



The Office of the National Coordinator for
Health Information Technology

Consumer Health Data Aggregator Challenge & Provider User Experience Challenge

March 20, 2017



ONC Challenge Goals

- Better health, better care, lower cost
- Spotlight areas of high interest to ONC and HHS
- Direct attention and investment to new market opportunities
- Increase awareness and uptake of new standards, data, and tools

Interoperability and APIs

- Patient data remains scattered across different sources
- Digitization of data and its availability through EHRs enables great opportunities for innovation
- Standardized APIs allow data to be moved and aggregated by clinicians and patients

Connecting and Accelerating a FHIR App Ecosystem

- Technology that can pull info from different sources and present it in a user-friendly way is limited
- Community-driven, user-focused innovation to build a stronger health IT ecosystem
- Three-part strategy:
 - Consumer Health Data Aggregator Challenge
 - Provider UX Challenge
 - Discovery Infrastructure for Clinical Health IT Apps Cooperative Agreement



Twin Challenges

- Consumer Health Data Aggregator Challenge
 - Help consumers aggregate their data in one place, under their control
- Provider User Experience Challenge
 - Enable innovative ways for providers to interact with patient health data



App Features

Technical Requirements

- Uses FHIR Draft Standard for Technical Use 2 (DSTU2)
- Leverages data as specified in the 2015 Edition Common Clinical Data Set

Targets

- Verified compatibility with different health IT developer systems implemented in production settings
- Tested with real users
- Market-ready and available



Submission Requirements

Phase 1

- Mockup/wireframes of the app
- Technical specifications
- Business/sustainability plan
- Provider partnership

Phase 2

- Access to the app or a private demo version
- To highlight FHIR capabilities:
 - Video demo
 - Slide deck



Review Criteria

Phase 1

- Technical feasibility of plan, including number of EHR sources targeted
- Adherence to data privacy and security best practices and applicable law (including HIPAA)
- Strength of business/sustainability plan
- Provider and/or health IT developer partnerships
- *(Provider)* Impact potential in clinical setting

Phase 2

- Number, sources, and types of data aggregation using FHIR
- Functionality and quality of data aggregation
- Privacy and security of patient data
- User experience and visual appeal
- *(Provider)* Impact potential in clinical setting



First Place Winner of the ONC's
Consumer Health Data Aggregator
Challenge

- A cloud-based mobile responsive application designed to make it easy for patients to gather their medical information from all their providers then manage and share the information from one accessible and secure location
- Secure bi-directional communication with physicians, family and friends, and researchers

with a goal that this connection will result in better care for us and for those who come after us

