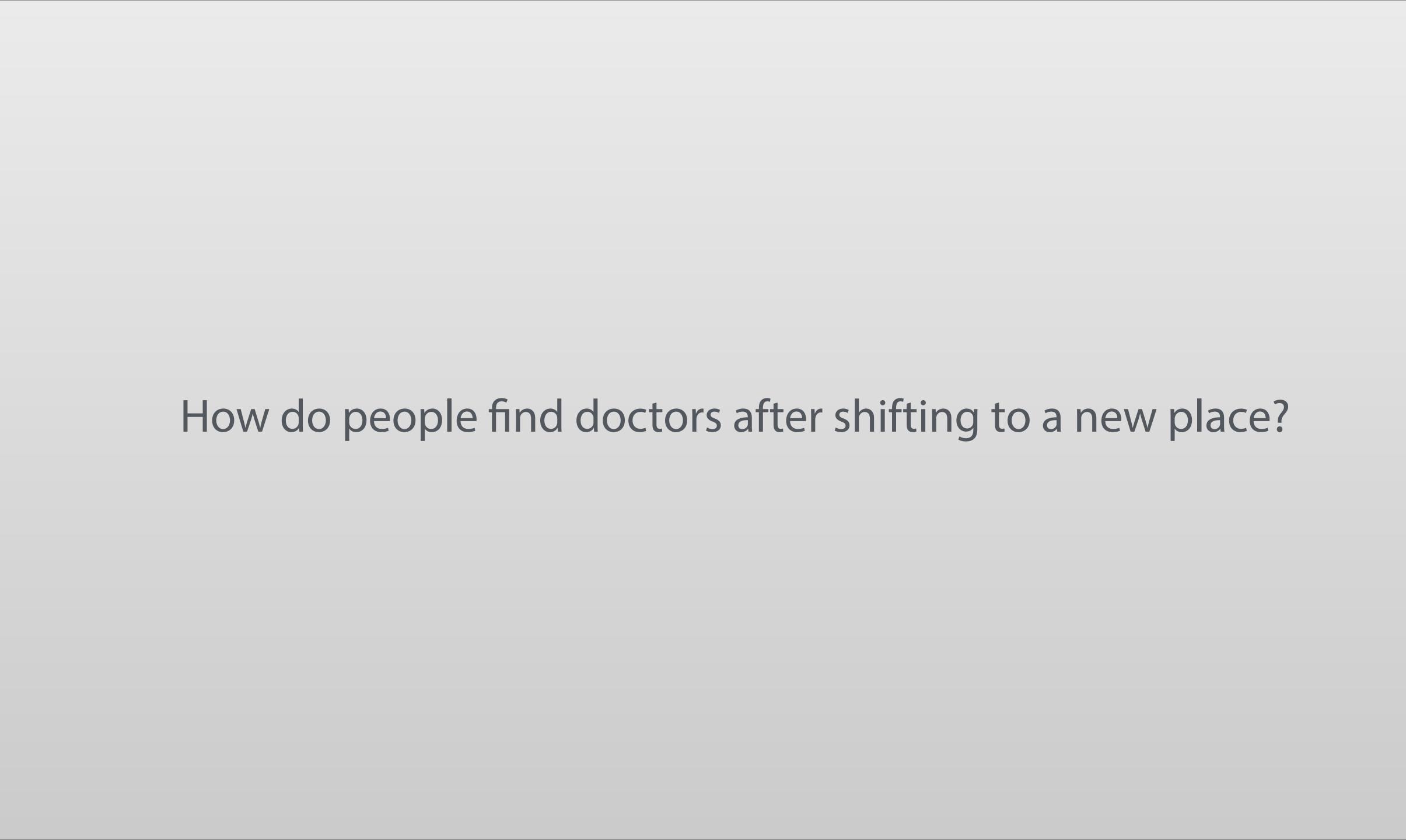
Interaction Design Project 2

Designing an alternate way to reach relevant primary healthcare practitioners in Navi Mumbai

Kaustubh Limaye

Guide: Prof. Pramod Khambete





How do people find doctors after shifting to a new place?

Chat with family and colleagues

How do people find doctors after shifting to a new place?

Chat with family and colleagues
Word-of-mouth

Designing a solution to search relevant healthcare practitioners

Initial Brief





patientslikeme®











Directory







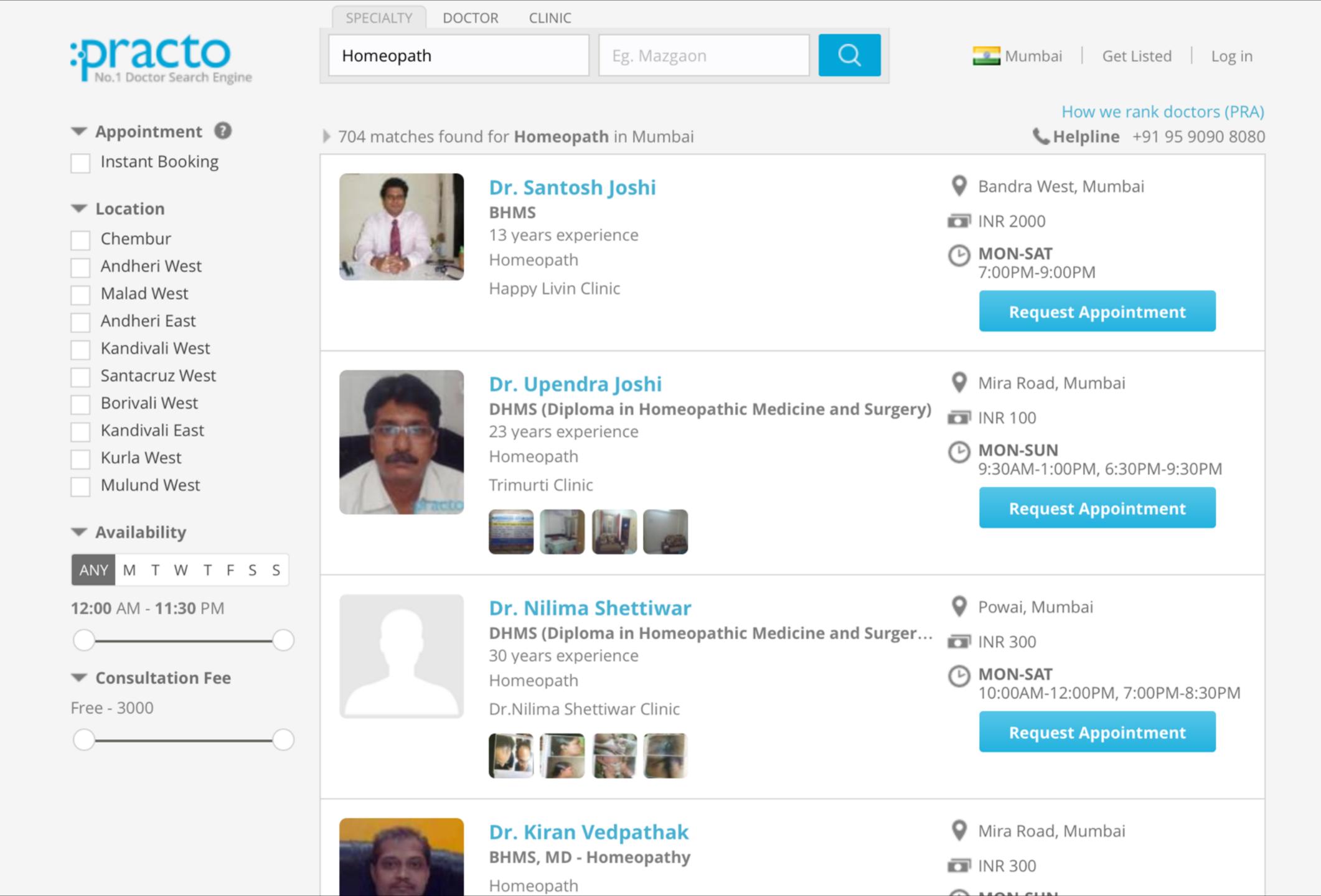


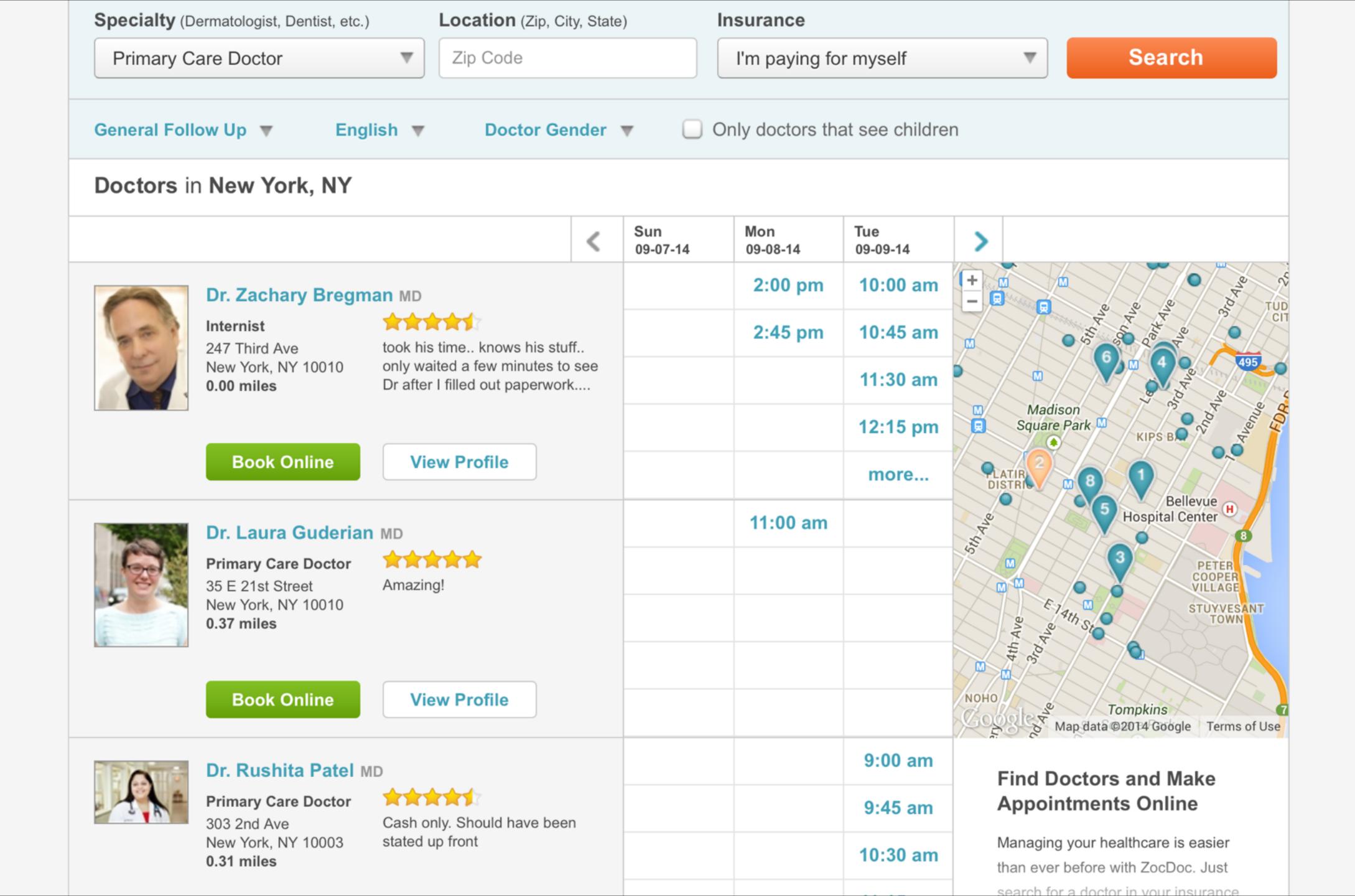












Found 301 Doctors for you.



Dr. Shantanu Mallick

MBBS, DA, FIPP (USA)

General Physician, Pain Management

Experience: 13 years

■ Sterling Wockhardt H... Vashi

+2 more hospitals

Book Appointment

Sterling Wockhardt Hospital, Vashi

Mo, Dec 1

The provided Hospital of the

View Fees



₹ View Fees

Dr. Amit Pathak

M.B.B.S, M.D(Internal Medicine)

General Physician

& Experience: 14 years

■ Palm Beach Hospital ... Vashi

+1 more hospital

Book Appointment

Palm Beach Hospital & Diagnostic Centre ▼

Today ▼ 12:00 PM ▼

Book Now



9 reviews

Dr. Sandeep B. Sonawane

MBBS, MD (Int. Medicine)

General Physician, Cardiology (Heart), Diabetology, Internal M...

& Experience: 7 years

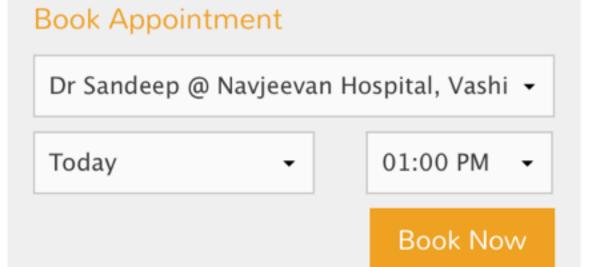
■ Dr Sandeep @ Navje... Vashi

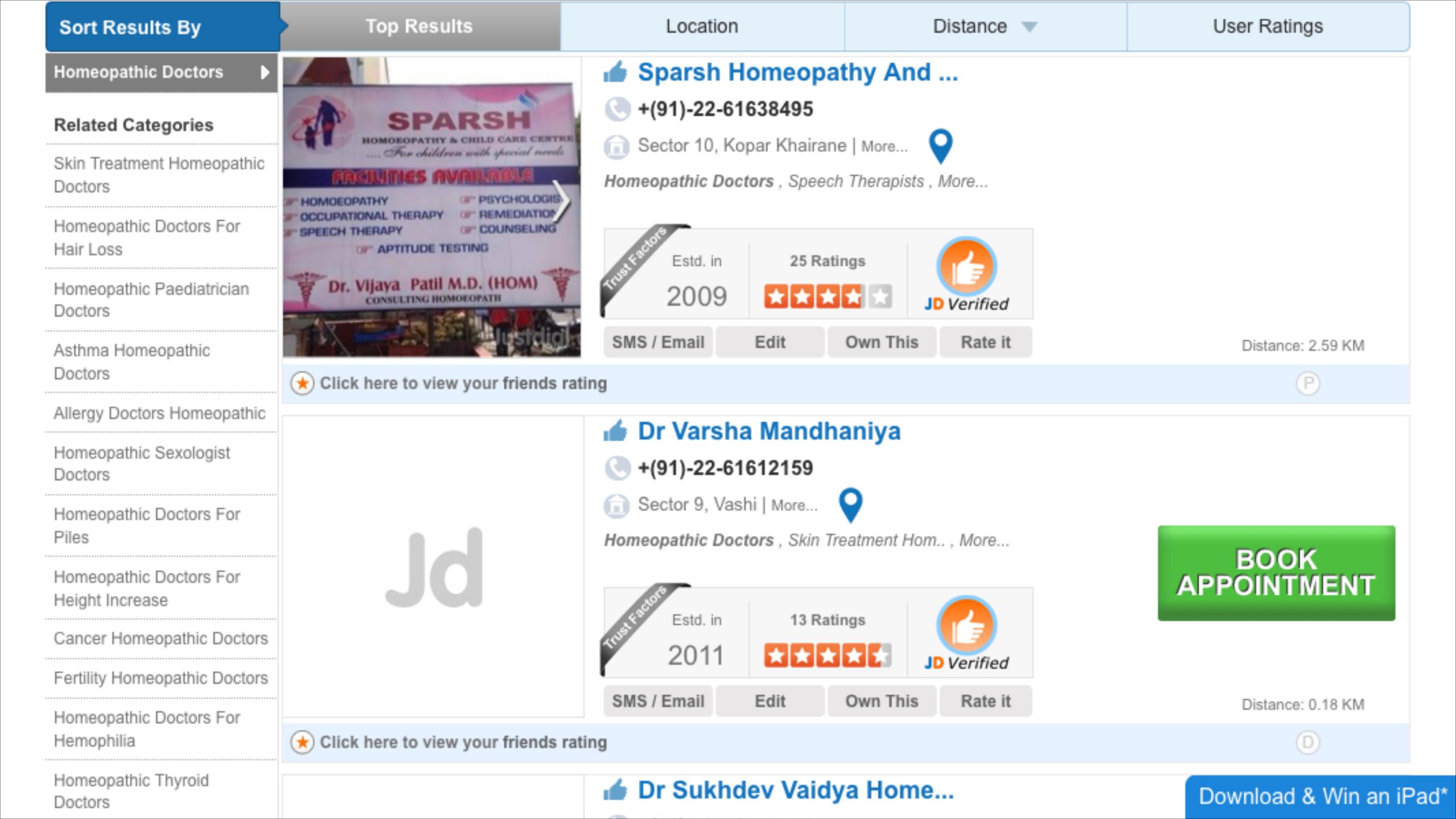
4 0 km

√ 0 km

√ 0 km

+2 more hospitals





RELATED PRODUCTS

- Apron Doctor
- Bag Doctor
- Doctor Psychology
- Dermatologist
- Doctor Eye
- Doctor Cardiologist
- Surgeon
- Dentist
- Doctor Diabetes
- Doctor Diabetes

SEE ALL ▶

NARROW BY LOCALITY

- Andheri West
- Thane West
- Dadar West
- Vashi

SEE ALL ▶

FILTER BY ALPHABET

Results for doctor in Mumbai

Businesses from other cities









Rotunda Fertility Clinic and Keyhole Surgery Centre

Andheri West

This clinic is the latest venture of Rotunda-The centre for Human Reproduction and one step forwards in creating a chain of well equipped and State-of-the-art IVF centres in the city of Mumbai.

