

SMS And ICT4D Connecting to People

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Why SMS

Or: Where There Is No App

Advantages of SMS

- Ubiquitous
- No Install
- Low cost
- Scalable

Disadvantages

- No structure
- Limited bandwidth
- Complex syntax

When To Use

- Large scale
- No control over hardware
- Simple data collection or unstructured messages

Telecommunication Interface

Very Difficult

- Telco red tape
- Expensive to setup
- Only cost effective at scale

Connection Methods ...

- GSM Modem
- Third Party Gateway
- Android Gateway

GSM Modem



- Direct connection to cell network

GSM Modem



Third Party Gateways

How connect a web application to the telecommunication system?

HTTP to SMS Gateways

- Twilio
- Nexmo
- Sendhub



Africa's Talking

HTTP to SMS Gateway

Send - POST request

- URL: <http://api.africastalking.com/version1/messaging>
- Header: `apikey=APPLICATION_API_KEY`
- username
- message
- to

Receive - Call back URL

- URL: <http://my.app.com/at/receive>
- POST variables
 - from
 - message
 - date
 - uuid

Android SMS Gateway

Ushahidi SMS Sync and EnvayaSMS



Frontline SMS

- Started in 2005
- Runs on a laptop connected to a GSM modem
- Easy to setup and get started