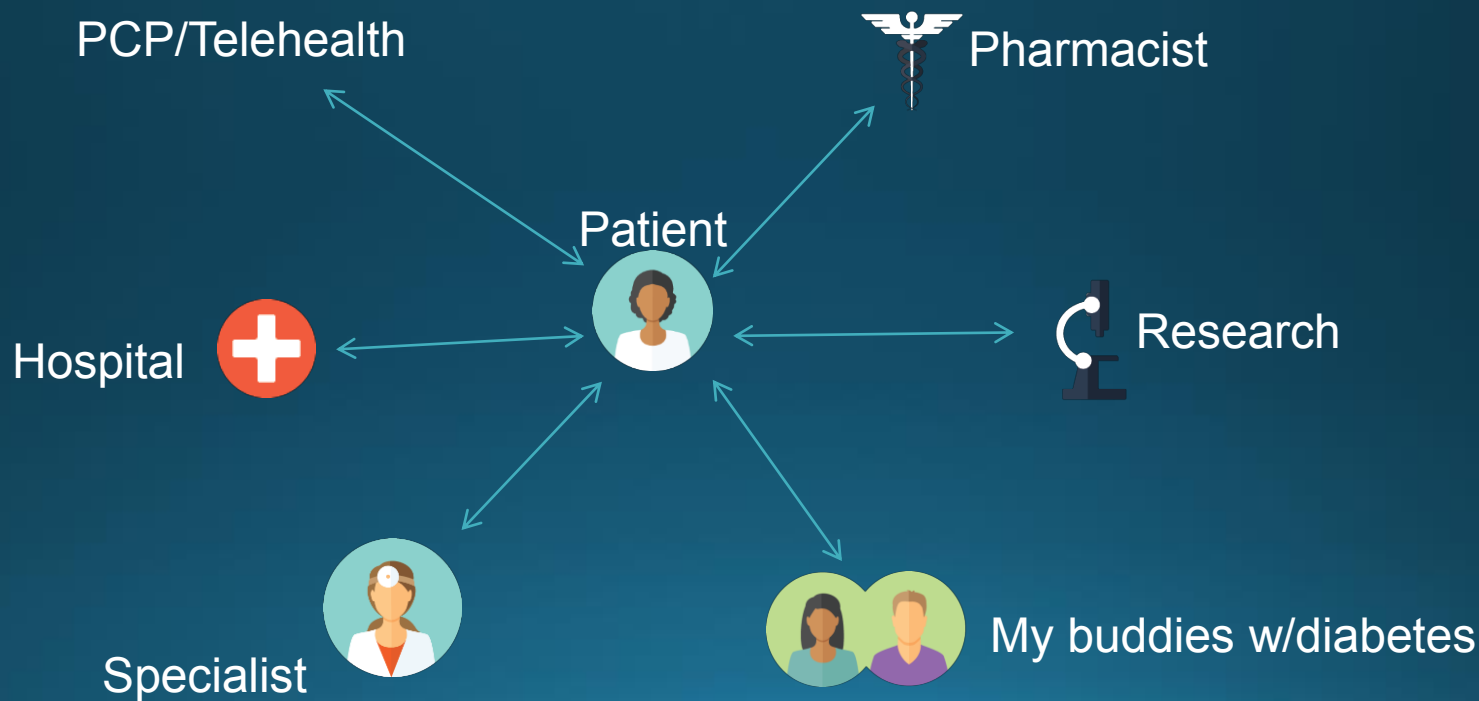


When Diagnosed With An Illness







- We need to connect with 3 important groups of people:
 - Our medical providers: for us to receive and share our medical Information and better understand our conditions
 - With our family and care team: to help us manage our illness
 - Researchers: to understand and join with researchers to find cures faster.

A Secure Platform to Link and Share With Others




MyLinks Has Easy Navigation Buttons


MyLinks  Documents Health Record Journal Research ▾ Forum

debi ▾   

Welcome to MyLinks. Let's get started! [Take a tour](#)




The central navigation hub is a circular diagram with a central female user icon. Six dashed lines radiate from this center to various icons and labels: a heart with an ECG line for 'Health Devices', a clipboard with a red cross for 'Combined charts', a female user icon for 'Manage family's records', a caduceus for 'Patient Education', a male user icon for 'Connect with other patients', and a microscope for 'Research'. A female doctor icon is also connected to the center, labeled 'Secure Communication'.




My Health Record

[Devices](#) [Share](#) [Import](#)




Health Tools

[Information](#) [Tools](#)