Business can Provide

Doctor Menopausal , Sperm Bank, Hospital Laproscopy, Cryopreservation Of Embryo,



X-13, Garden View 7-10 Shastri Nagar Andheri West Mumbai

Rotunda Blue Fertility Clinic & Keywhole Surgery Centre

Dadar West

Welcome to the youngest member of our family - the new, state-of-the-art Rotunda Blue Fertility Clinic & Keyhole Surgery Center. We have grown and in doing so we have multiplied our commitment to your...

Business can Provide

Doctor Menopausal , Rotunda Blue Fertility Clinic & Keywhole Surgery Centre, Dadar West, Rotunda Blue Fertility Clinic & Keywhole Surgery Centre, Laparoscopic Surgery,

To View Phone Numbers

2, Joglekar Building, Plot No 119 Dadasaheb Rege Marg Dadar West Mumbai

Southern Cross Fertilty Centre

Prabhadevi

The Southern Cross Fertility & IVF Centre is located in Mumbai, India. It was established in 1989 by Dr. Faram E. Irani, and has ISO certification. Our main purpose is to provide comprehensive, personalized,...

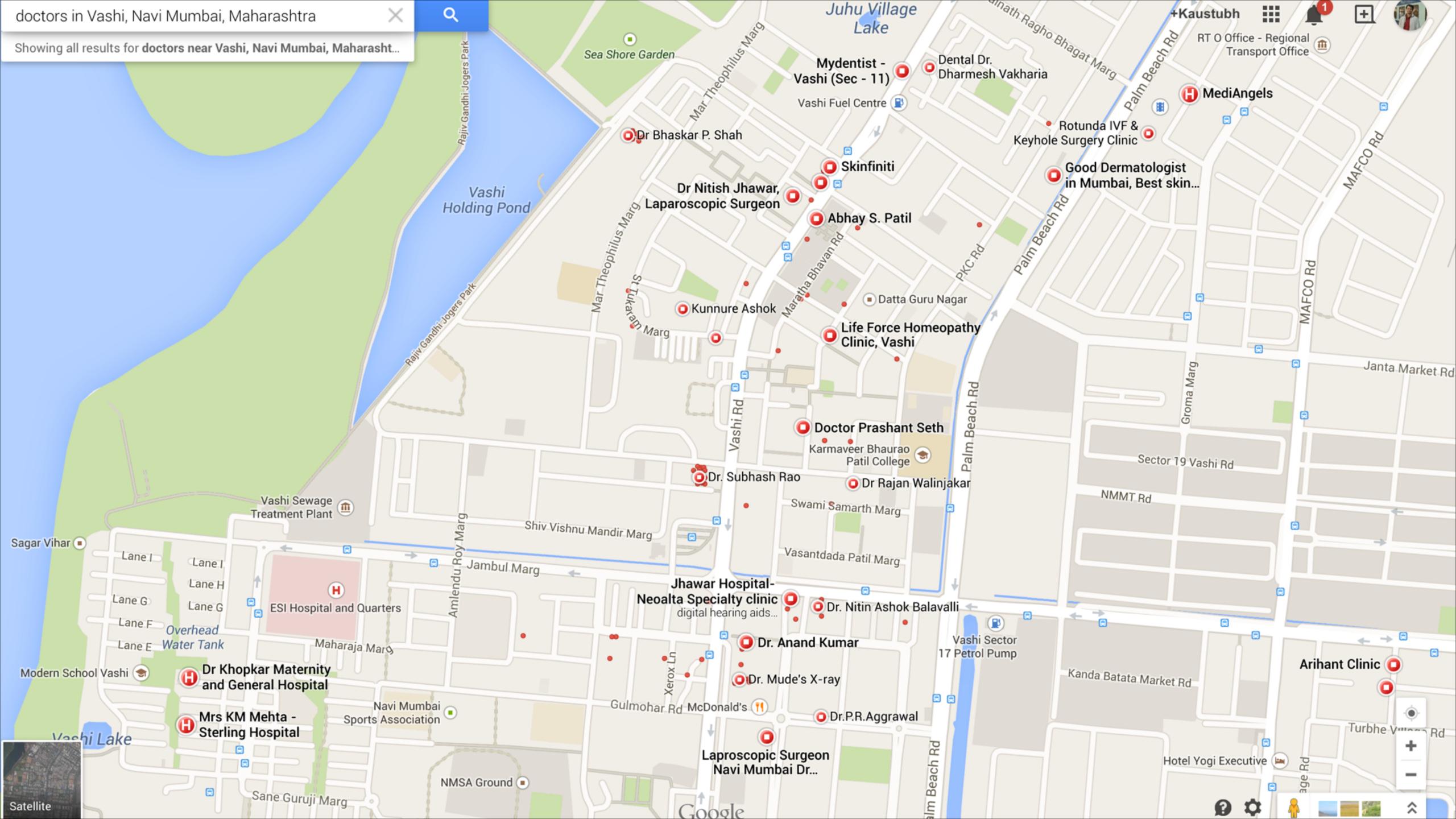
Business can Provide

Doctor Menopausal , Hospital, Clinic, Southern Cross Fertilty Centre, Prabhadevi,



View Phone Numbers

Ground Floor, United Western Apartment Prabhadevi Mumbai



India's Most Recommended Doctors by Date Added

Dr. Sita Rajan - Gynecologist -Bangalore

Written by Ramya Ramani August 06, 2014

4 188



I met Dr.Sita Rajan for my second pregnancy. She is very thorough and sure about her course of treatment. We did not have any doubts during the entire course of the pregnancy and during my labour and delivery thereafter. In these days when the doctors don't hesitate to cut you open, Dr.sita rajan, gave me full chance to try for a normal delivery even though i had my first baby thro c-section (VBAC). i will recommend her without any hesitation.

Dr. Anirban Chakraborty - Internal Medicine - Kolkata

Written by Ajanta Chaki August 05, 2014





Dr. Anirban Chakraborty was in Kolkata when I saw him for my condition. He is a consultant in UK who was visiting Kolkata. He saved my life. I had a very bad heart condition which he diagnosed and gave me a simple medication which has changed my life. I had spent thousands of rupees before to see 3 cardiologists who could not find the problem. I now know why

Dr. M.R.C. Naidu - Nuerosurgeon - Hyderabad

Reviewed by Mrk Prasad



"i had a serious ailment of cervical spondilosis and after getting in touch with Dr.MRC Naidu, he had infused much confidence in me. He operated on me successfully, i am deeply indebted to him for my normal life apart from..."

Dr. J S Pasricha - Darmatologist - New Delhi

Reviewed by Dev Kath



"I went to see Dr Pasricha for alopecia areata problem. He started giving steroid to me whan i was 12 years old till 1 and a half years which led to many side efeects and when those patches started coming..."

Dr. Tarang Krishna - Oncologist - New Delhi

Reviewed by Prateek Jain



"Recently Dr. Tarang Krishna treated my father at Cancer



0

Connect

Follow

Follow

Follow

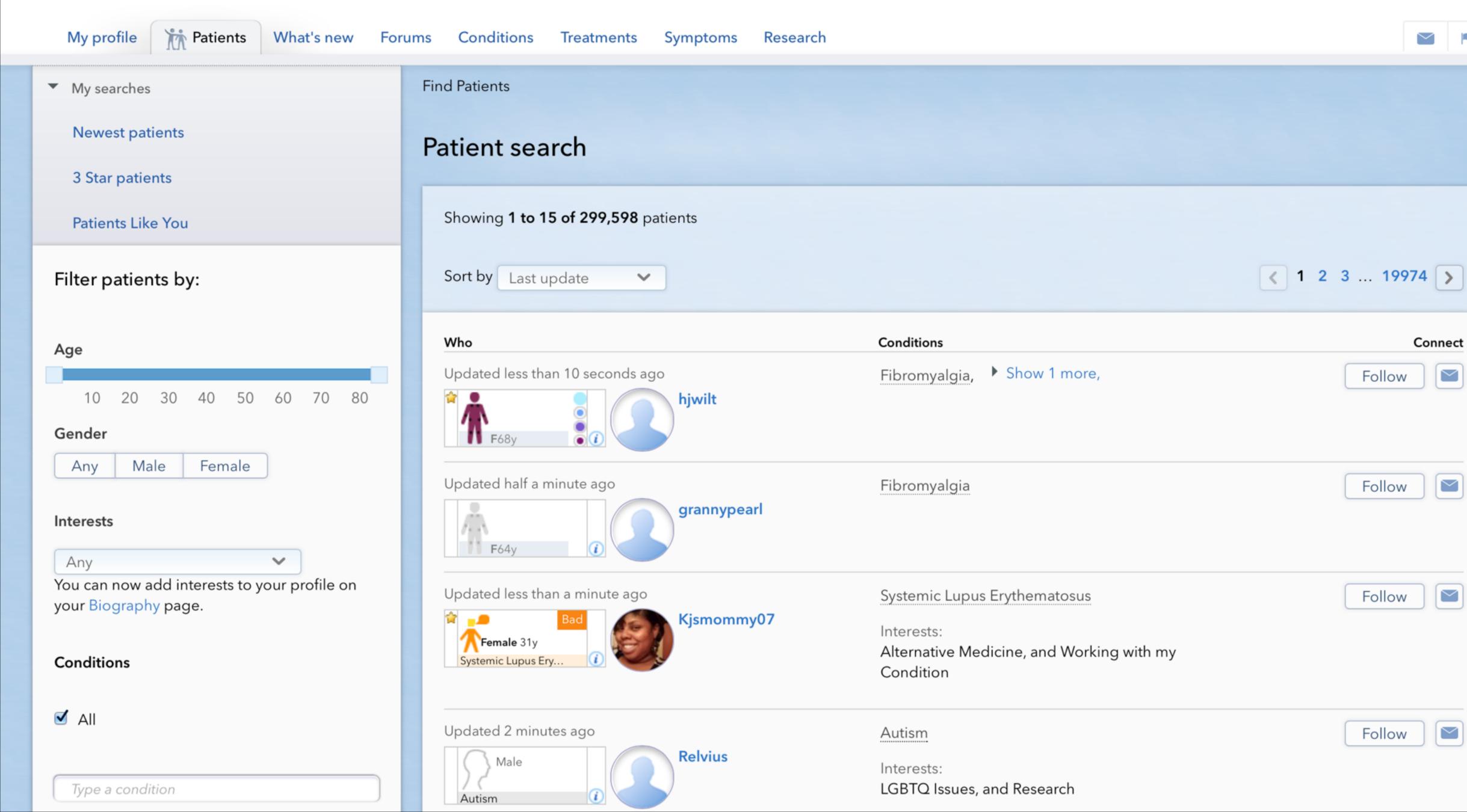
Follow

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patientslikeme®



Directory

Pros

- Search according to speciality, location, etc
- Filters
- Multiple levels of details
- Appointment system booking & reminders

Cons

- · Rating and review systems are not effective
- Confusion with what to search?
- Cannot connect to similar health-seekers