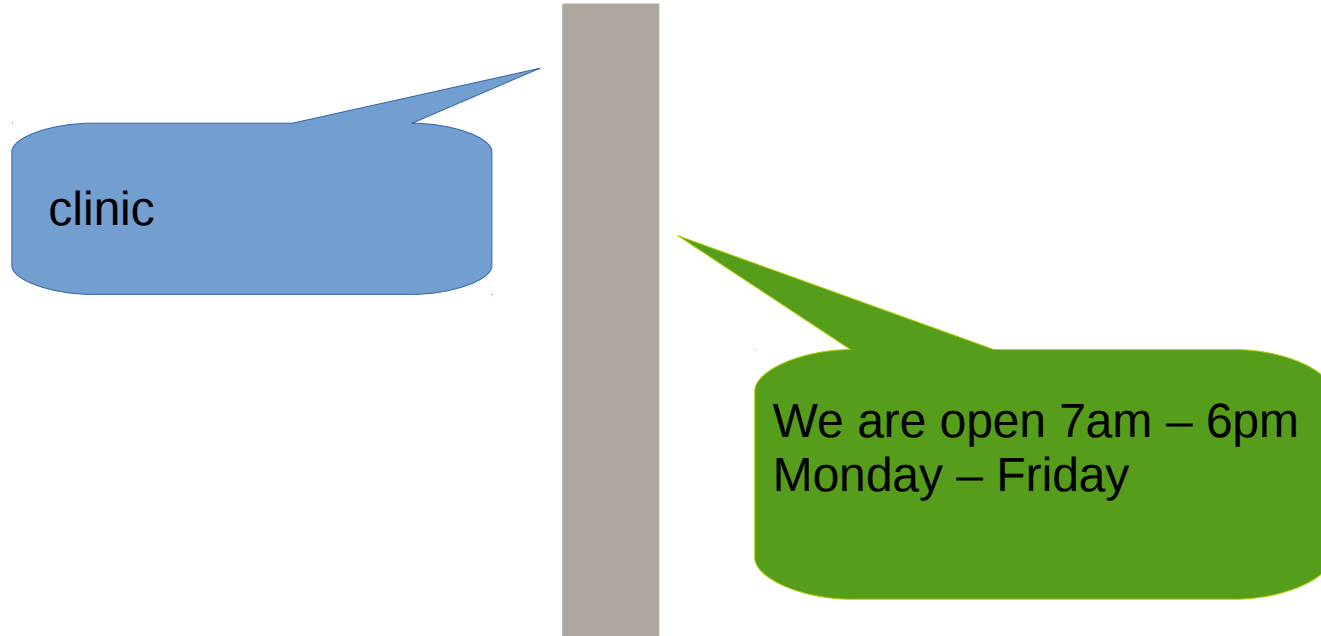
Features

- Groups
- Survey
- Keywords



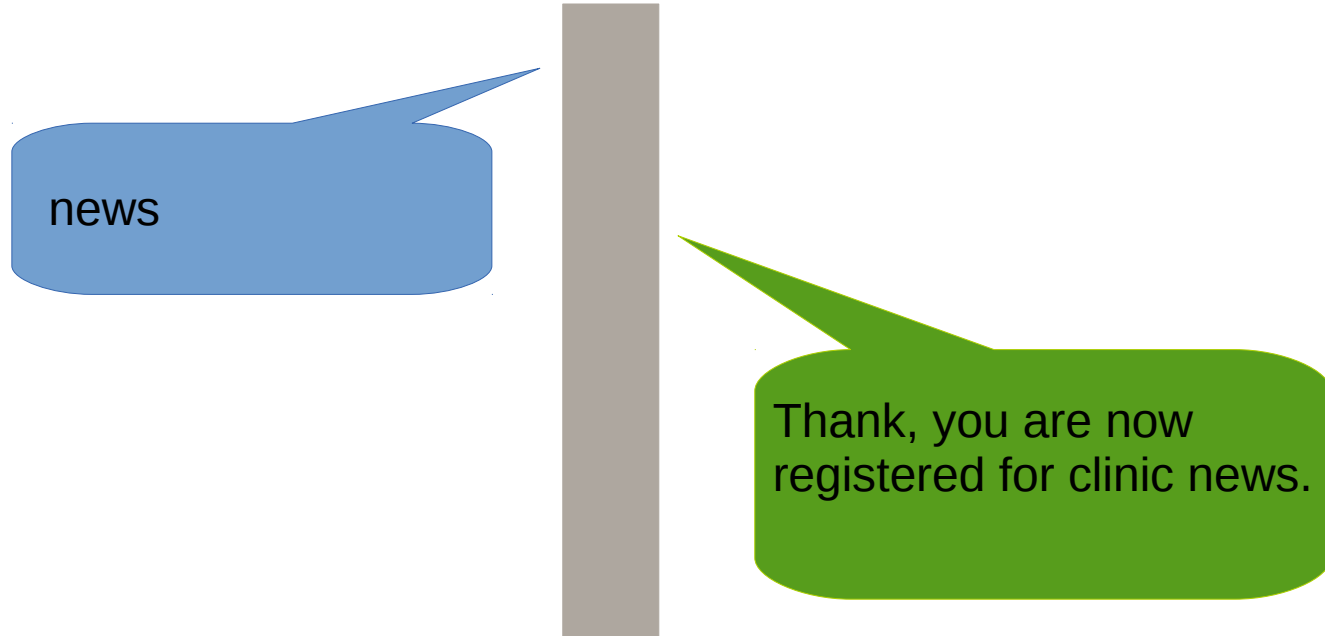
Frontline SMS

Keywords: prefix matching on incoming messages



Frontline SMS

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Frontline SMS

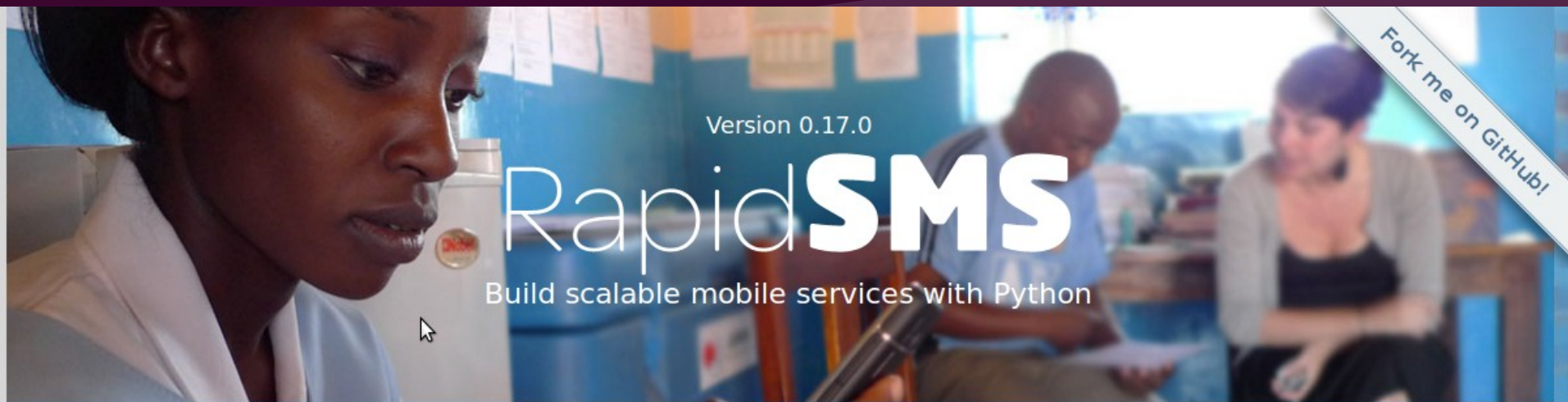
Keywords: prefix matching on incoming messages



wiki frontline sms

FrontlineSMS is a free open source software used by a variety of organizations to distribute and collect information via text messages (SMS). The software can work without an internet connection and with only a cell phone and computer.

RapidSMS



RapidSMS

[About](#)



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[Projects](#)

[Packages](#)

[Community](#)

[Register/Log In](#)

Features

- Django application (python web framework)
- Keyword based router
- Base framework (connections, contacts, messages)


Cloud Platforms


RapidSMS as a service


- Telerivet (EnvayaSMS)