Participate in Research

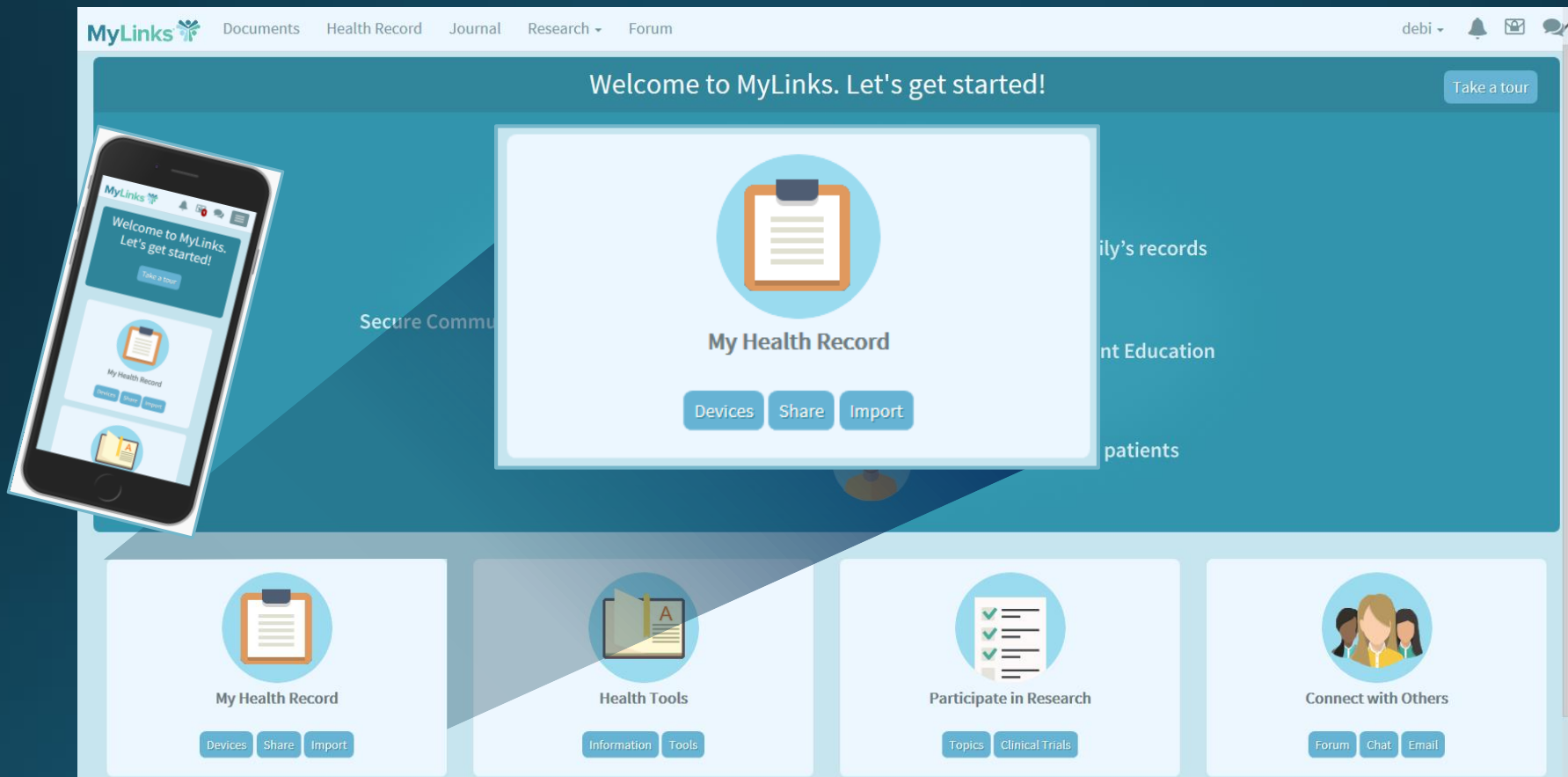
[Topics](#) [Clinical Trials](#)



Connect with Others

[Forum](#) [Chat](#) [Email](#)

View, Share, Import: Health Record or Device Data



View Health Education Information and Tools

The screenshot displays the MyLinks web application interface. At the top, a navigation bar includes the MyLinks logo and links for Documents, Health Record, Journal, Research, and Forum. A user profile 'debi' and notification icons are on the right. The main header area says 'Welcome to MyLinks. Let's get started!' with a 'Take a tour' button. A central hub features icons for Health Devices (heart), Secure Communication (person with headset), and Research (microscope), connected by dashed lines. To the left, a smartphone displays the app's mobile interface with sections for Health Tools and Participate in Research. On the right, a large white box highlights 'Health Tools' with sub-links for Information and Tools. The bottom of the page has four main feature tiles: 'My Health Record' (with sub-links: Devices, Share, Import), 'Health Tools' (with sub-links: Information, Tools), 'Participate in Research' (with sub-links: Topics, Clinical Trials), and 'Connect with Others' (with sub-links: Forum, Chat, Email).

MyLinks Documents Health Record Journal Research Forum debi

Welcome to MyLinks. Let's get started! Take a tour

Health Devices

Secure Communication

Research

Health Tools

Information Tools

My Health Record

Devices Share Import

Health Tools

Information Tools





Participate in Research

Topics Clinical Trials


Connect with Others

Forum Chat Email

Indicate a Desire to Participate in Research and Find Research


MyLinks  Documents Health Record Journal Research Forum debi   

Welcome to MyLinks. Let's get started! [Take a tour](#)




Participate in Research



[Topics](#) [Clinical Trials](#)




Combined charts




Manage family's records



Patient Education




Connect with other patients




My Health Record

[Devices](#) [Share](#) [Import](#)




Health Tools

[Information](#) [Tools](#)



Participate in Research

[Topics](#) [Clinical Trials](#)



