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Inglis is adapting "smart home" technologies to make it possible for disabled residents to live more on their own.

Freedom in Speech



Richard Bernard, who has a muscle disorder, beside the Amazon Echo that he controls with his voice, enabling him to live independently at Inglis Gardens. TIM TAI / Staff Photographer

By Erin Arvedlund
STAFF WRITER

‘Alexa, turn on Mom.”
The kitchen lights flicker on for Richard Bernard, 45, at his apartment at Inglis Gardens on Belmont Avenue. Until last summer, Bernard, whose movement disorder leaves him unable to walk or speak with ease, was living down the block at Inglis House, an assisted-living facility. But he wanted to live on his own.

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Watch a video of how Amazon Echo helps Richard Bernard and other Inglis residents at <http://www.philly.com/echo>

Voice-recognition devices aren't just helping to create smart homes, they're also helping those with disabilities live on their own more than ever before. For those like Bernard, who lived in Inglis House for 17 years, a new technology pilot project is bringing immense freedom.

Inglis has funding for and is installing the Echo in 25 of its independent-living apartments, at a See **ECHO** on E2



Carla Laws uses the Internet with a joystick and an alternative keyboard in the computer lab at Inglis, a residential community for the disabled now incorporating a variety of adaptive technologies.

A sound solution for life on their terms

ECHO from E1 cost of \$3,500 per unit, including software and training. It hopes to do more.

The cost for the basic smart-home package in Bernard's apartment included the Echo, an Amazon Dot, a Nest thermostat, a Ring doorbell, a Schlage Smart Lock, a Wink Hub, and smart switches and lights. The equipment allows for independent control of thermostat, lights, and security through the Echo and Wink Hub.

“We plan on educating our consumers who own the Amazon Echo to download new

“Insurers are very interested in these technologies, and we anticipate that they will support paying for the technologies and some of the support associated. But to date they have not.”

Dyann Roth, president and CEO of Inglis

skills from the open-source Amazon database,” said Inglis marketing head Gary Bramnick. Inglis will share data from the 25 residents with partners such as Amazon and Mobiquity.

Inglis pushes the technological frontier when it comes to its residents. The nonprofit has set up a state-of-the-art computer lab to operate its Adapted Technology Program, where IT professionals work with folks like Bernard to test new products that enable them to use the internet, play computer games, and communicate over Skype using EyeGaze eye-movement-driven speech-generating devices made by Tobii/Dynavox and 3-D printed phone cases. Many of the smart-home devices are built into motorized wheelchairs.

Inglis partners with disease-specific groups such as the National MS Society's Greater Delaware Valley Chapter, ALS Greater Philadelphia Chapter, the Library for the Blind and Physically Disabled, and HelpHOPELive. But local businesses are also partners,



Diane Hunter uses a head stick to operate a keyboard at Inglis, which strives to provide its residents more independence. TIM TAI / Staff Photographer

including Comcast, HealthSignals, and Mobiquity, which has offices in Wayne, and many have made a pilgrimage to the Inglis lab to test new products, such as Comcast's voice-activated Xfinity TV remote.

But the project with Amazon's Alexa represents the program's latest push. Inglis wants tech companies to build in the capabilities from the start. “Business really needs to consider this population when creating products,” said Dyann Roth, president and CEO of Inglis.

Health plans, managed-care providers, and local, state, and federal agencies must recognize these technologies as part of daily routines, which may eventually be covered and reimbursed fully.

“Insurers are very interested in these technologies, and we anticipate that they will support paying for the technologies and some of the support associated. But to date they have not,” Roth said. Moreover, people with disabilities “will not be able to

use any of it without the human support. And that is what we will need funding to expand and sustain.”

Inglis' budgeted revenues for fiscal 2018 total \$42 million, with 619 employees serving 252 residents in the long-term-care community (Inglis House); about 500 clients in 350 affordable, accessible apartment units; and more than 500 who live independently in the area. For fiscal year 2017, Inglis' operating budget for the Adapted Technology Program totaled \$470,000, including the internal lab, in-room support, and the testing lab, as well as the Community Computing Programming. About \$50,000 was spent throughout the year for new equipment and upgrades to software for monitors, keyboards, and EyeGaze boxes for the residents, many of whom type on computers using one finger or just their eyes.

“None of these funds are reimbursed. All of the funds supporting Adapted Tech come from donations and grants,”

Bramnick said.

Mobiquity CEO John Castleman visited Inglis to help program the device for Bernard and other residents, and in the process realized that voice-driven technology is a game-changer.

“I went to Inglis and saw residents testing the voice-activated devices, and I called Amazon, and they immediately got it. What we'll probably do together, Amazon, Mobiquity and Inglis, is work on ‘skills’ for Alexa. We create them for Inglis to make it easier for residents to use speech, even for those who aren't completely verbal,” Castleman said.

Bernard, for instance, has dystonia, a movement disorder characterized by painful, prolonged muscle contractions that result in abnormal movements and postures, and can lead to cramping of the feet or hands, curling toes, or turning and twisting of the neck. For Bernard, it can also make it harder to instruct Alexa with full sentences, so the device was programmed

for him to control the lights and change the temperature with a single word.

“Turn off Mom,” he tells his smart-home device. *Mom* is the word he chose for the kitchen, and the kitchen lights turn off. The word *Bill*, his brother's name, turns on and off the lights in his bedroom, while *John* — his inside joke — controls lights in the bathroom.

“Voice activation is a huge help to Inglis' constituents,” said Castleman, of Mobiquity, which is helping to program Alexa to understand one-word commands.

Bernard and his community IT director, Michael Strawbridge, settled on one-word commands for the Echo in his apartment.

“We figured we could change the commands to words that Richard could say, but also people whom he doesn't get to see much,” said Strawbridge. “He found words that he could say and enjoys saying.”

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