- FrontlineCloud
- Text It (RapidPro)


Features


- Channels – Android or Third Party Gateways
- Contacts and Groups
- Forms
- Messaging Campaigns
- Keywords


 Dashboard


 Messages


 Contacts

 Services


 Phones

 Account

 media@telerivet.com

 Example Project

 Help

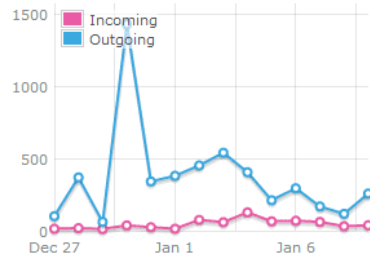
 Log out

Messages

38 received today

257 sent today

[New Message](#)
[Export Messages](#)
[View Statistics](#)



Contacts

188 active today

9537 total contacts

[Add New Contact](#)
[Import Contacts](#)
[Export Contacts](#)

Services

[Poll](#)
[Subscription Service](#)
[SMS Auto-Reply](#)
[Phone Call Auto-Reply](#)

[Add Automated Service](#)

Phones

- (484) 555-0001 Twilio
- 555-1212 Test
- Nexus 5 Android
- Tablet Android
Disconnected since June 10, 2013

Account

Example Organization

[User Accounts](#)
[Developer API](#)

Connecting to Patients

Can we use two-way SMS to engage pregnant women with the health system.

