Conversations with a Virtual Nurse Make Patients Healthier and Happier

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"Would you mind if I ask Siri for a second opinion?"
What do we do?

• Virtual nurse avatar ("Molly")
• Molly helps patients with chronic health conditions
  ➢ CHF, addiction, diabetes, asthma
• She speaks to patients, and patients can speak back
Video Demo: Chronic Heart Failure Daily Check-In

- Patient gets daily reminder from app
- Uses Bluetooth scale and blood pressure cuff
- Answers questions
- Info triaged & sent to clinician

https://youtu.be/ka0WXPtq64Q
Clinician Portal

NOTIFICATION DASHBOARD

2 Patients with Notifications

Mike McSweeney
Phone: [Redacted]
ID: [Redacted]

☑ High blood pressure: (160/97 71 BPM)
03/08/16 06:01 AM

Bryant
Phone: [Redacted]
ID: [Redacted]

☑ Weight gain: (TDW 250) Last Weight: 262.7 +18.3 lbs
03/08/16 04:39 AM
☑ Weight gain (4 lbs over 5 days) (TDW 250) Last
Weight: 262.7 +18.3 lbs
03/08/16 04:39 AM

Patient Notes

Check-Ins Which Generated Alerts:

Weight Charts
When do callers talk to Molly?

Opening question: “How are you doing today?”

Final question: “Anything else you’d like to share with me today?”
What does Molly say back?

“Thanks for sharing that with me.”
What are they saying to Molly?

- I'm sick
- was in the hospital Monday Tuesday got home last night doing better
- Okay my right leg really hurts
- the problem with my lower back from the procedure yesterday and it's very painful difficult to walk everything
- did not take medicine in the AM
- Doing ok after the operation
What are they saying to Molly?

- now I gotta lose my Christmas weight now
- well I will continue with the 40 grams of lasix in the morning and the evening for one more day
- yeah I forgot to take my meds last night I came home fell asleep and obviously it's Thanksgiving so you know how that goes and that's why
- yes I did cut back on the lasix yesterday as required and my stomach area is still bloated
- yes I have a cold and I want to know if I could take Afrin nasal spray it's an over the counter medication
What are they saying to Molly?

- I'm good and my day is for angiogram so I'm a little anxious
- I'm ok my mom was in the hospital last night so I can’t get a lot of sleep
- yeah I went out to saddle ranch with my family yesterday saddle ranch restaurant had a salad but I also had some wings
What are they saying to Molly?

- doing good sorry I took the weekend off no check ins
- I feel great Molly thank you for asking
- I'm busy cooking but fine thank you
- I'm good Martin Luther King Day got a day off yay
- sad I didn't win the lottery Powerball is 1.4 billion
- have a nice day dear
- I just have been overeating and I'm going to cut back
- not today have a good Turkey Day gobble gobble
- yes it's Sunday so time to go to church
- happy Halloween oh my god the ghost behind you
- no I'm good Snoop Dogg

Personal, humorous
Why does it matter?

• More engagement
  • “Feels like someone is holding my hand”
  • “Not a cold machine”

• Engagement = compliance = healthier outcomes

• Patient Self-Management
Future use of voice

- Intelligent / empathetic responses
- Negative / stressful word patterns
- Emotion detection

Stress can be indicative of health event not yet detected by BP / weight
Thanks, Mobile Voice!

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Author of upcoming O’Reilly book, *Designing Voice User Interfaces* (end of 2016)