility C	No

Training Printer	Order Management Dev Printer
Stop Orders	24
Generate New Order on Om Renew	No
Provider Stop Reason Default	Doctor order
Default Access Group	View Only Access
Default Interaction/Conflict Group	
Interaction Auto-Override Comment	Multiple Routes
Disable Forms Printing	Silent
Duplicate Reason Category	OM Duplicate Order Comments
Default Duplicate Reason	Doctor's Orders
Transfer Order	Patient Transfer
Transfer Continue Orders - Create New Orders for	Both
Transfer Stop Orders - Stop Reason Default	

Update Clinical Data Queries

- Do you smoke? [SMOKE]
- Test Multiple [MULT1]
- Resuscitation Status [GEN.RS]

Update Clinical Data Fields

- Specimen
- Mode Of Transportation
- Is Patient Pregnant

ve improvement with data & inspi