Network

Pros

- Maintain health profile
- Connect with similar health seekers
- Assurances

Cons

- Cannot search for healthcare services
- No appointment system

Primary Research

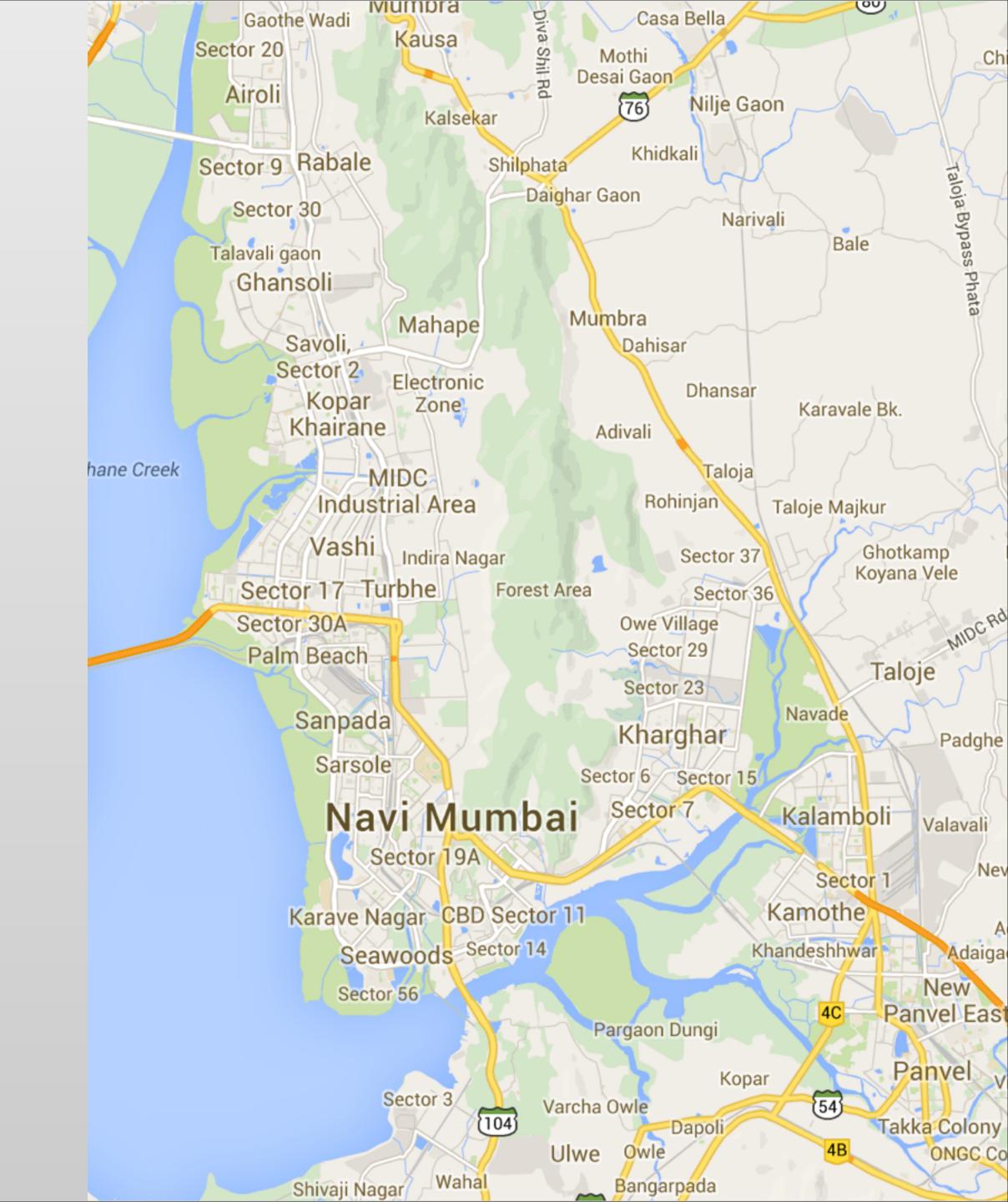
User Criteria

Geographic Location

Residence History

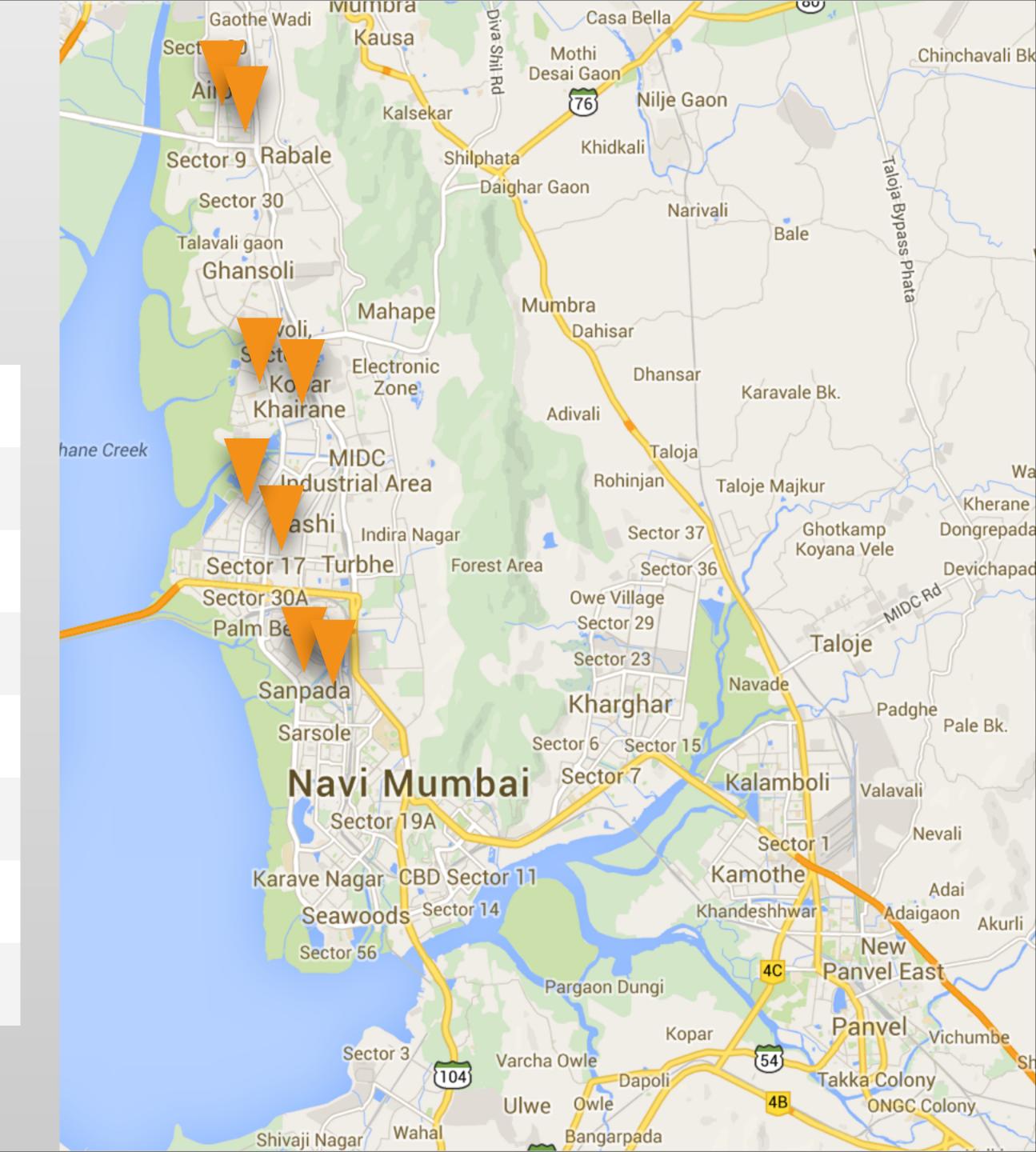
Marital Status

Gender



Primary Research

Koparkhairne	4 years	Married	F
Koparkhairne	3 years	Married	M
Sanpada	8 years	Married	F
Sanpada	9 years	Married	F
Vashi	4 years	Bachelorette	F
Airoli	1 year	Bachelor	M
Airoli	2 years	Bachelor	M
Vashi	2 years	Married	F



Navi Mumbai

Health System Resources	Numbers
General Hospital	75
Nursing Homes/Speciality Hospitals	53
Other Hospitals & Dispensaries	48
Private Clinics	1177
Pathology Labs	97

Pointers for User Study

When did you shift?

Previous home location

People at home

Languages spoken

Income range

Socialising

Technology usage

First time/latest you had to visit:

General physician

Dentist

ENT

Any Specialist

Change of doctor

Sources of information

About doctor:

Distance from home

Fees

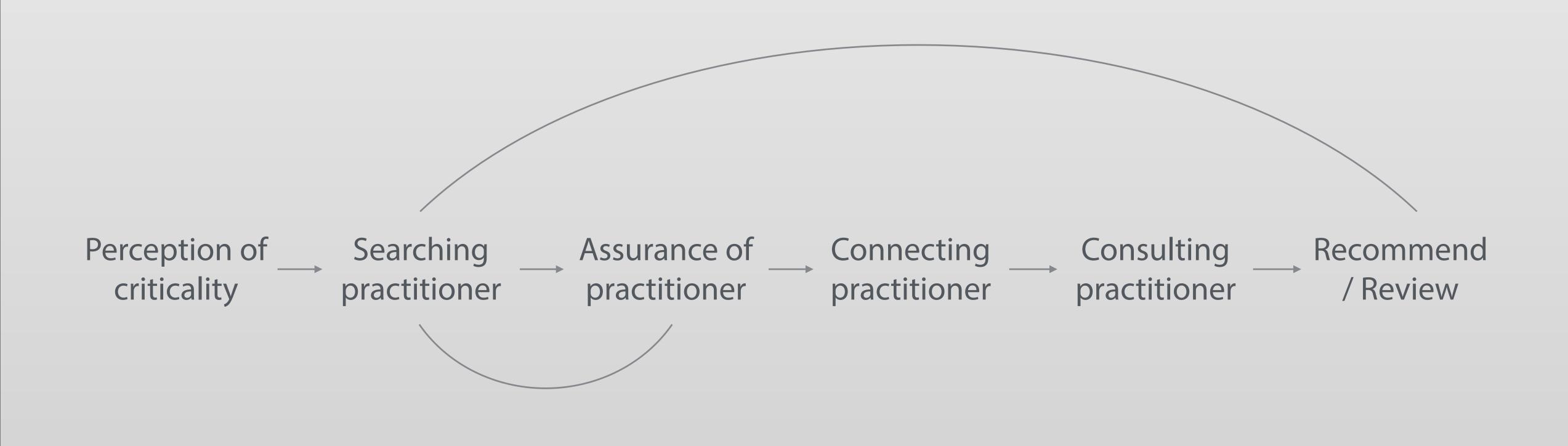
Specialisation

Language

What do you like about your doctor?

Family doctor

Patient records/prescriptions



Perception of Criticality

- The perceived degree of criticality about the illness affects how people behave in the later stages of interaction. *U01, U03*
- People are concerned about finding a good specialist more than a general practitioner.

Searching a practitioner

- The person who is ill may not be the person who searches for a practitioner. *U02, U03*Ability to use network benefits of multiple users.
- Word-of-mouth effect. *uo1*Ability to make use of word-of-mouth effect through.
- Practitioner consulted acts as a mediator in connecting patient with most relevant practitioner. <u>U03</u>
 Referral system through the solution.
- Health-seekers may not want to reveal their purpose of consultation Not to disclose sensitive information without convent.

Searching a practitioner

Convenience

- Location
- Fees
- Consulting space
- Language spoken
- Timings
- Waiting time
- Accessibility
- Gender
- Facilities (pathology, chemist, ATM, public transport, etc)
- Insurance

Reliability

- Degree
- Age/Experience
- Specialisation
- Name
- Acquaintance
- Recommendations

Ability to filter based on user preferences

Assurance

- · Assurance of a practitioner is valuable when given from the people -
 - Close friend/Relative (not necessarily consulted him/her)
 - Person who has consulted him/her before.
 - People in proximity of the practitioners consulting space. Ability to connect right people at the right time.
- Celebrity/famous public figures known to be using a healthcare service creates a sense of assurance. *U03*

Assurance

- An assurance from a professional associated with medical field is more valuable. <u>vo3</u>
 Ability to tag users as medical professionals.
- Multiple assurances give peace of mind. Ability to get multiple assurances.
- People have variable requirements of information to get assured.
 DI: Ability to give information in multiple level of details

Connecting to a practitioner

- Address of the practitioner is not clearly communicated when information is received through word of mouth. *U03*Ability to share information
- The initial time, people tend to directly visit the place without any appointments. *U02, U05, U06*Easy appointment system
- Medium of setting up an appointment is majorly through phone.
 Having multiple channels for booking appointments
- Before each consultation patient have to wait for long time DI: Ability to minimise waiting time

Consulting a practitioner

- Patient history is lost after change in practitioners. *U01 Digital patient record management tool*
- Some Patient preserve prescriptions given by the practitioner. *U01, U03, U04, U08*
- "Aaj kal family doctor nai hote" uo3
 Need is felt by people.

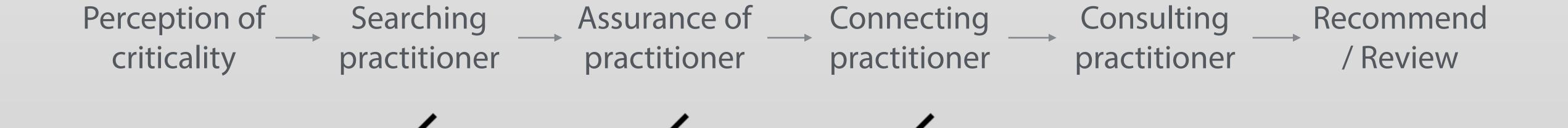
 Relationship management

Recommend/Review

- People sometimes recommend to others about healthcare services that they don't themselves opt for. <u>U03</u>

 Promote first-hand information for assurance
- Negative reviews are welcome from any sources. U05, U06





Indian Medical Council Regulations

- Physicians are not allowed to advertise their services in any form or manner of advertising through any mode.
- Medical practitioners are allowed to make a formal announcement in press for -
 - On starting practice
 - On change of type of practice
 - On changing address
 - On temporary absence from duty
 - On resumption of another practice
 - On succeeding to another practice
 - Public declaration of charges

In conversation with a doctor...

- People build trust on the practitioner over a period of time, after multiple consultations.
- 'Good doctor' is subjective.
- Established doctors may not subscribe to any digital information system.
- Cut practice is inevitable unless a systemic change occurs in India.

Primary Healthcare Practitioners

- Ideally, the initial point of contact with the healthcare system.
- Provides preventive care and health education to health-seekers.
- Refers to secondary or tertiary care.

General Practitioner

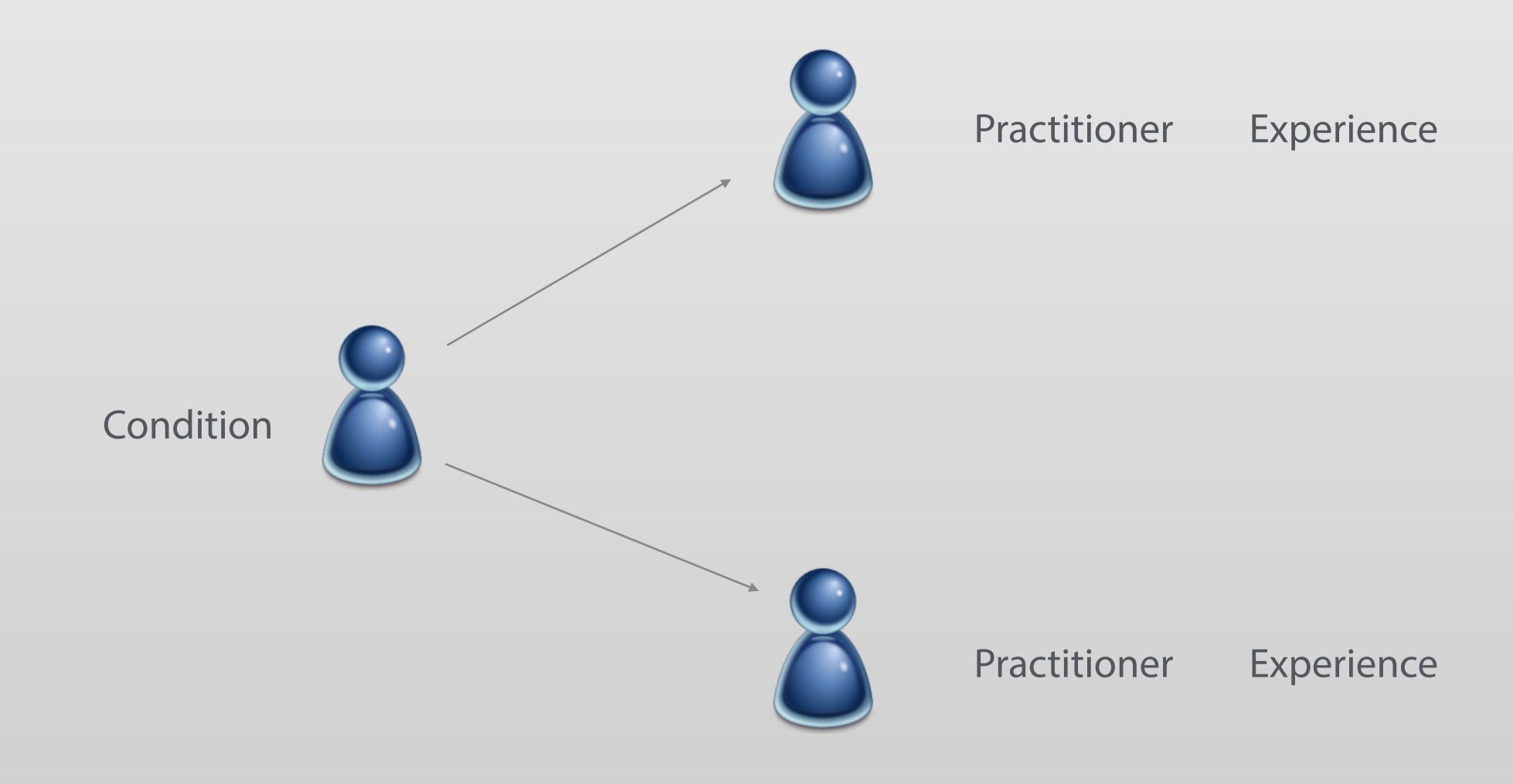
- Treats acute and chronic illnesses.
- · Consideration of the biological, psychological and social factors.
- Advantageous family medicine.