Study Design

Automated messages can be scheduled relative to:

- Client enrollment
- Estimated delivery
- Next scheduled visit
- Actual delivery

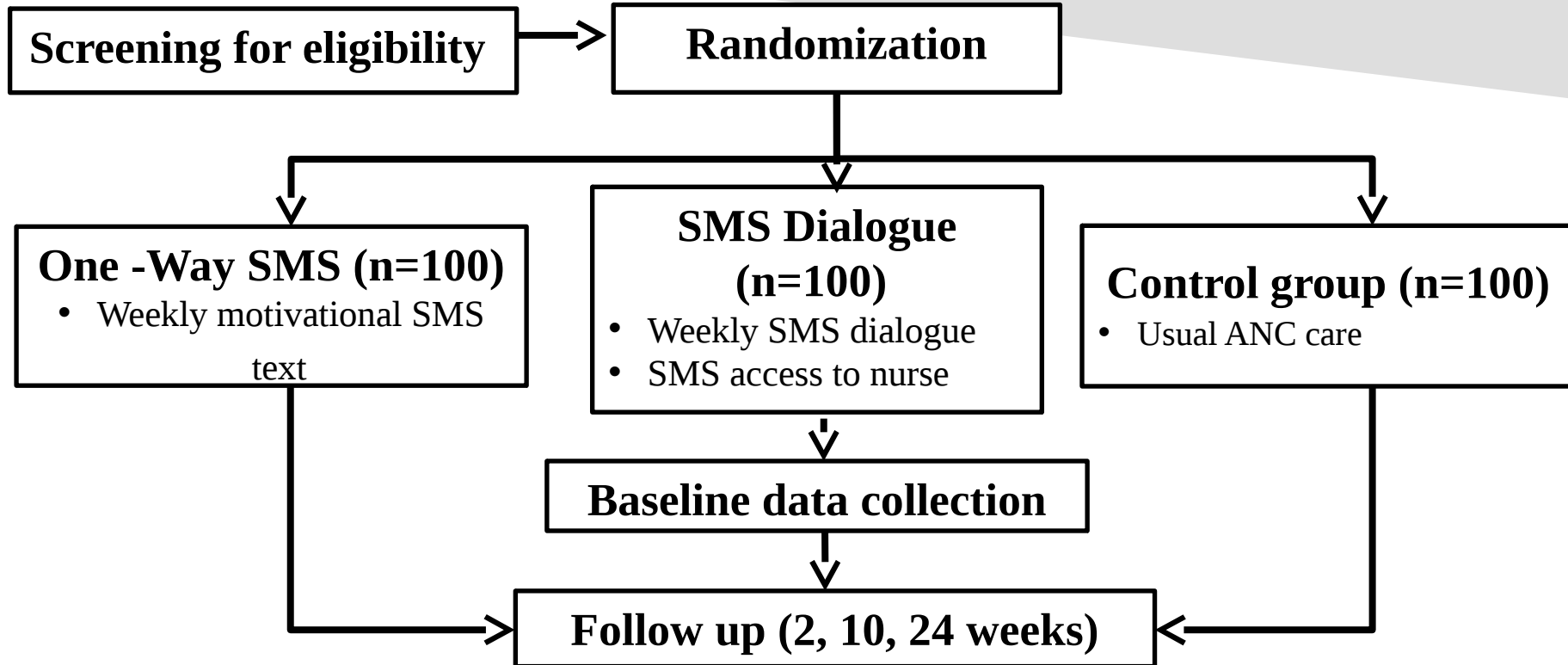
Messages can also be contextualized:

- Personalized with the woman's name
- Delivered on the requested day of the week at the requested time
- Customized based on medical condition