Connect with Others

[Forum](#) [Chat](#) [Email](#)

Connect With Others via Forums, Chat, Email

The screenshot displays the MyLinks web application interface. At the top, a navigation bar includes the MyLinks logo and links to Documents, Health Record, Journal, Research, and Forum. A user profile 'debi' is visible in the top right corner with notification and chat icons. The main content area features a large teal banner with the text 'Welcome to MyLinks. Let's get started!' and a 'Take a tour' button. Below this, a central white box titled 'Connect with Others' contains an icon of three people and buttons for 'Forum', 'Chat', and 'Email'. The bottom of the interface is divided into four white tiles: 'My Health Record' (with a clipboard icon and buttons for Devices, Share, Import), 'Health Tools' (with a book icon and buttons for Information, Tools), 'Participate in Research' (with a checklist icon and buttons for Topics, Clinical Trials), and 'Connect with Others' (with a group of people icon and buttons for Forum, Chat, Email). The interface uses a clean, modern design with a teal and white color scheme.

MyLinks Documents Health Record Journal Research Forum

debi

Welcome to MyLinks. Let's get started! [Take a tour](#)

Health

Secure Communication

Records

ication

nts

Connect with Others

Forum Chat Email

My Health Record

Devices Share Import

Health Tools

Information Tools

Participate in Research

Topics Clinical Trials

Connect with Others

Forum Chat Email

Importing Your Health Record

The screenshot displays the MyLinks web application interface. At the top, a navigation bar includes the MyLinks logo and links for Documents, Health Record, Journal, Research, and Forum. A user profile 'debi' with notification, email, and chat icons is in the top right. A large teal banner at the top contains the text 'Welcome to MyLinks. Let's get started!' and a 'Take a tour' button. Below the banner, a central light blue box titled 'My Health Record' features a clipboard icon and three buttons: 'Devices', 'Share', and 'Import' (which is highlighted in green). To the right of this box, text reads 'e family's records', 'Patient Education', and 'other patients'. At the bottom, four white cards are visible: 'My Health Record' (with 'Import' highlighted), 'Health Tools' (with 'Tools' highlighted), 'Participate in Research' (with 'Clinical Trials' highlighted), and 'Connect with Others' (with 'Email' highlighted).

MyLinks Documents Health Record Journal Research Forum debi

Welcome to MyLinks. Let's get started! Take a tour

My Health Record

Devices Share Import

Secure Communi

e family's records

Patient Education

other patients

My Health Record

Health Tools

Participate in Research

Connect with Others

Devices Share Import

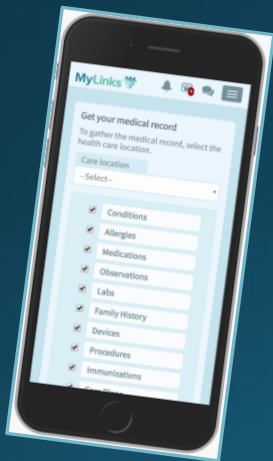
Information Tools

Topics Clinical Trials

Forum Chat Email

Gather Medical Records via FHIR

- 1 Choose care location
- 2 Select categories
- 3 Select dates



Get your medical record

To gather the medical record, select the health care location.

Care location Lakeside Family Care (NextGen)

☒ Conditions

☒ Allergies

☒ Medications

☒ Observations

☒ Labs

☒ Family History

☒ Devices

☒ Procedures

☒ Immunizations

☒ Care Plans

☐ Any date

☒ Use date range

Note: Not all categories honor a date range.

Date From 08/01/2016

Date To 10/20/2016

Get medical record

Gather Medical Records via FHIR

View existing data on left. Import desired items on right.

Conditions

Existing Conditions

Arthritis



Asthma



Myalgia and myositis NOS



Pneumonia



Conditions to be imported



Import

Name: Colonic adenomatous polyp



Status: active



Import

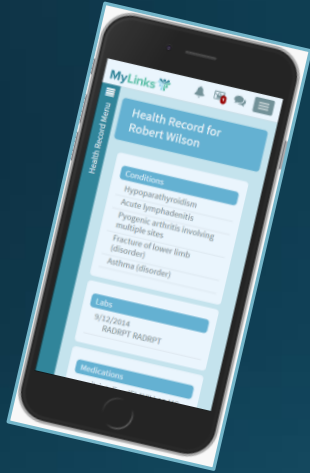
Name: Back pain



Status: resolved

Import Selected

View Medical Records



Health Record for Betty Shelton

Conditions

Arthritis

Pneumonia

Myalgia and myositis NOS

Asthma

Colonic adenomatous polyp

Labs

11/8/2015	POTASSIUM	Component: POTASSIUM BLOOD
10/3/2015	CBC AND DIFFERENTIAL	Narrative