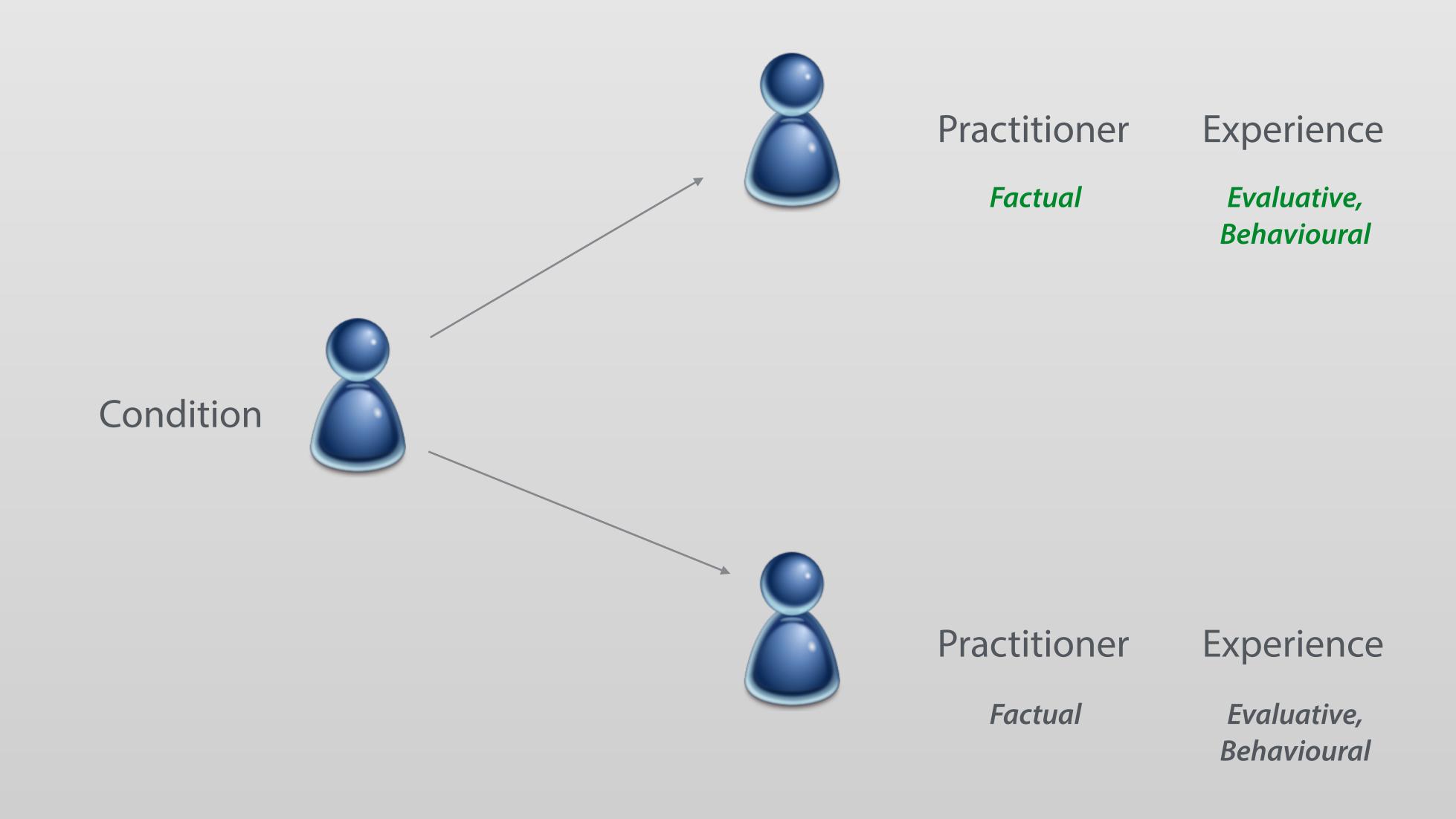
User influence in social media

- Induction user being triggered by an action of another user
- Homophily occurrence of users gathering into clusters to influence each other
- Confounding factors occurrence of grouping of users based on several external factors

Word-of-mouth effect

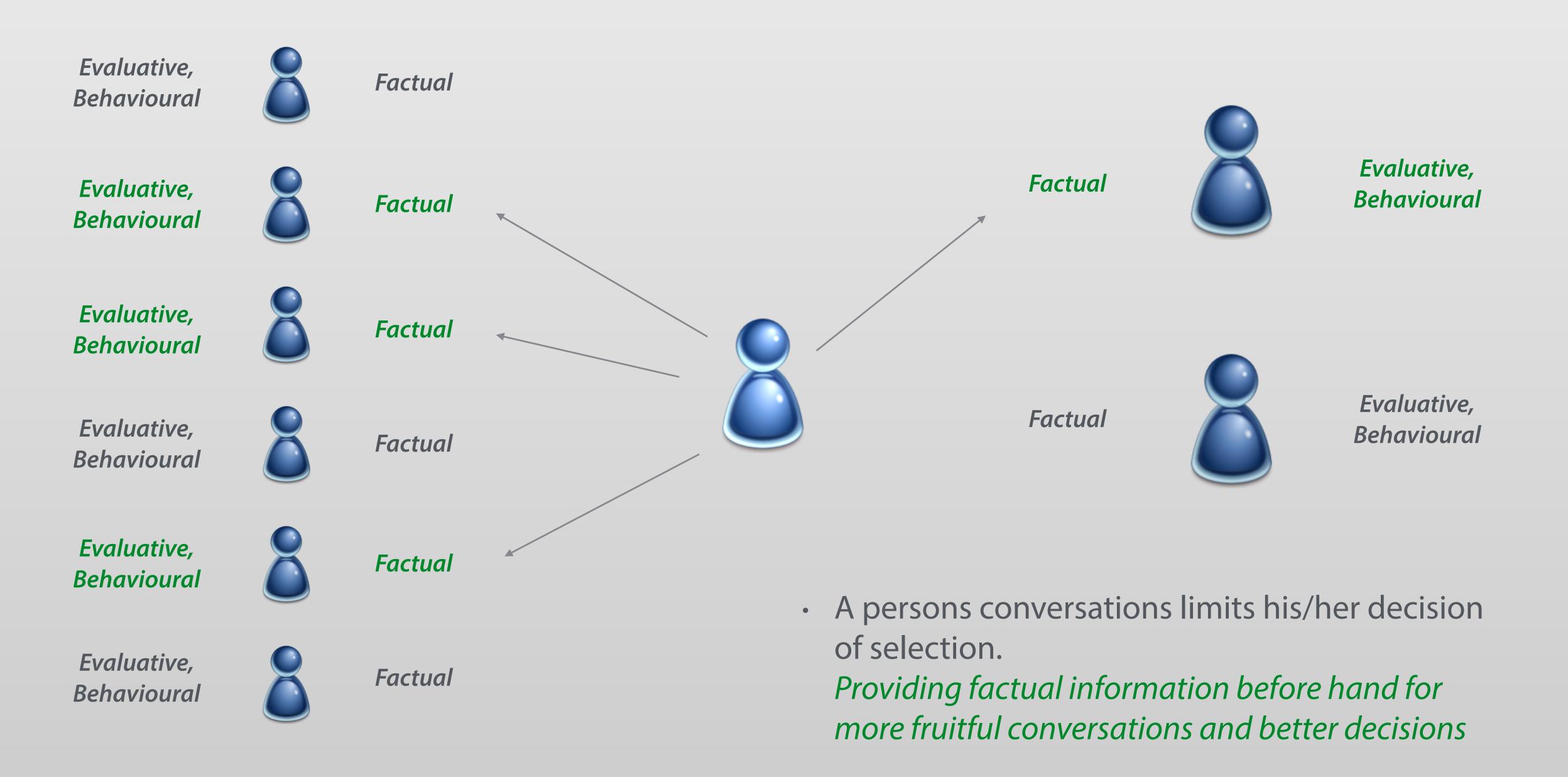
- · Spreads across ethnic groups and geographic boundaries, quickly
- Decision-making influencer
- Almost all consumers engage in it
- Perceived credible, trustworthy, reliable
- Highly Positive to highly negative
- Diverse content (Factual, Evaluative, Behavioural)





Evaluative, Behavioural	Factual		
Evaluative, Behavioural	Factual		

Evaluative, Behavioural	Factual				
Evaluative, Behavioural	Factual				
Evaluative, Behavioural	Factual				
Evaluative, Behavioural	Factual		Barrier		
Evaluative, Behavioural	Factual				
Evaluative, Behavioural	Factual				



Objectified Structured Clinical Examination

- Designed to test clinical skill performance and competence in skills specifically with respect to general practitioners, such as
 - General approach
 - Information gathering
 - Diagnosis
 - Information giving
 - Management

First time health-seeker

- People do not have access about information about surrounding doctors.
 Ability to know about all doctors
- A new person in the neighbourhood has limited contacts
 Ability to connect to all nearby people

Operational Needs

- Each visit to the doctor does not translate into meaningful data. Data is lost Capture each consultation experience to help others
- Related Health services like pathology, chemists are driven by referral system.
 Provide search for related services as well
- Word of mouth effect can give inaccurate information about virus/epidemics
 Allow doctors to broadcast information about viruses/epidemics

Designing an alternate way to reach relevant primary healthcare practitioners in Navi Mumbai

in cooperation word-of-mouth

Designing an alternate way to reach relevant primary healthcare practitioners in Navi Mumbai

search connect

Designing an alternate way to reach relevant primary healthcare practitioners in Navi Mumbai

suitable desirable

Designing an alternate way to reach relevant primary healthcare practitioners in Navi Mumbai

Designing an alternate way to reach relevant primary healthcare practitioners in Navi Mumbai

Restated Brief

GP
Dentist
ENIT

Designing an alternate way to reach relevant primary healthcare practitioners GP in Navi Mumbai

Evaluation Criteria

- Trust
 - Solution should facilitate building a sense of reliability about a general practitioner.
 - It should aid in strengthening the patient-doctor relationship.
 - It should provide points to make better conversations.

- It should provide authentic patient experience information.
- It should allow interaction amongst users.

Evaluation Criteria

- Convenience
 - Solution should provide information about general practitioners' practice and supporting healthcare services.
 - It should allow search based on various user preferences.
 - It should provide appointment booking system

- Operational
 - It should work with/without the involvement of practitioner

Directory

Network

Match-making

Directory

Network

Match-making

Directory app with social connect

Healthcare social

Patient-Doctor match

Visual IVR based app

Facebook App

network

Patient-Patient match

Ask your locals app

Patient Doctor match-making

User preferences Match / Reject Manual Appointments

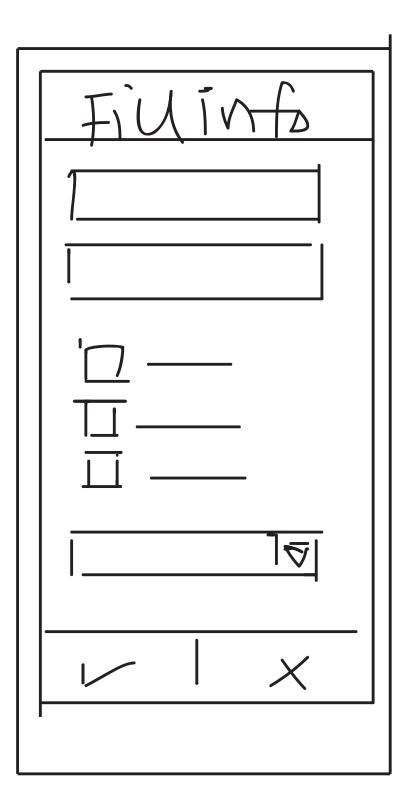
Pros

Easy decisions All doctors

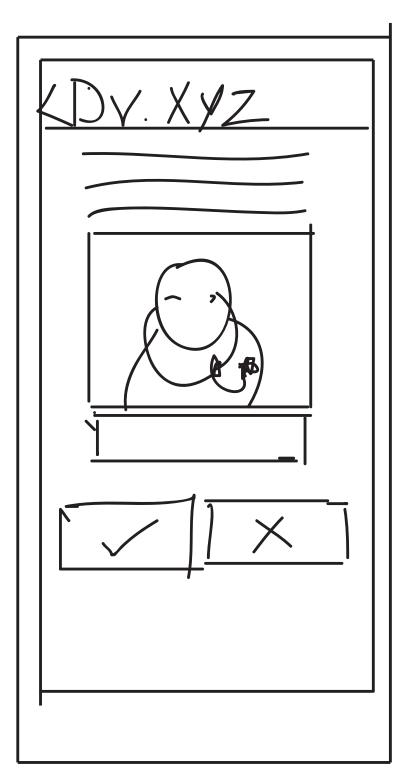
No assurance

Cons

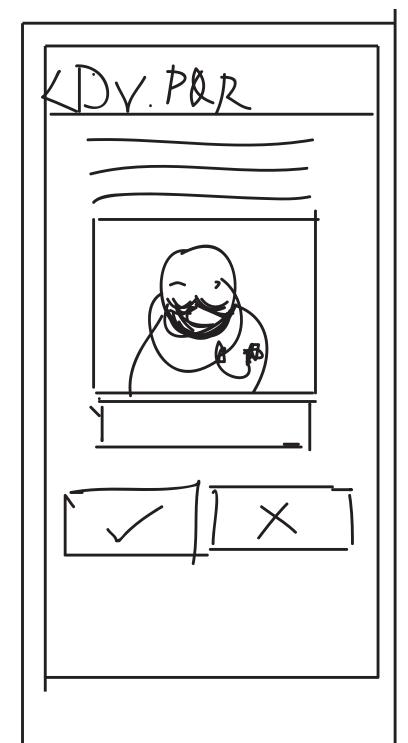
No interaction amongst health-seekers



Users fills demographic and preferntial info



Users gets a match based on may accept it or reject it.



Users gets another match the information filled. He after rejecting the previous match.

Ask your locals

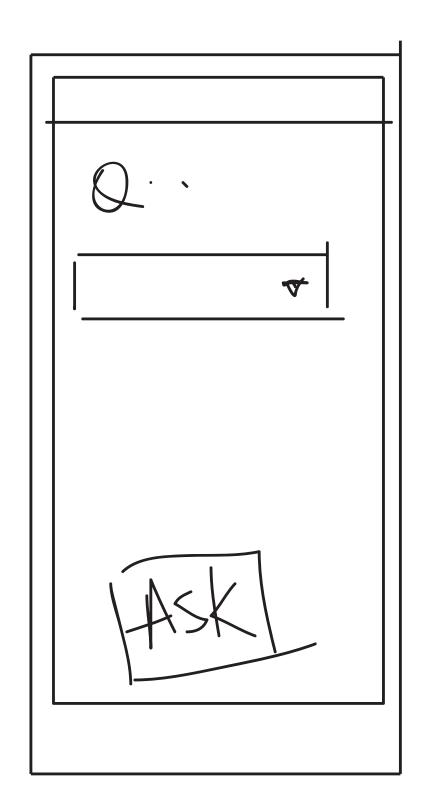
Input a question
Connect to locals

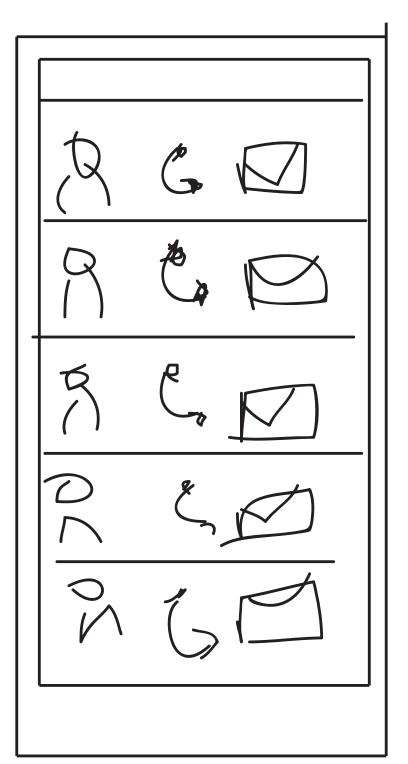
Pros

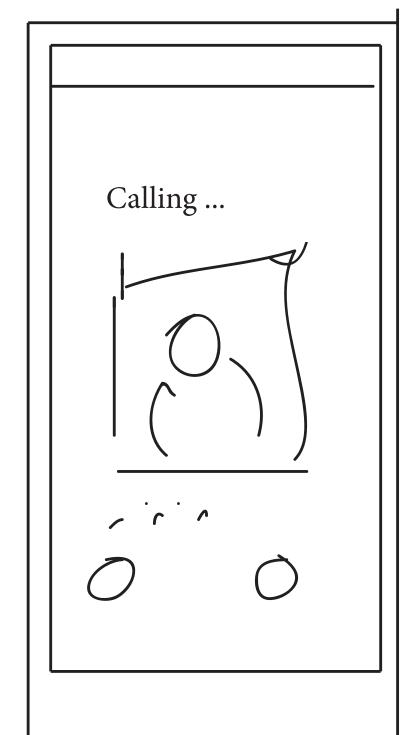
Good for migrants
Social connect

Cons

Generic Spam







Directory app with social connect

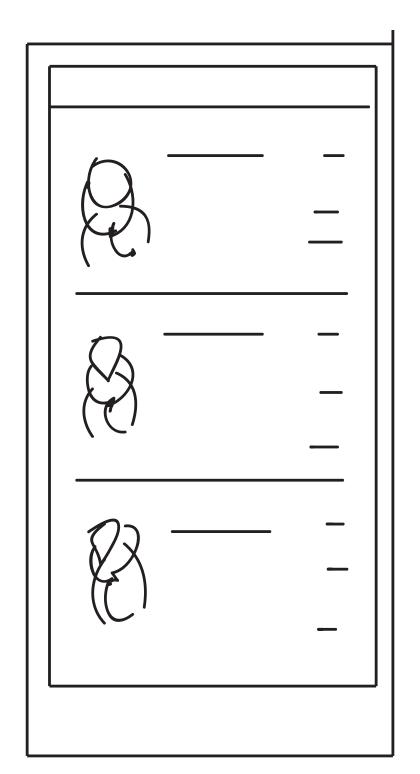
List view/Map view
Connect to locals
Appointment

