

# **Symptom Communication**

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# Goal

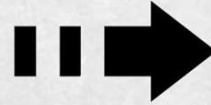
Explore lexical differences between patients and providers for describing symptoms.

- what languages and vocabularies people use
- patient to patient vs patient to doctor

# METHODOLOGY



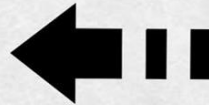
UK Patients Forum  
([www.patients.co.uk/forums](http://www.patients.co.uk/forums))



Extract patient conversations  
related to IBS, Allergies and  
Depression



Comparison between symptoms as  
described by a doctor and a patient



Mine the text for features  
related to a patient's  
description of their symptoms

Process of  
mining the text

Clean text

Part of Speech  
Analysis

Key Features

Phrase and Concept  
Clustering

# Medical Ontology for Allergy Symptoms

## skin and integumentary tissue symptom

itching

rash

ankle rash

blotchy red rash

diffuse rash

exanthema

maculopapular rash

papular rash

purpuric rash

## respiratory system and chest symptom

congestion

nasal congestion

respiratory abnormality

wheezing

sneezing

## HELP

feed

a bit

combat

## GET

a weird tingly

a dry mouth

a sense

diarrhoea

headache

## SYMPTOMS

Itchy eyes and skin

Nasal Congestion

Rash

Sneezing

Wheezing

# Allergies

muzzy

the skin

gas

the problem

a blister

the difference

the allergy building

## FEEL

dandelion

chinese food

mustard

a big meal

a bit

chocolate

pistacios

## EAT

## FELT

angry, heartbroken, horrible, worse, GP about the depression, afraid, anxiety attack, ashamed, bit mad, can't stop, cat killer, drugs, fault, guilty, hearing voices, worthless, instability, lot of paranoia, pain, poor mental state, stupidity, special person, sexual abuse, tears

## TRIED

life, suicide, depression, doctor day and night, heartbroken, therapy, Colleagues, Counselling, FB friend, drug alcohol suicide bid, anxiety, arms, can't stop, citalopram and amitriptyline, courage, depressants, elves, fatigue, different tablets, energy motivation, family, hard work but, hypnotherapy

## SYMPTOMS

Recurrent thoughts of death or suicide

Diminished ability to concentrate or make decisions

Feelings of worthlessness or excessive guilt

Fatigue or loss of energy

Depressed mood most of the day, everyday

Difficulty sleeping

# Depression

time, life, better, depression, house, suicidal thoughts, Citalopram, anxiety levels, complete zombie, Sorry msge. antidepressants, death, deleting Facebook comments, contact with friends, counselling, heart, medication, panic attacks, possessive, real real bad problem,

## STARTED

life, burden, family, aware, longer, knowledge, friend, girl, birthday, black days, children but, clear, insight into PTSD, kids, killing, numb, loyalty and sense, patronising, positive, relapse, relationships, responsibility, scapegoat, sort of support, strength, tattoos, therapist, woo

## WANTED

## Medical Symptom Ontology for IBS

### neurological and physiological symptom

fatigue  
chronic fatigue syndrome  
exhaustion  
extreme exhaustion  
extreme fatigue  
lethargy  
tiredness  
weariness  
anxiety  
intense anxiety

### digestive system symptom

abnormal bowel sound  
bloating  
feces and droppings symptom  
abnormal feces  
bloody stool  
constipation  
diarrhea

### nervous system symptom

sensation perception  
pain  
heartburn  
muscle pain

### sleep disturbance

insomnia

## Patient Described Symptoms for IBS

anxiety  
stress  
energy  
pain  
panic attacks  
this dread  
brain fog  
despair

flare ups insides working well keep things moving muscle aches particularly sluggish bowels rectal bleeding severe constipation sudden weight loss terrible diarrhea things moving along	this bad smell bad cramping trapped wind constipation diarrhea acid reflux foul smelling indigestion No poop gas	bad breath bad flare ups bloating bulge weight loss white watery wind windy stomach nausea
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heartburn  
discomfort  
this intense painful  
a slight  
a constant pain  
a gentle  
constant pain  
dull ache  
upset

don't sleep at night

# IBS Interesting Terms

fell swoop  
genetically modified  
ruptured ectopic  
ant acids  
jewel coloured  
vicious circle  
ectopic pregnancy  
Candida Defence  
Total Candida  
rib cage  
NICE Guidelines  
hiatus hernia  
cider vinegar  
Irritable Bowel  
Moderator comment  
Bowel Syndrome  
Aloe Vera  
anti depressants  
ice cream  
brain fog  
aloe vera  
psyllium husks

thyroid diseasedermatitis herpetiformisirritable  
autoimmune thyroid diseasedermatitis  
diabetesother autoimmune thyroid  
Total Candida Defence  
ruptured ectopic pregnancy  
Irritable Bowel Syndrome  
Messaging system requesting  
diseasedermatitis herpetiformisirritable bowel  
Private Messaging system  
diagnosis.The diagnostic tests  
post nasal drip  
delicious almond milk.5.Drink  
apple cider vinegar  
jewel coloured vegetables  
Aloe Vera Gel  
home enema kit  
cod liver oil  
intestinal bacterial overgrowth  
original Patient Experience  
water upon arising



# Conclusions

- larger data sets
- refine symptom extraction process
- advanced topic / sentiment analysis
- gap analysis between patient and provider language