Procedures

Repair umbilical lesion	3/17/2016
Remove tonsils and adenoids	3/17/2016

Medications

CLARITHROMYCIN

SOMA

Allergies

Food: Eggs

Medication: Penicillins

Codeine

Immunizations

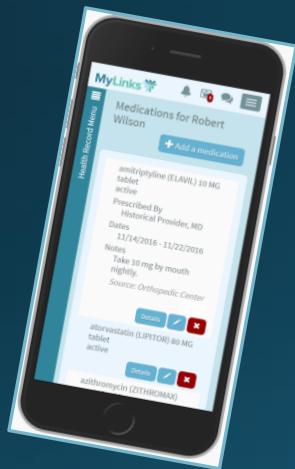
influenza virus vaccine, inactivated

Pneumococcal Conjugate,
unspecified formulation

Equipment

G754-B

View Medical Record Details



Medications for Robert Wilson

+ Add a medication

amitriptyline (ELAVIL) 10 MG tablet active

Details



Prescribed By
Historical Provider, MD

Dates
11/14/2016 - 11/22/2016

Notes
Take 10 mg by mouth nightly.

Source: Orthopedic Center

atorvastatin (LIPITOR) 80 MG tablet active

Details



azithromycin (ZITHROMAX) 500 MG tablet active

Details



digoxin (LANOXIN) 125 MCG tablet active

Details



ISOTretinoin (ACCUTANE) 30 MG capsule active

Details



lisinopril (PRINIVIL, ZESTRIL) 5 MG tablet active

Details



rosiglitazone (AVANDIA) 2 MG tablet active

Details



Gather Medical Records via CCD

- 1 Import a CCD from an email attachment or local file
- 2 Elements parsed as structured data
- 3 Document stored for easy sharing

This screenshot shows a file selection interface. At the top, there is a 'Select All' checkbox, 'Delete' and 'Send' buttons, and a file size indicator '202.7 KB / 50.0 MB 0.4%'. Below this, there are three file entries, each with a checkbox, a text field containing the filename, and 'View', 'Download', and a menu icon button.

File Name	View	Download	Menu
<input type="checkbox"/> EnidHospital_09-12-2016.XML	View	Download	Menu
<input type="checkbox"/> EnidHospital_09-12-2016(1).XML	View	Download	Menu
<input checked="" type="checkbox"/> CCD from Dr. Thomas.XML 3	View	Download	Menu

This screenshot shows the 'Import a Care Document (CCD)' interface. It has a title '1 Import a Care Document (CCD)' and a subtitle 'Use this page to decide what you want to be imported from the care document and make changes as needed.' The interface is divided into two main sections: 'Allergies' and 'Conditions'.

Allergies

Existing Allergies: Penicillins

Allergies to be imported:

Import	Name	Allergy Type	Status	Start Date
<input checked="" type="checkbox"/> Import	CODEINE PHOSPHATE	drug allergy	Active	9/18/2014
<input checked="" type="checkbox"/> Import	BICILLIN L-A	drug allergy	Active	9/18/2014

Conditions

Existing Conditions: Diabetes mellitus, Hypertension, Sinusitis

Conditions to be imported:

Import	Name	Status	Start Date	End Date
<input checked="" type="checkbox"/> Import	Costal chondritis	Active	9/18/2014	10/30/2014
<input checked="" type="checkbox"/> Import	Asthma, unspecified	Active	9/25/2011	

View Document Content and History

MyLinks

Documents

Health Record

Journal

Research

Forum

BettyS

Add a Document

☐ Select All

Delete

Send

5.5 MB / 50.0 MB

11.0%

☒ Northside Clinic.XML

View

Download

☐ Power of Attorney.PDF

View

Download

☐ Release of Information.PDF

View

Download

View

Download

Conditions or Problems

Problem Name	Problem Code	Onset Date	Status	Entry Date	P
Costochondritis	64109004 (SNOMED CT)	2014/09/18	Active	2014/09/18	S
ASTHMA	493.9 (ICD-9-CM)	2011/09/25	Active	2014/09/18	S