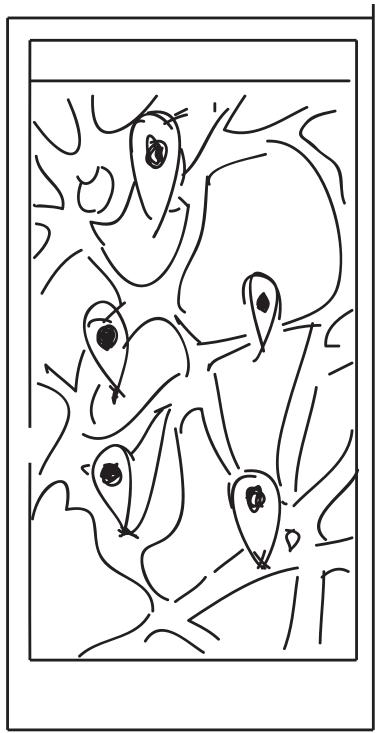
Pros

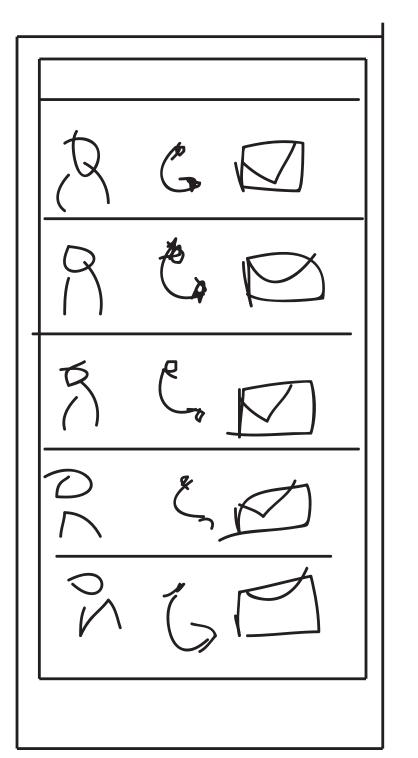
Multiple views
Minimising waiting time

Cons

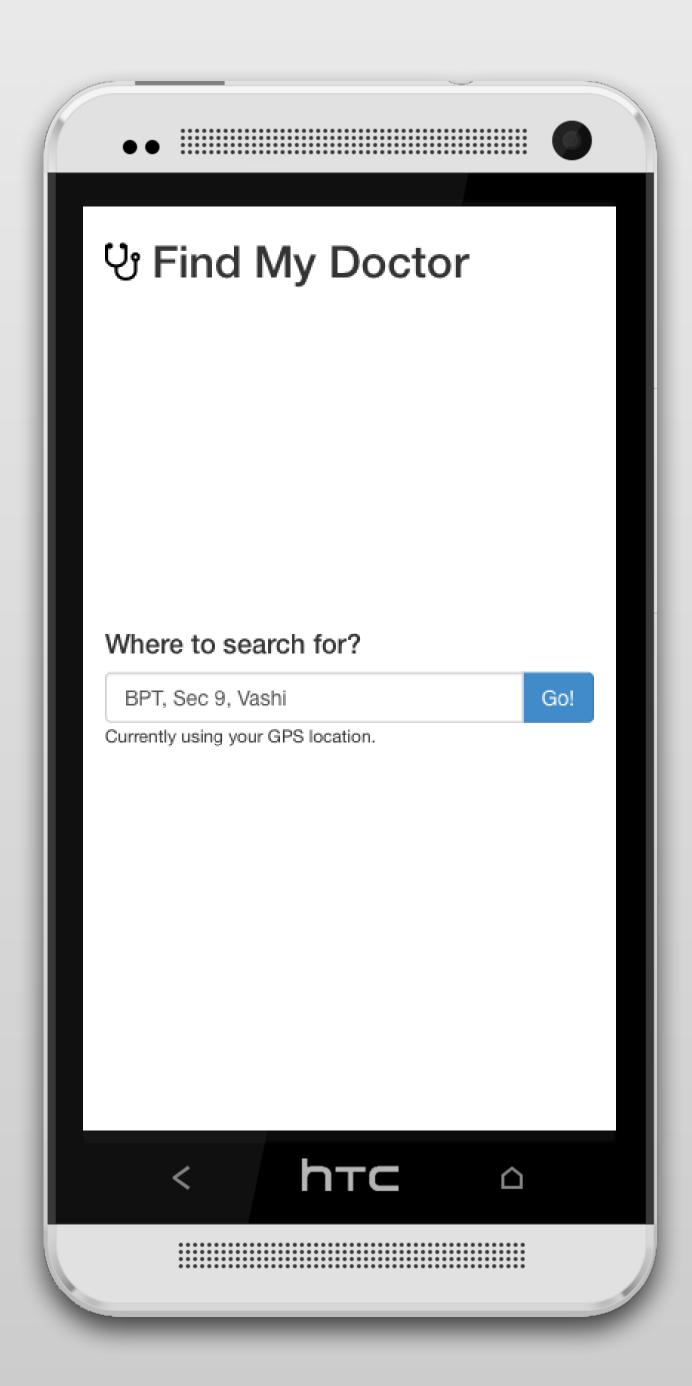
Spam



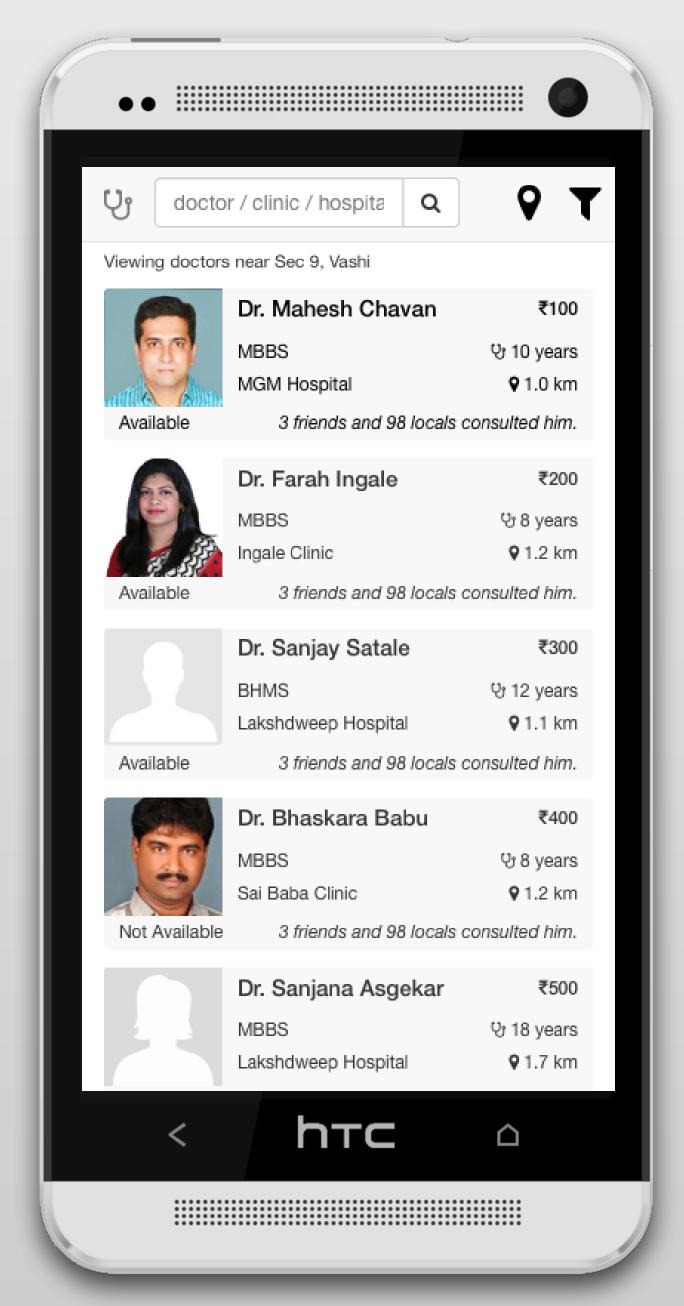




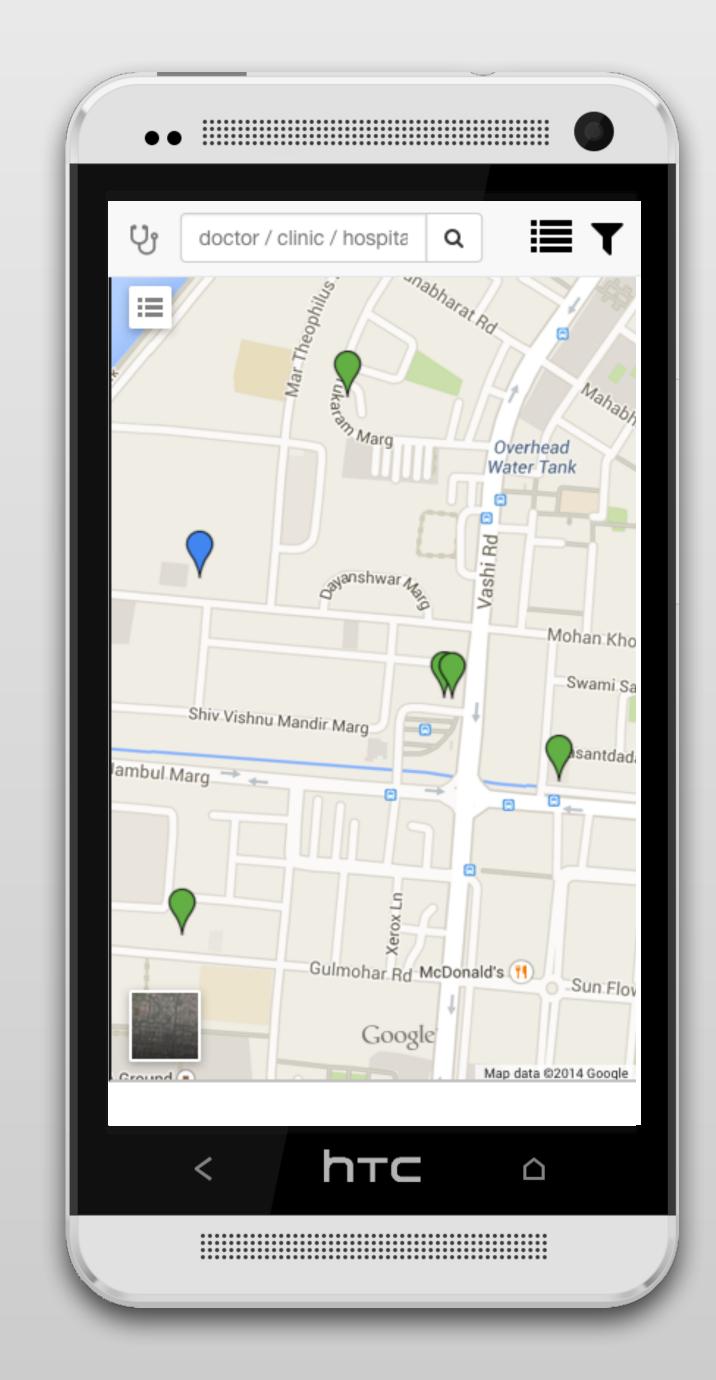
Location preference



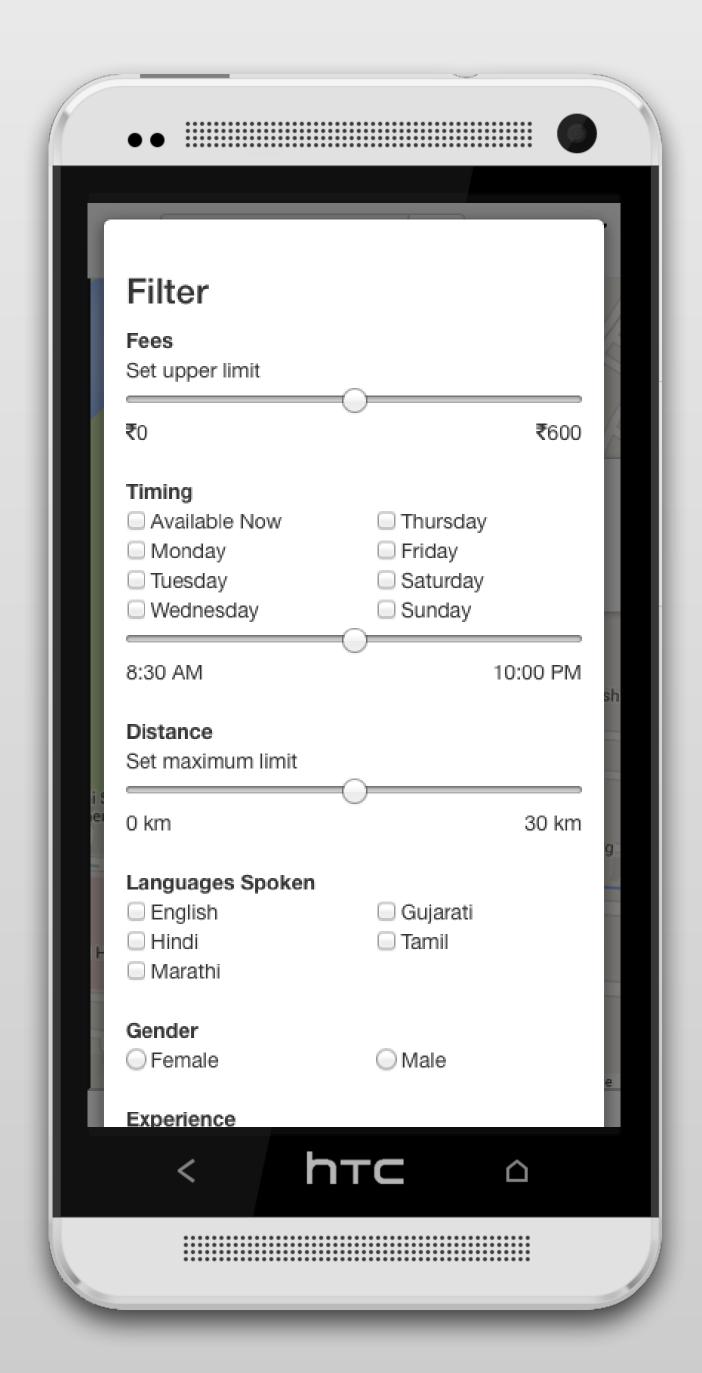
List view



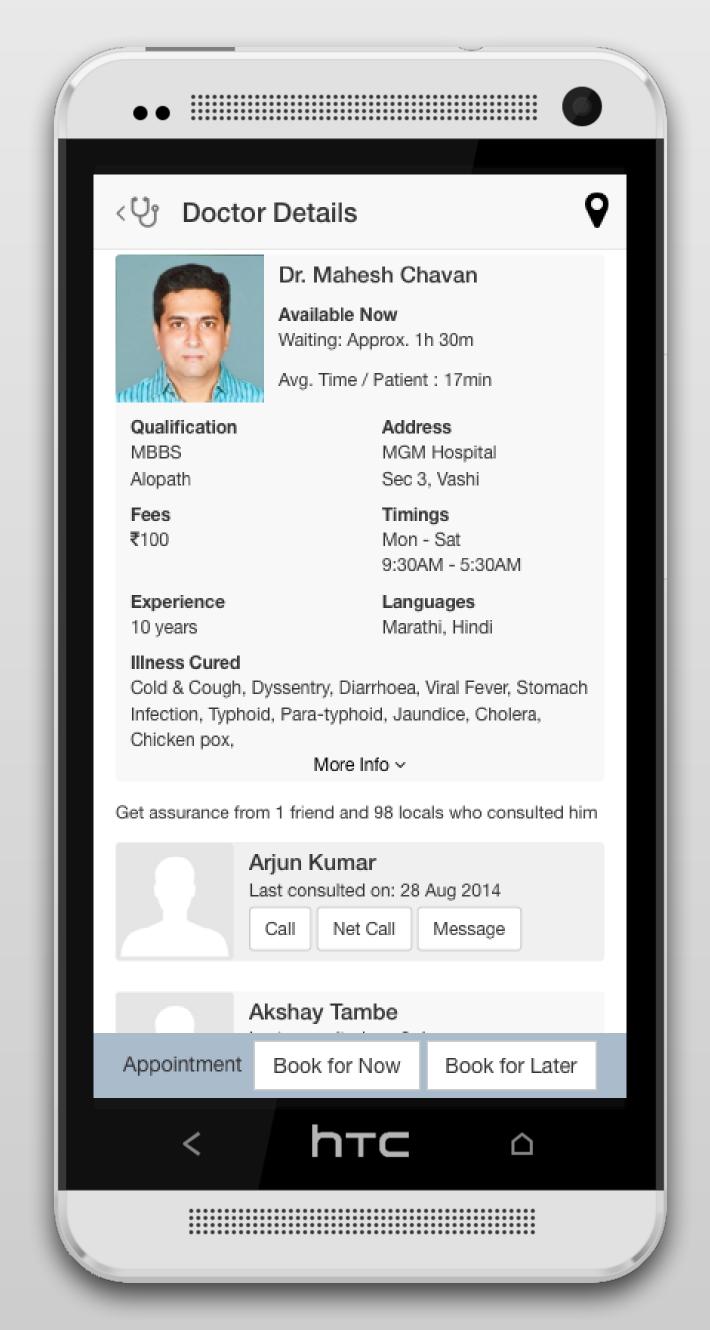
Map view



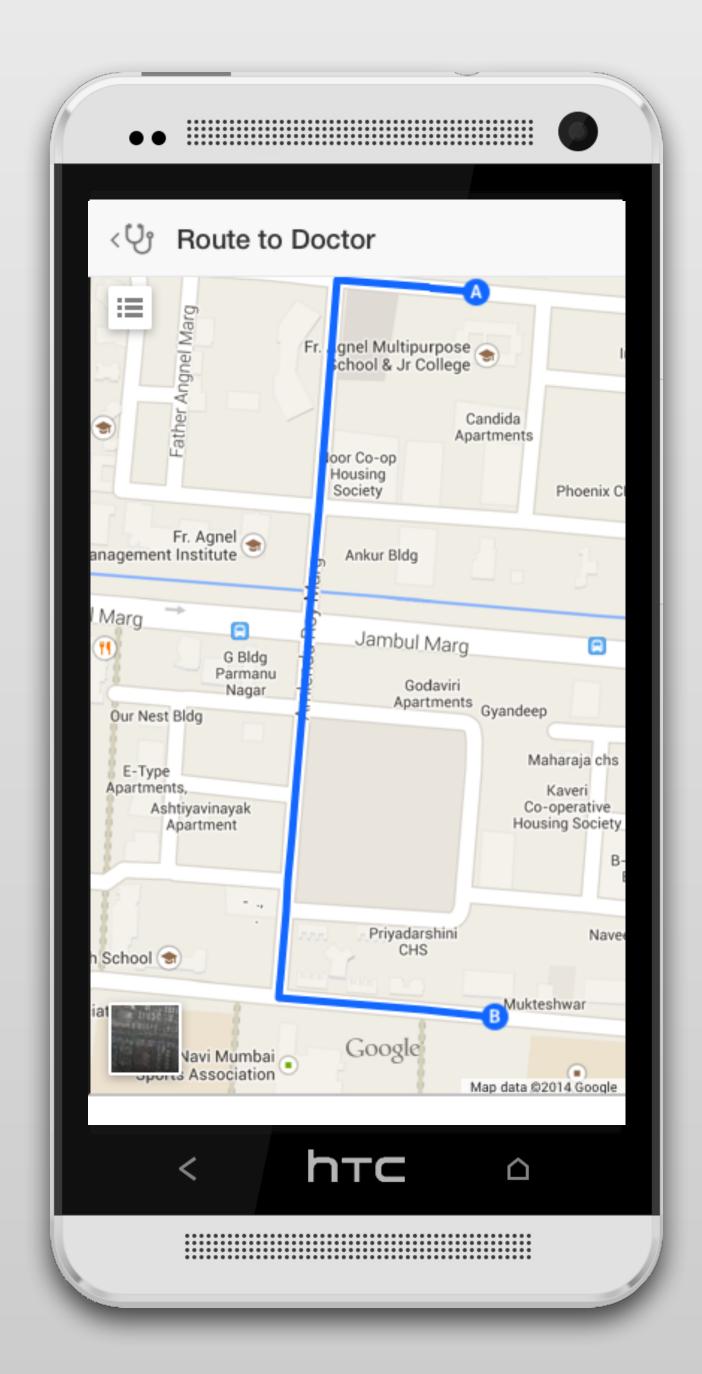
Filters



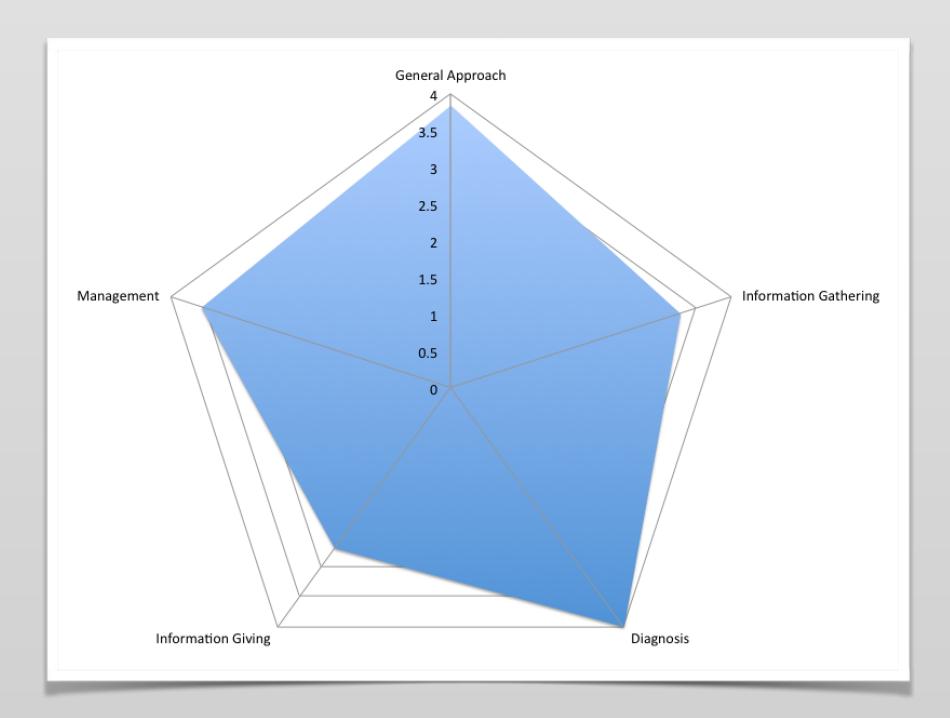
Detailed view

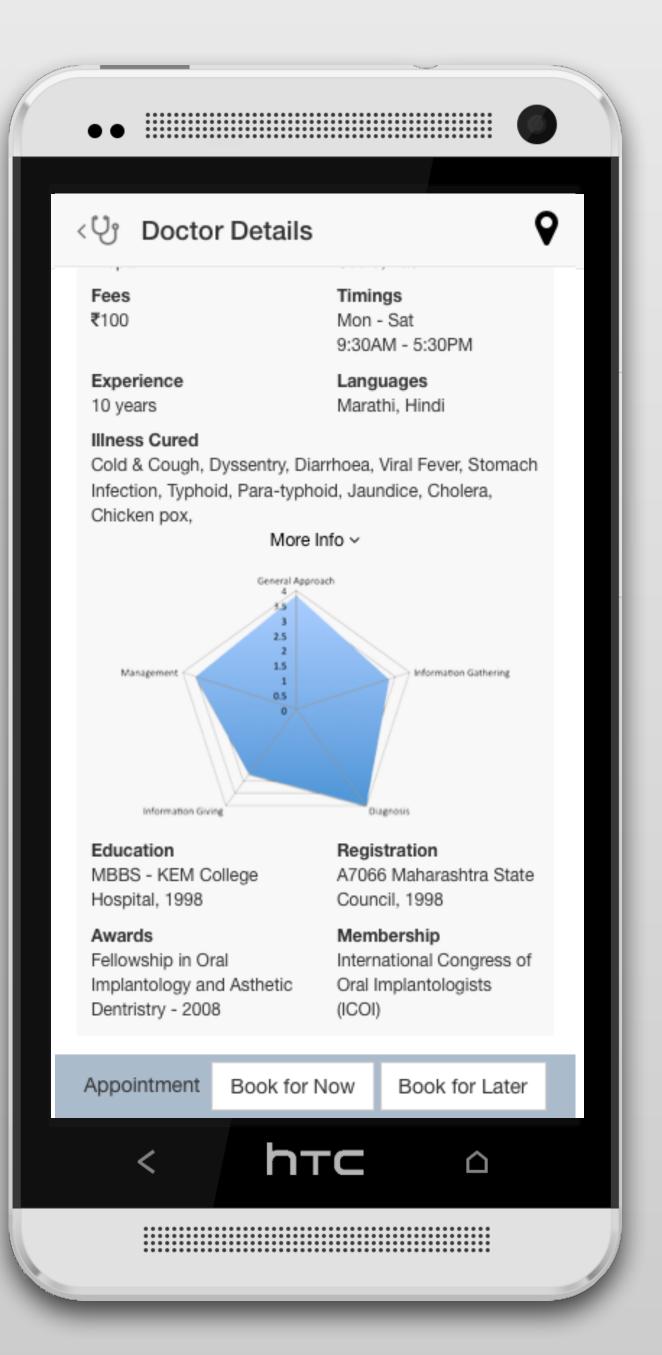


Route to doctor

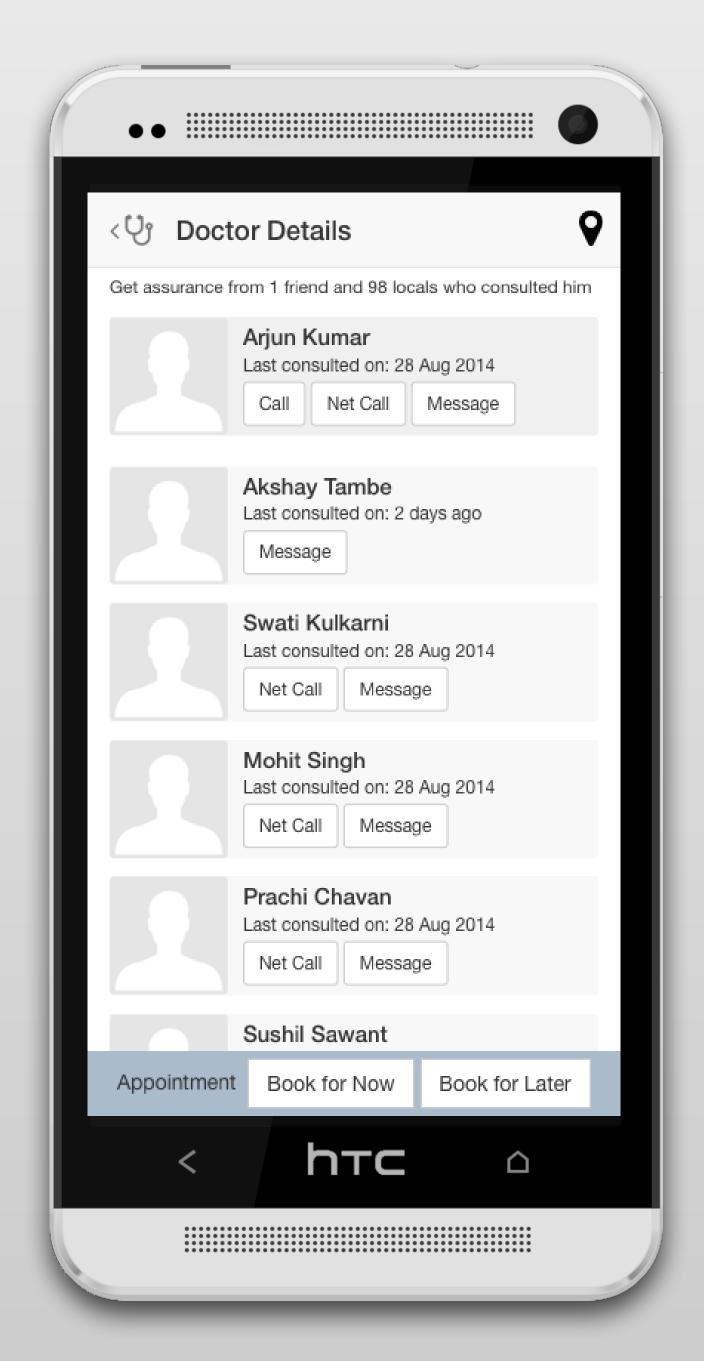


OSCE pentagon

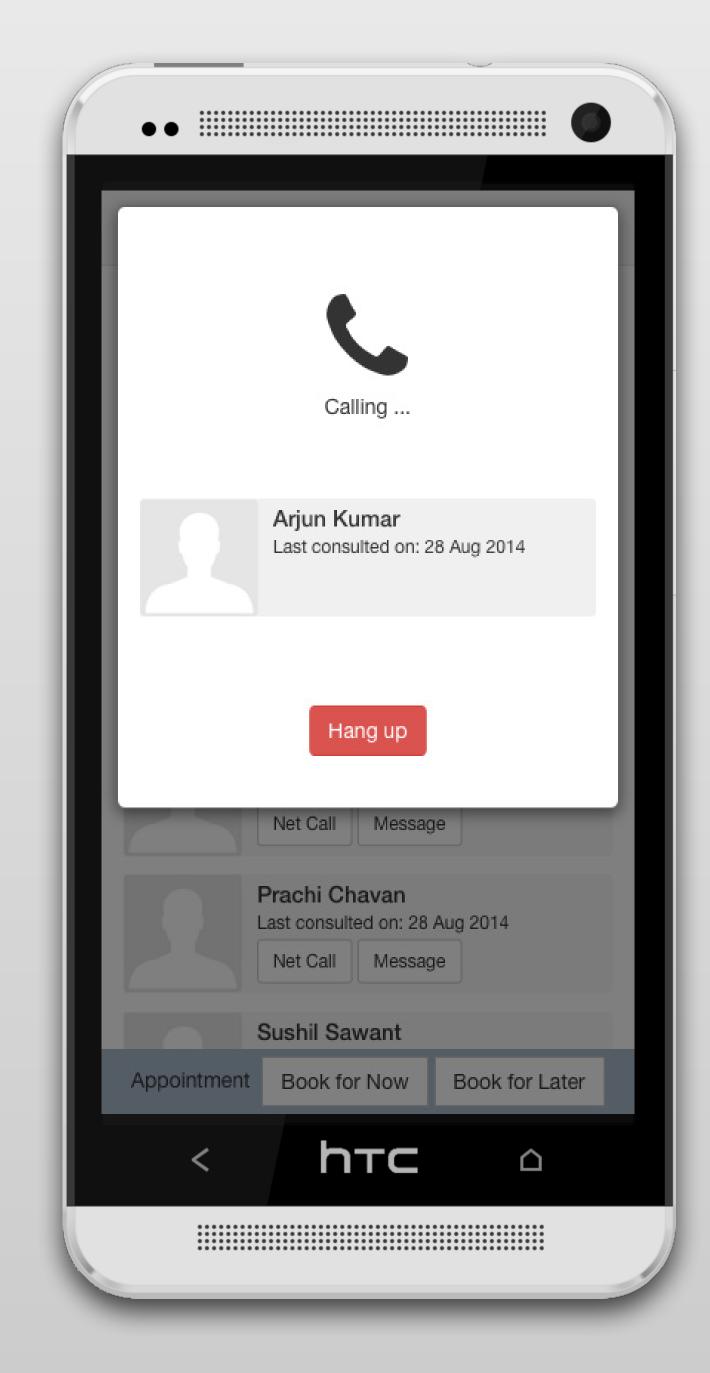




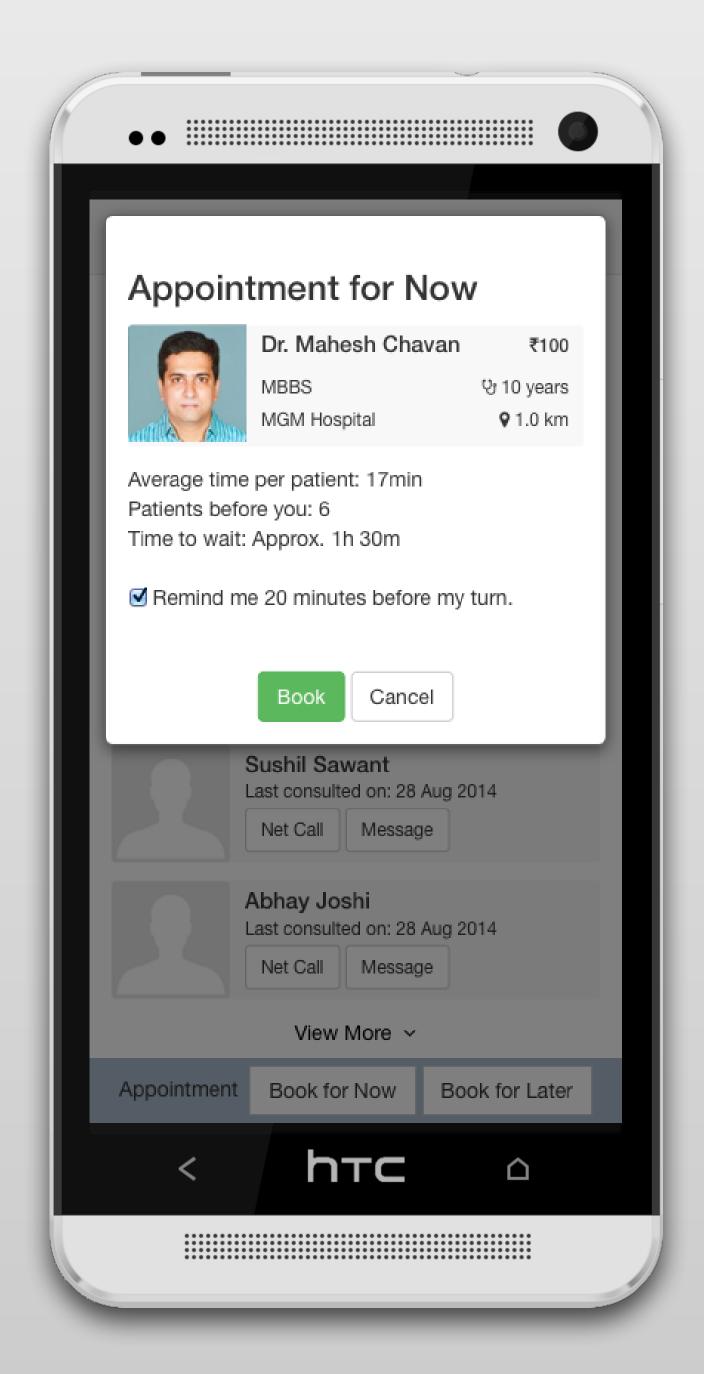
Social connect



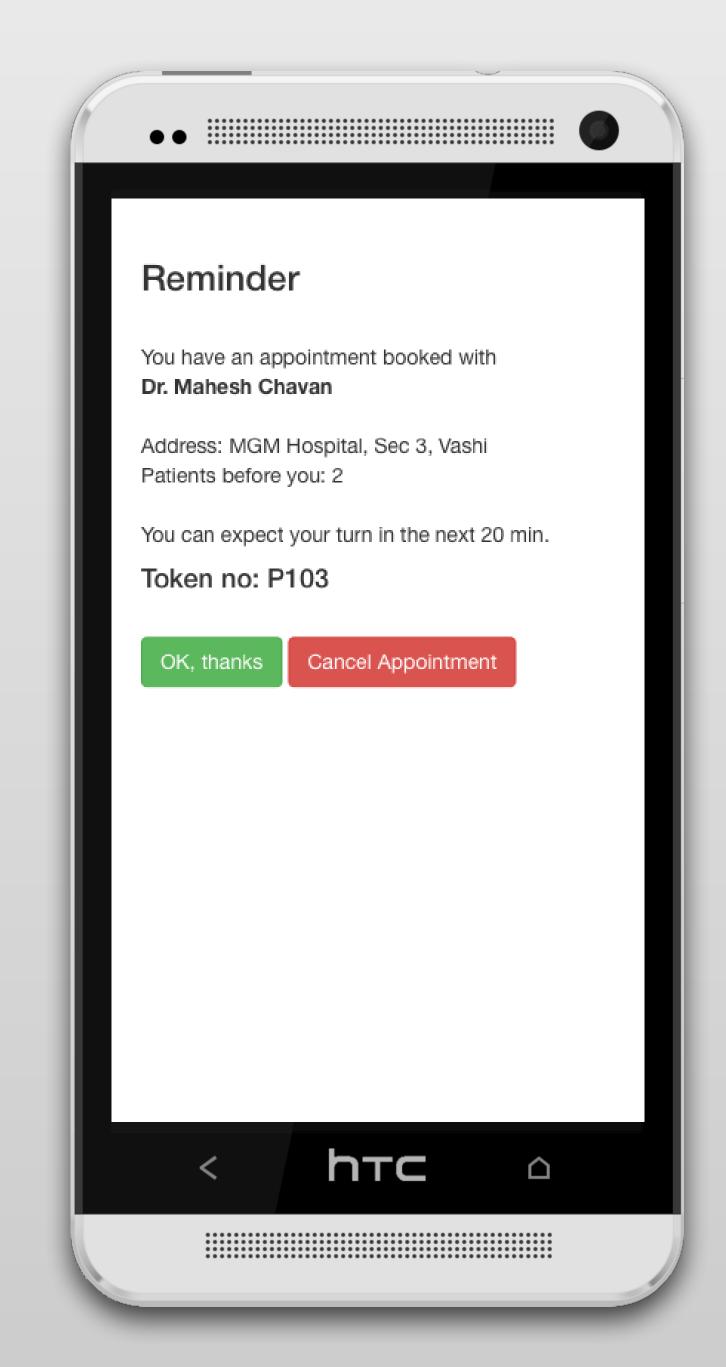
Net call



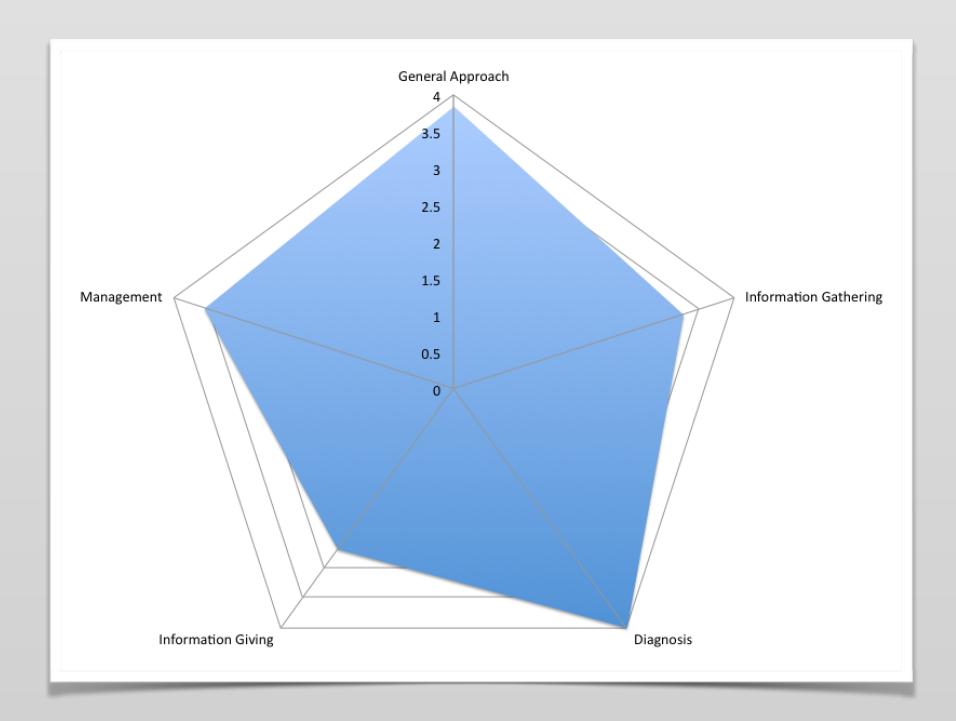
Appointment booking



Reminder