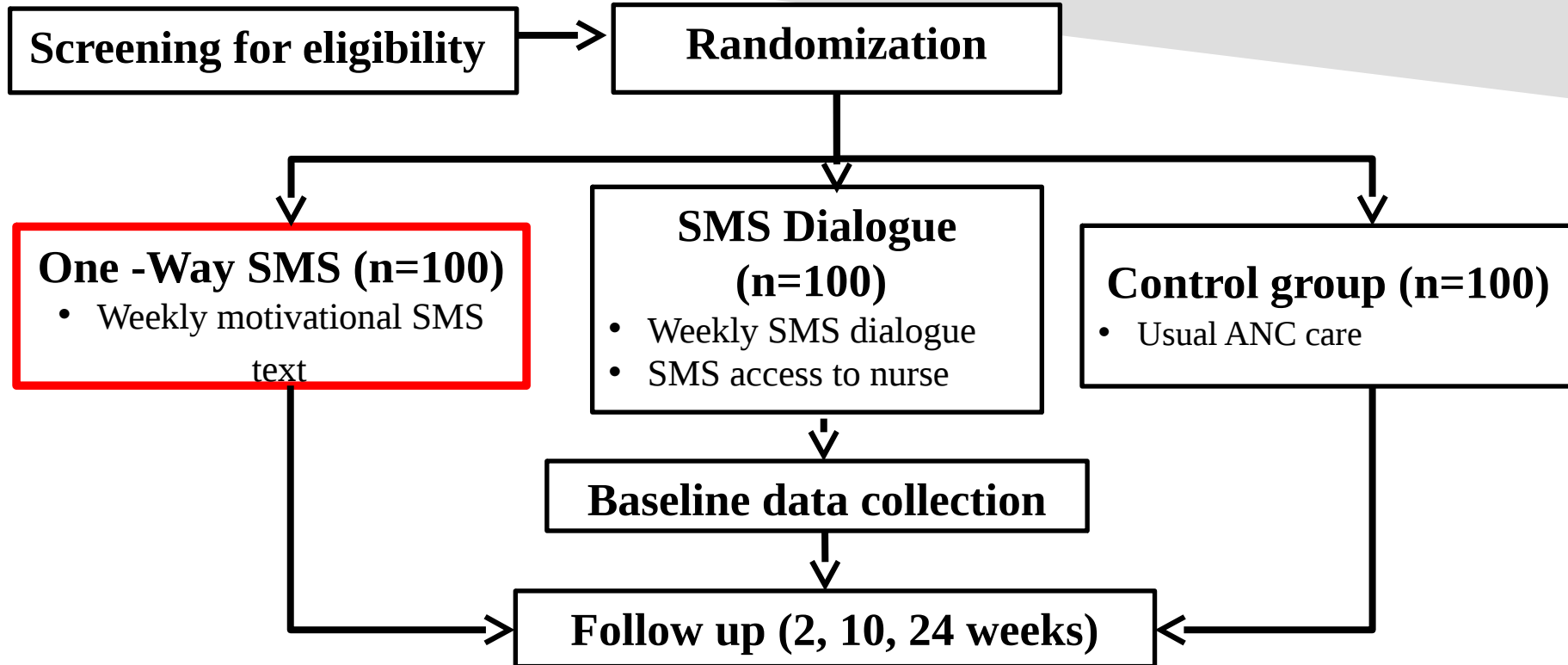
472 preprogrammed messages
20 weeks before delivery
10 weeks after birth
4 categories