Medications

Medication	Instructions	Start Date
PROVENTIL HFA 108 (90 Base) MCG/ACT AERS	2 puffs every 6 hours PRN wheezing	2012/07/01

Allergies, Adverse Reactions, Alerts

Allergy Name	Reaction Description	Start Date
CODEINE PHOSPHATE	Nausea	2014/09/18
BICILLIN L-A	Hives	2014/09/18

Procedures

Code	Procedure Name	Date
CPT-82374	CO2	2014

OKLAHOMA ADVANCE DIRECTIVE FOR HEALTH CARE

PAGE 1 OF 8

If I, Betty Shelton (name), am incapable of making an informed decision regarding my health care, I direct my health care providers to follow my instructions below.

Part I. Living Will

If my attending physician and another physician determine that I am no longer able to make decisions regarding my medical treatment, I direct my attending physician and other health care providers, pursuant to the Oklahoma Advance Directive Act, to follow my instructions as set forth below.


1. If I have a terminal condition, that is, an incurable and irreversible condition that even with the administration of life-sustaining treatment will, in the opinion of the attending physician and another physician, result in death within six (6) months:

Document History

- 10/13/2016 6:29:29 AM - Uploaded
- 10/20/2016 11:07:58 AM - Emailed Emailed to: drthomas@secure.mylinks.com on 10/20/2016 11:07:57 AM

OK

Receive & Send Documents for Better Care Management

MyLinks




Documents

Health Record

Journal

Research ▾

Forum

BettyS ▾

Add a Document


☐ Select All

DeleteSend


5.5 MB / 50.0 MB

11.0%


☒ Northside Clinic.XML

ViewDownload


☐ Power of Attorney.PDF

ViewDownload

☐ Release of Information.PDF

ViewDownload


☐ DNR.PDF

ViewDownload

Send information via Direct address

Discard

Save As Draft

 Send

To:

* drthomas@secure.mylinks.com

CC:

* BobbyS@gmail.com

Subject:


Fall injury last weekend


B


I


~~S~~


U




























I had a fall and was admitted to Enid Hospital last weekend. I have attached my records and x-ray. I signed an advance directive document and sending it also.

Attachments


EnidHospital_09-12-2016.XML




EnidHospital_HeadXRay.jpg



Advance_Directive.pdf



Add attachment from MyLinks Documents




Upload attachment from My Computer




Multiple Ways to Link and Share




- FHIR – used to gather health data directly from clinics
- Direct Messaging – for secure bi-directional communication and sending of data
- Forums for gathering and sharing around health related topics
- Internal instant messaging to connect privately or with a group

Export Health Record

 Documents Health Record Journal Research ▾ Forum


BettyS ▾   1 

Share your Health Record




Export your health record

Select the entries in your health record that you wish to export. You can save a PDF to your computer or device, or you can send the selected information via your MyLinks secure email.



24 hour, view only

Send someone a link that will allow them to view your health record for 24 hours.




Share Access




Give a caretaker the ability to manage your health record. They will be able to make changes on your behalf, but they cannot send messages or make changes to the account outside of the health record. You can revoke access at any time.

© 2016 MyLinks


[terms](#) [privacy](#)

24 Hour, View Only Access

 Documents Health Record Journal Research ▾ Forum


BettyS ▾   1 

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[terms](#) [privacy](#)

Grant access to caregiver or family

 Documents Health Record Journal Research ▾ Forum


BettyS ▾   

Share your Health Record




Export your health record

Select the entries in your health record that you wish to export. You can save a PDF to your computer or device, or you can send the selected information via your MyLinks secure email.



24 hour, view only

Send someone a link that will allow them to view your health record for 24 hours.



Share Access


Give a caretaker the ability to manage your health record. They will be able to make changes on your behalf, but they cannot send messages or make changes to the account outside of the health record. You can revoke access at any time.