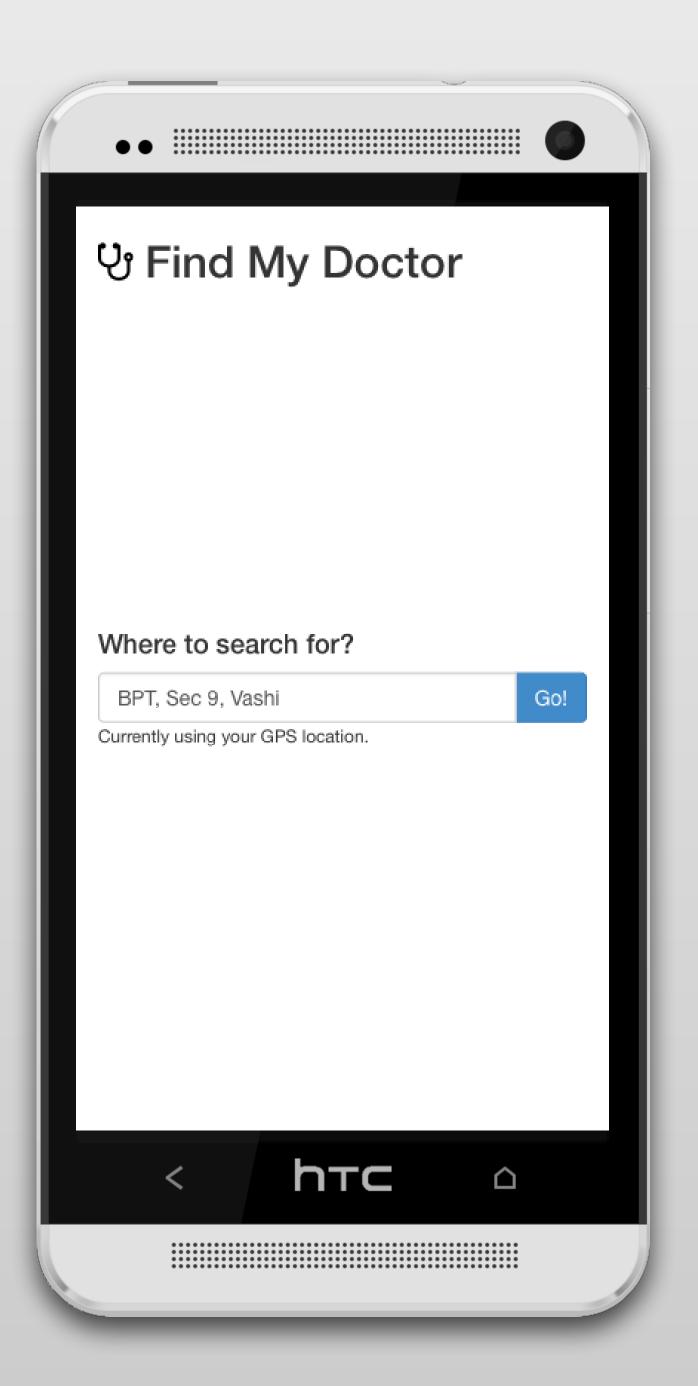
Post consultation feedback



• •
Feedback
You had an appointment booked with Dr. Mahesh Chavan. Please spare 5 min to give a feedback for your experience.
Q1. Please mention the illness keywords related to your consultation with the doctor.
Q2. The Doctor was Respectful and Polite. S. Disagree OOOOS. Agree
Q3. The Doctor gave enough time to the patient. S. Disagree OOOS. Agree
Q4. The Doctor listened to the patient's problems & queries. S. Disagree OOOOS. Agree
Q5. The Doctor appropriately examined the patient. S. Disagree OOOS. Agree
Q6. The Doctor gave enough information about the illness to the patient. S. Disagree OOOS. Agree
< htc o

Prototype 1

HTML/CSS
Google Maps API
APK through Phonegap
Pooshwoosh push notifications



Evaluation

9 users

First time health-seeker

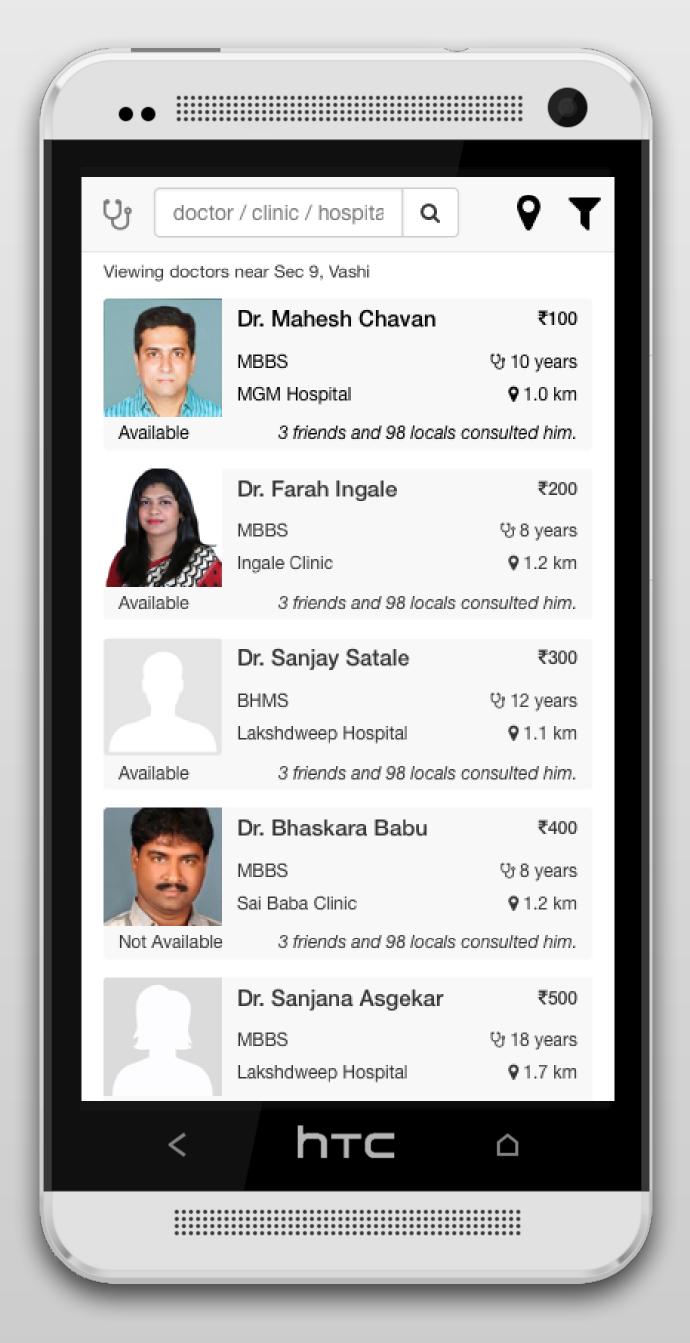