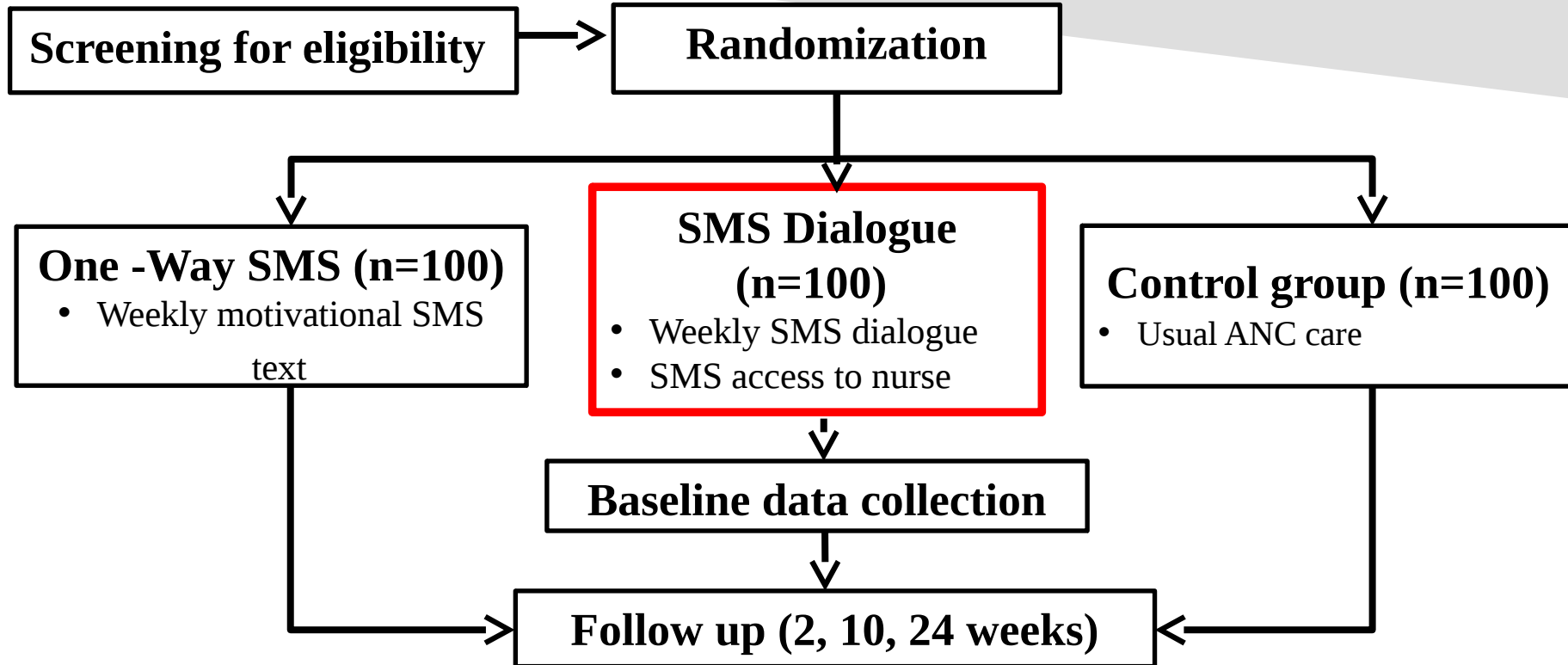
Study Design



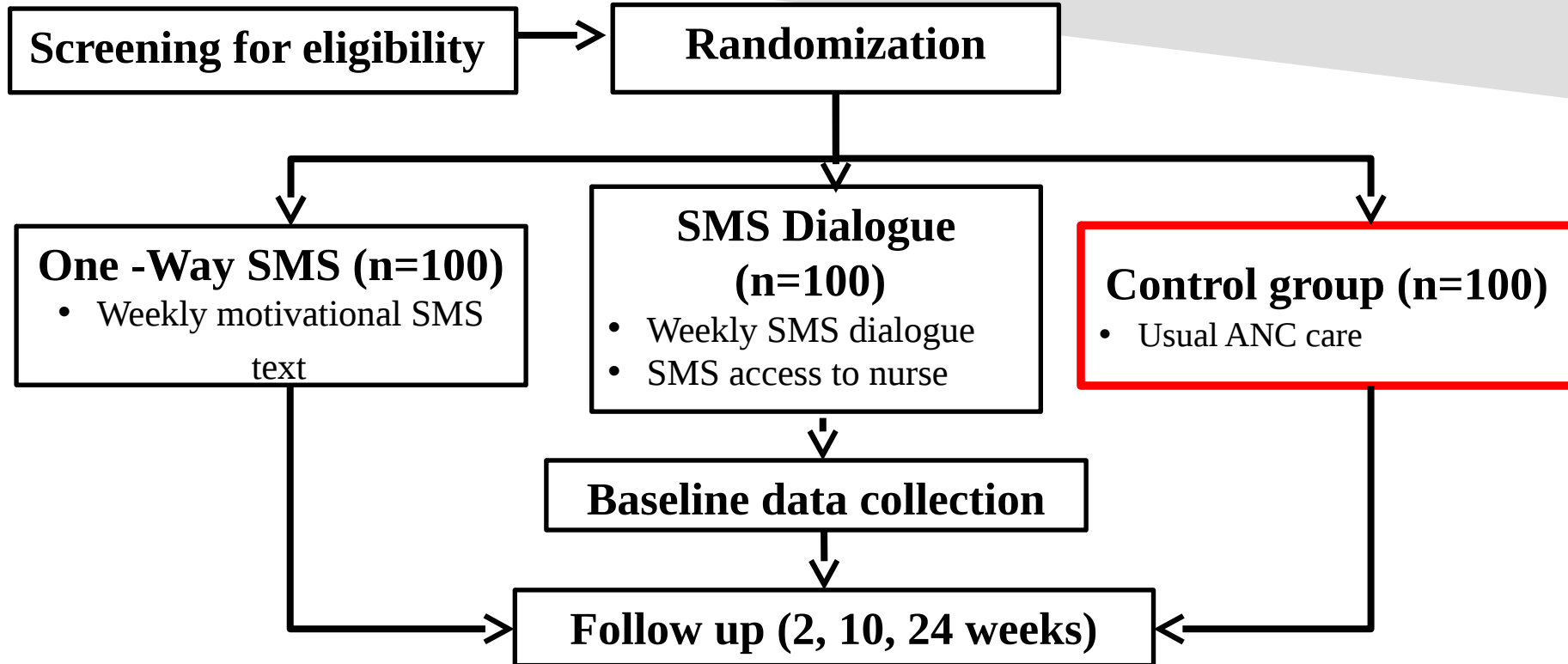
Study Design



Study Design



Study Design



Web Based Interface

ENCOURAGEMENT SYSTEM Refresh Currently Logged In As OSCARD Log out

Search... Phone Number: 123 -- Agnes (#4) -- Study Group: Two_Way 1:43:16

FILTER Active SORT Group

- (#5): Damaris
- (#4): Agnes Jun 10th
No reply since Feb. 19, 2013.
- (#2): Millicent Jun 14th
- (#3): Christine Jun 12th
- (#1): Caroline Sep 01st

TO: AGNES (#4)

Send message

0/144 characters, 0 messages Send

Message History Download Conversation

- Agnes: Feb. 19, 2013, 6:13 a.m.
Yes, Sis, the family is excited. My mother comes by every day now. Prompted
- OSCARD: Feb. 19, 2013, 6:10 a.m.
Agnes, The hospital can monitor you & your baby. This is very important for babies of young women. Have you talked to your family about coming in for labor?
- Missed Call: Feb. 19, 2013, 6:07 a.m. visit
I called
- Called You: Feb. 19, 2013, 5:58 a.m. other
Client called me.
- System: Feb. 19, 2013, 5:52 a.m.
Agnes, it is Kerubo from clinic. Good job coming in for your visit today. You will need at least 4 visits during

Patient Information Info Settings

- ID number: 4
- Name: Agnes
- Study Group: Two_Way
- Birthdate: Feb. 20, 1990
- Phone Number: 123
- Pregnancy Status: Pregnant
- Expected Due Date: Sept. 25, 2013
- Next Visit: June 10, 2013
- Registration Key: GBFLJ Not Validated

Notes +

Clinic Visit History +

A Hybrid Human Computer SMS System



Problems

- Patient Management (Almost need an EMR)
 - Date of next visit
 - Estimated and actual delivery data
- Management of incoming messages
 - Messages would could go unanswered
- Multiple numbers per contact

What does the interface look like for a hybrid SMS system? How can we best use technology to amplify the efforts of individual nurses.



You have **8** new messages



You have **1** new visits to view



No new calls!



You have **85** new translations



Enroll user



Find a user



Upcoming visits

Questions/Comments