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[terms](#) [privacy](#)

Participate in Research

Patients indicate specific topics of interest

MyLinks

DocumentsHealth RecordJournalResearch ▾Forum



BettyS ▾

Select a Research Topic to Follow

Topic Search

Search

My Research Interests

	Research Topic	I want to participate	I want to receive updates
	Autism	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Alzheimer's Disease Causes, Stages, and Symptoms	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Participate in Research

Researchers view stats of potential candidates

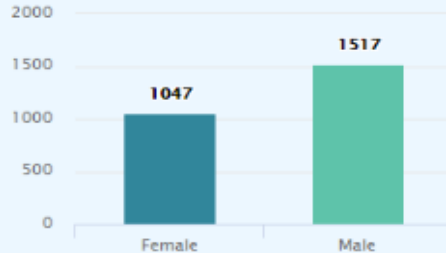
Inclusion Criteria

Has History of High blood pressure ▼

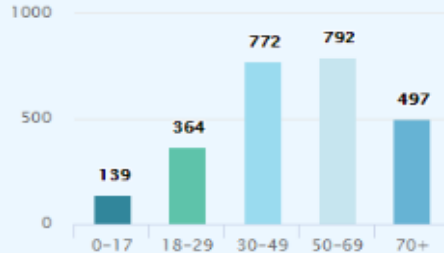
Family History of Diabetes ▼

Add additional criteria

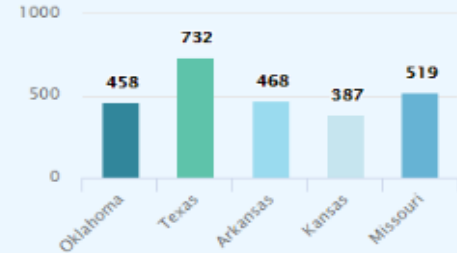
Potential Participants by Gender



Potential Participants by Age



Potential Participants by State



Currently 2,564 potential participants

Request Medical Record

Send Form

Securely Email

Participate in Research

Answer questionnaires directly from researchers

Have you been told you have high cholesterol?

☐ Yes

☐ No

☐ Don't know

Have you been told you have high triglycerides?

☐ Yes

☐ No

☐ Don't know

Are you taking any prescription cholesterol lowering drugs?

(Including, but not limited to, fish oil, fibrates, niacin > 50 mg/day, or bile acid sequestrants)

☐ Yes

☐ No

Do you have a history of confirmed heart attack or stroke, or have been diagnosed with unstable angina (heart pain)?

☐ Yes

☐ No

Do you have diabetes, requiring daily use of insulin or oral medication?

☐ Yes

☐ No

Have you had any cancer within the past 5 years, with the exception of skin cancer?

☐ Yes

☐ No

Participate in Research

Researchers instantly view questionnaire results

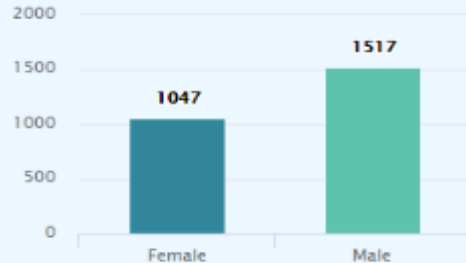
Inclusion Criteria

Has History of **High blood pressure** ▼

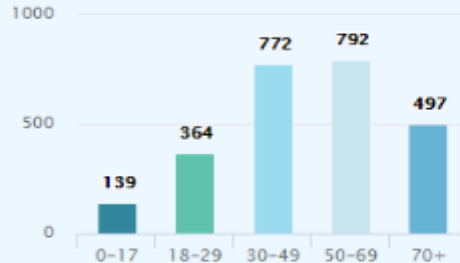
Family History of **Diabetes** ▼

Add additional criteria

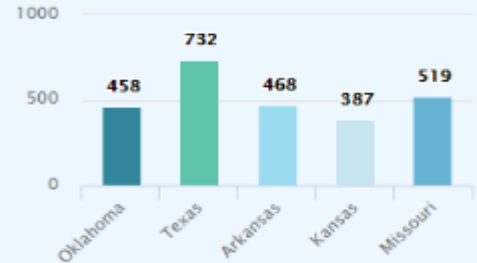
Potential Participants by Gender



Potential Participants by Age



Potential Participants by State



Currently 2,564 potential participants

Request Medical Record

Send Form


Securely Email

Participate in Research

Communicate directly with researchers via Direct email

Discard

Save As Draft

 Send

To:

✖

AutismResearch@direct.mail.com

CC:

Type Name or Address

Subject:


My cousin would like to participate


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
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
U



