None of the users had used a similar app before

Profession	Smartphone Usage	Age	Gender
Engineer	5 years	51	M
Engineer	2 years	46	M
Music Teacher	2 years	47	F
Tution Teacher	2 years	45	F
House wife	4 years	30	F
House wife	1 year	47	F
House wife	1 year	46	F
Student	5 years	20	M
Student	4 years	19	M

"You are a migrant to Sec 9, Vashi. You have fallen ill with heavy cold and cough. You want to use the app to find a relevant general practitioner."

Task 1: Amongst all doctors near you find the closest one

7 out of 9 users found using list-view 2 out 9 users found using map-view

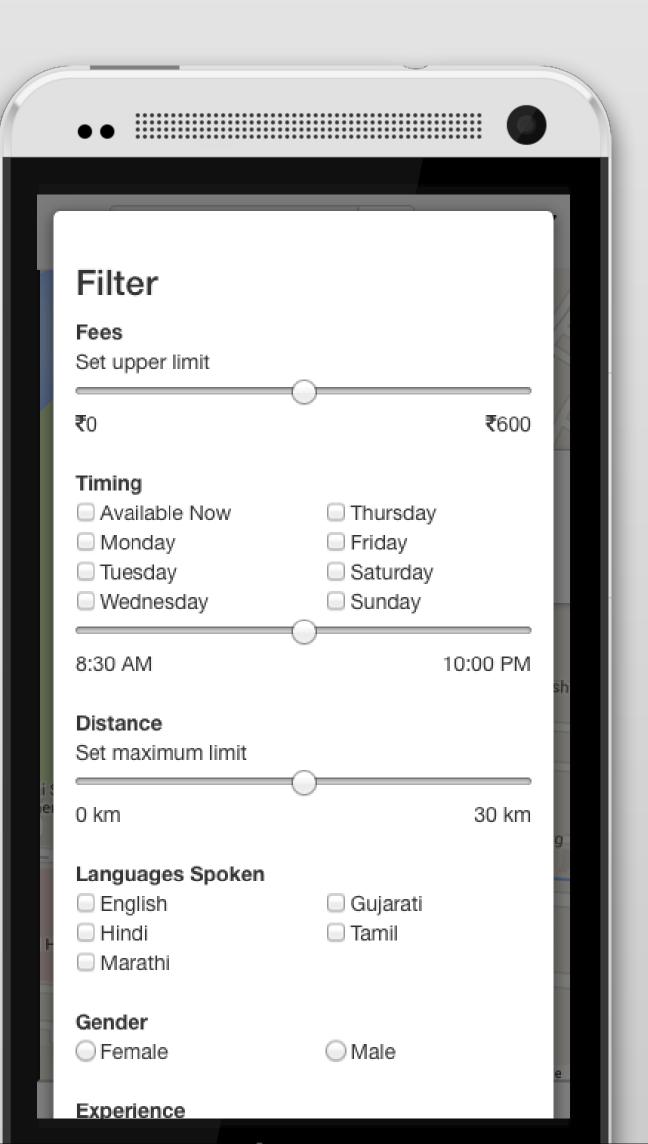


Task 2: You need to consult a doctor immediately. Find a doctor who is available now

5 out of 9 users found without filter3 out 9 users found using filter1 found through detailed view

Shortcomings:
Filter icon not understood by
5 out of 9 users.