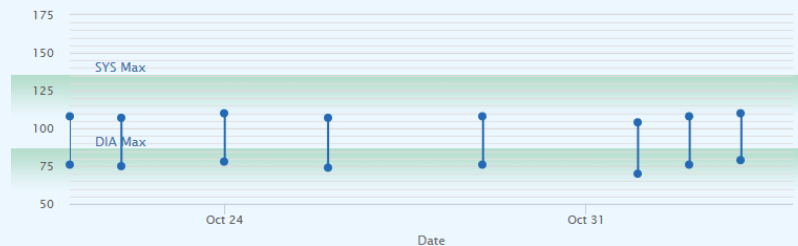


My cousin has a 3 year old who just got diagnosed with autism. I told her about your study and she really wants to join. Is that possible?

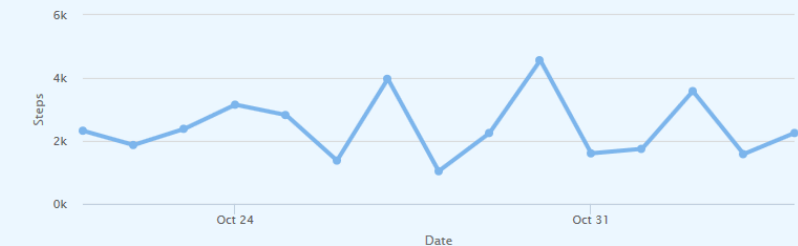
Connect Your Devices

Monitor data from all your devices in one place

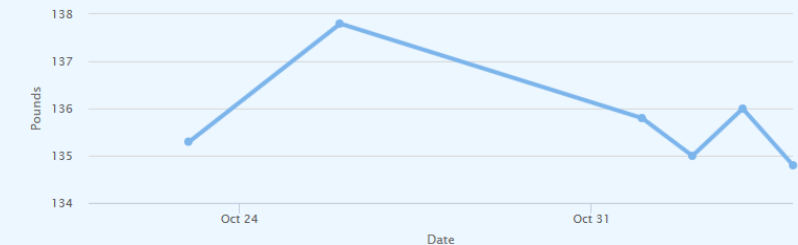
Withings Blood Pressure



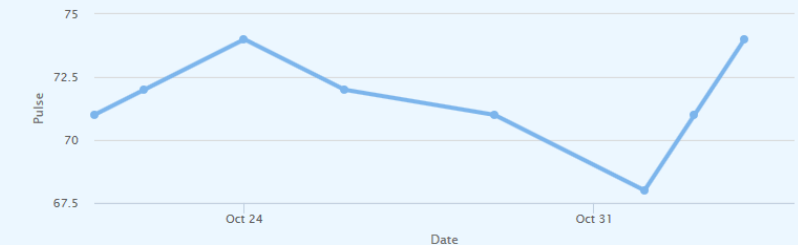
Withings Steps



Withings Weight















Withings Pulse



Keep a Journal

- Journaling has many health benefits
 - Clarify your thoughts and feelings
 - Identify items that impact how you feel (activities, food, environments, meds, etc.)
 - Come to terms about stressful events, reducing the impact of stress
 - Tracking your progress over time to see your improvements

10/9/2016		 
Today I experienced quite a bit of fatigue. Foggy headed and wondering if the candy bars were too much.		
10/8/2016		 
Great day. Went for a hike. Had no symptoms. Had 2 candy bars for energy.		
10/6/2016		 
Pretty good day. Some aches and pains, but still functioning normally. Took some Vitamin D and tried to stay away from chocolate.		
10/3/2016		 
Walked on the treadmill today. Took it slow. Drank a lot of water.		

List of FHIR Connections

- Seven unique connections include:
 - AthenaHealth Clinicals EHR
 - Epic EMR
 - NextGen Ambulatory EHR
 - Cerner EHR
 - Allscripts TouchWorks EHR
 - Allscripts Sunrise EHR
 - Allscripts Professional EHR

Security

- MyLinks utilizes Microsoft Azure HIPAA Compliant Services
- All data is encrypted at rest and in transit
- Enterprise-level account management system allows for account locking after multiple failed login attempts
- Login uses security image identification, secret questions, secure salted password hashing with adjustable iterations, and optional two-factor authentication support via mobile phone or messaging.
- Account sharing requires PIN verification from account owner

Contact Information



Debi Willis - CEO

Debi@MyLinks.com

405-735-5144