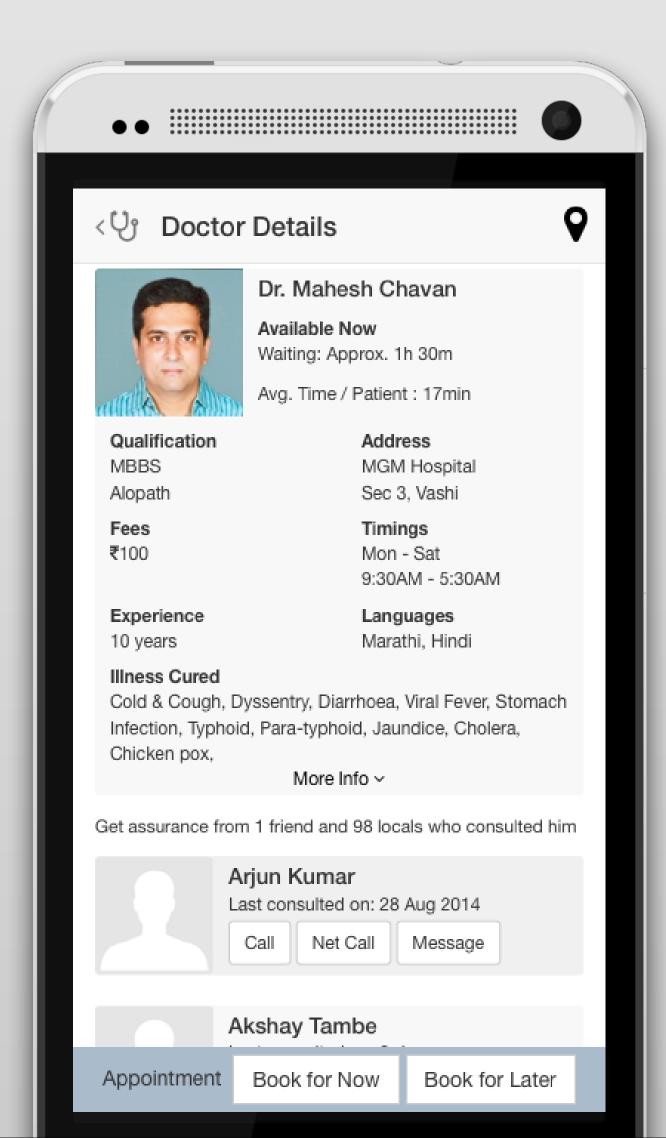
Apply filter button should be upfront Sort according to fees, distance



Task 3: Select a relevant general practitioner

4 users selected using quick-view3 users selected using detailed-view2 users selected using more-detailed-view

People require various levels of detail for deciding



Task 4: Five reasons why you decided to consult the specific practitioner

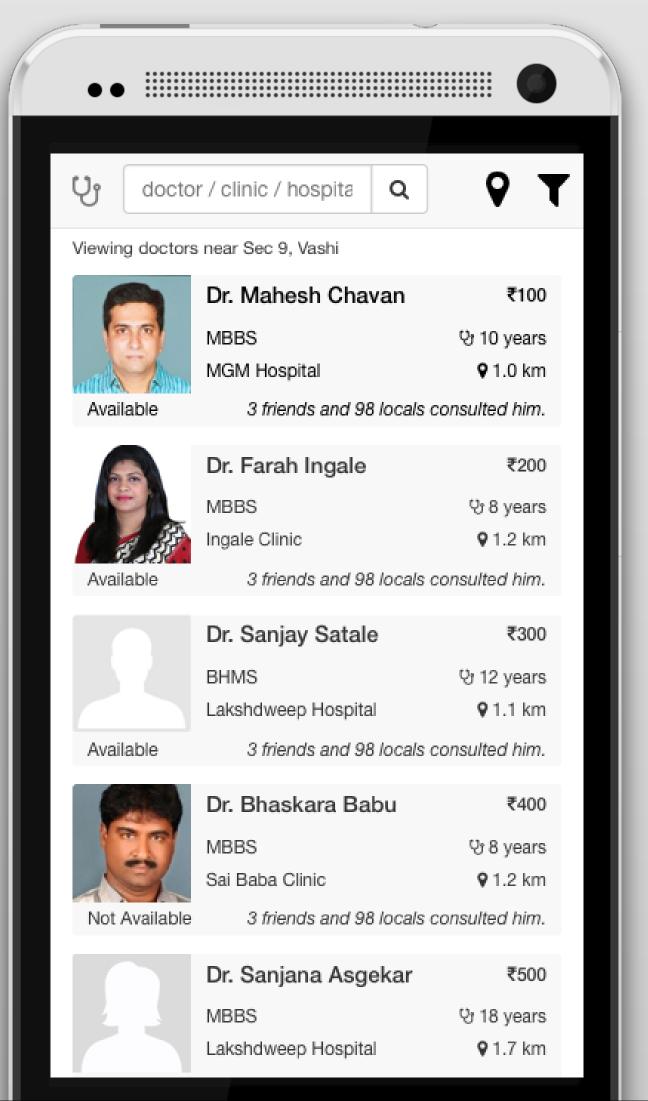
8 users had 'distance' as a reason to choose.

4 users had 'fees' as a reason to choose.

2 users had 'friends' as a reason to choose.

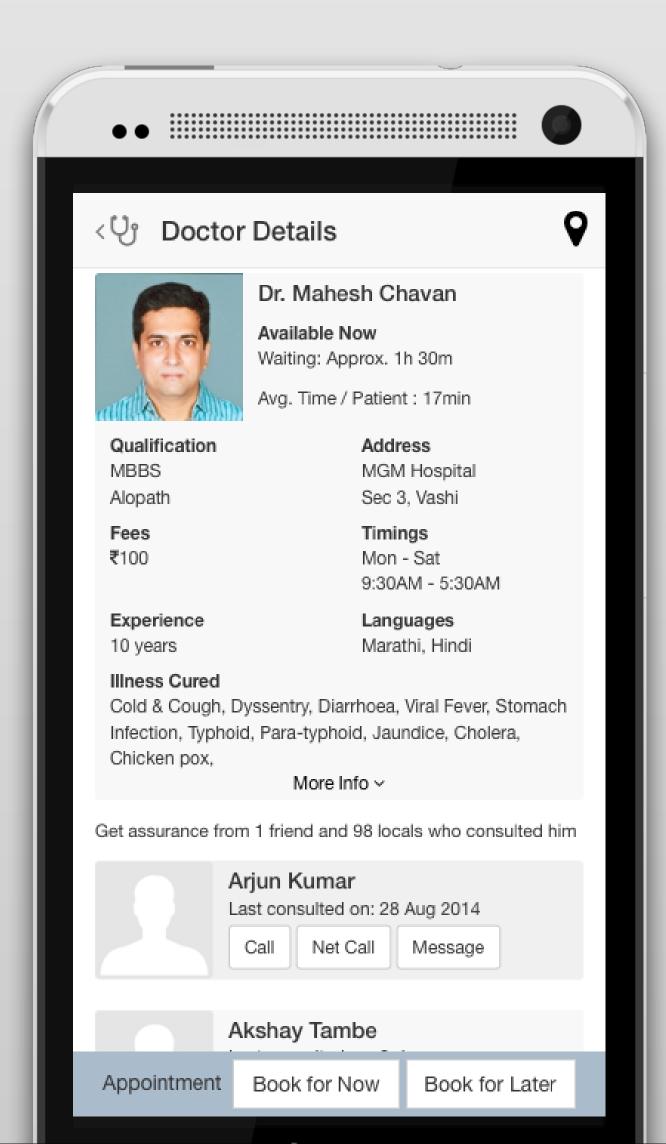
3 users had 'locals' as a reason to choose.

4 users intended to use the social connect feature.



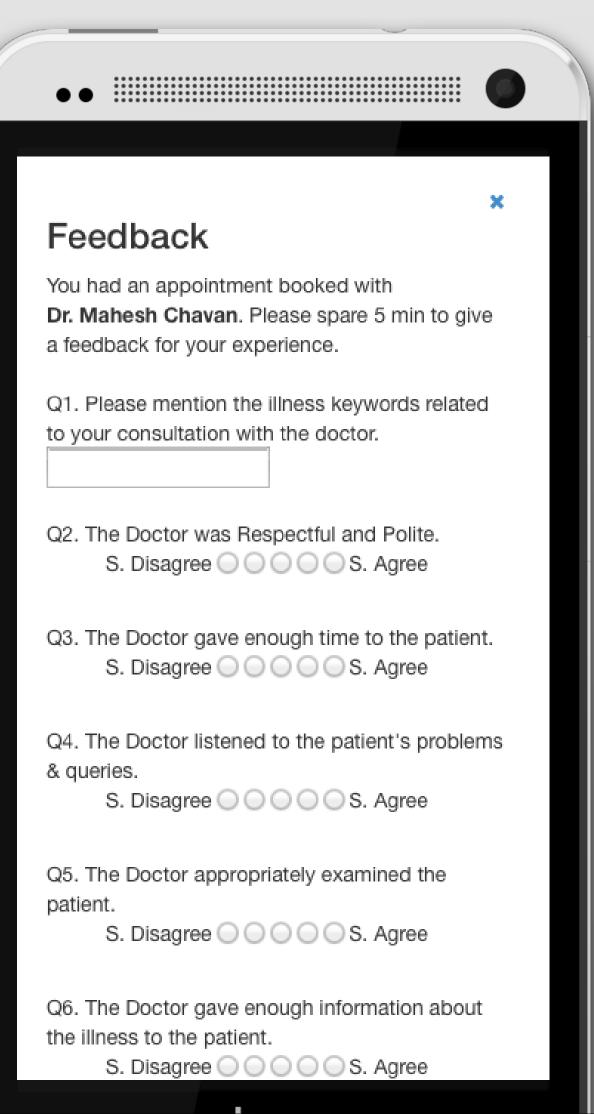
Task 5: Book an appointment with the practitioner for now

Everyone performed correctly.



Task 6: Feedback

6 of the users found the questions relevant1 user said its not practical2 users suggested other questions



Usability Issues

List view tiles do not feel clickable.

Map/list toggle icon not understood by 4 out of 9 users.

On the map, user location should always be visible.

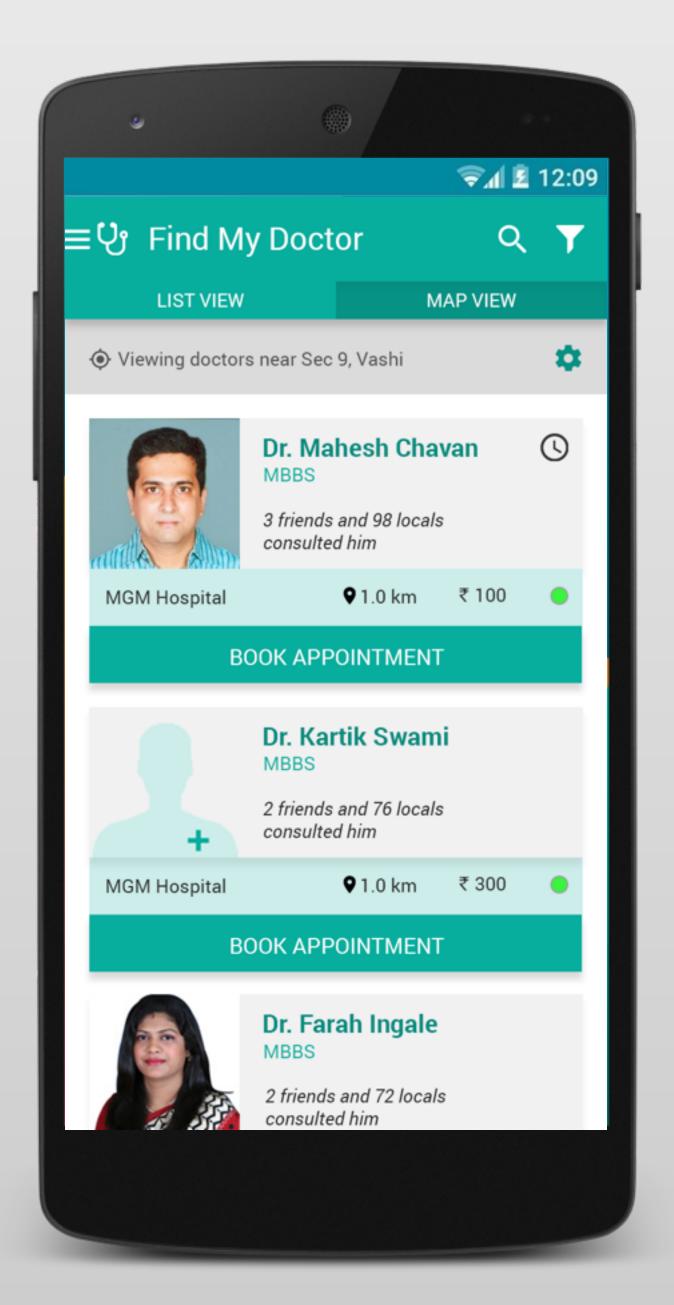
Detailed view not properly chunked.

Too many filtering options

Usefulness

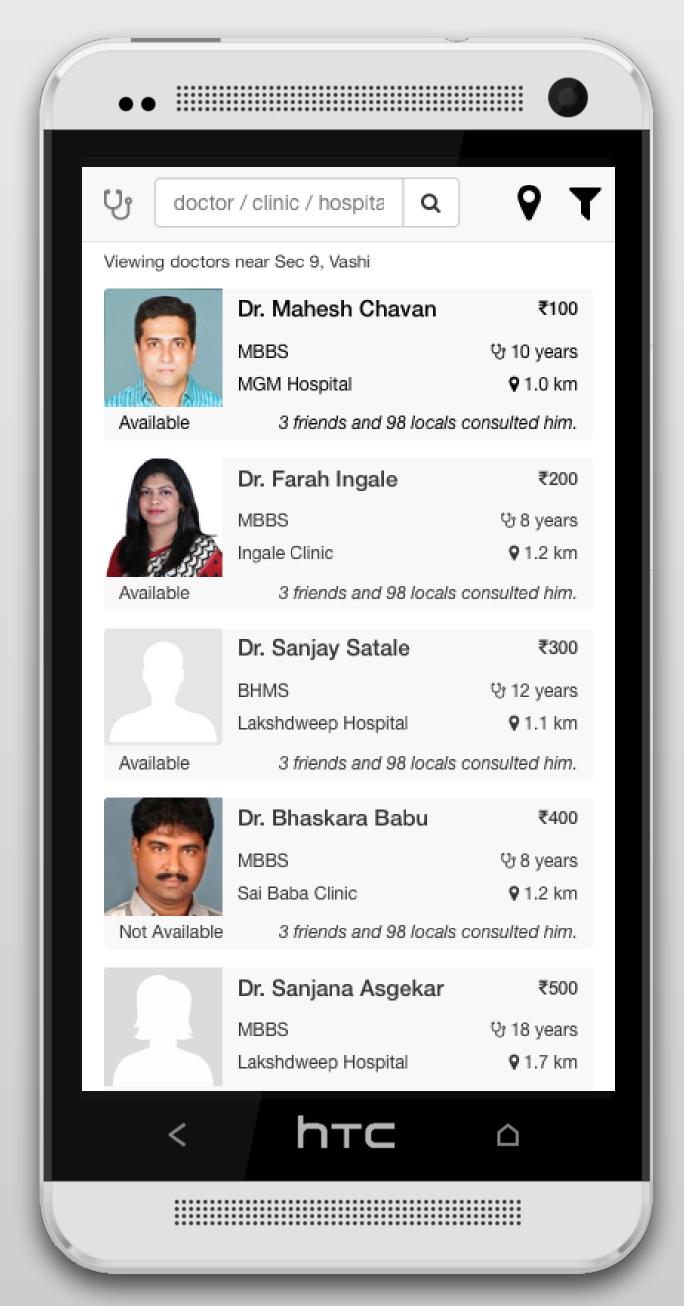
	SD	N		SA
The app helped you in giving enough information about GPs.		3	2	4
The app helped you in filtering as per your preferences.		1	2	6
The app helped you find a desirable GP.			3	6
The app helped you in making better conversations with others.		1	5	3

Prototype 2



Final Concept

List view



Future Scope

Report/flagging users for SPAM

Relationship management feature

Scale it for Dentist, ENT, Eye

App for Doctor/Receptionist

Business Model

Shortcomings

Localisation in Navi Mumbai could not be identified

Social connect can lead to SPAM

Feedback system is difficult to be effective

OSCE pentagon may not be effective

Evaluation of only first time health-seeker

Questions?