Regions Hospital Case Study:
VSee Custom Waiting Room and Telemedicine Carts

Regions Hospital is a Level I Trauma Center serving adults and children in Minnesota and western Wisconsin. As a private, non-profit teaching hospital, Regions provides outstanding care in neuroscience, heart surgery, cardiology, oncology, emergency care, burn care, orthopaedic care, mental illness and more. Last year, Regions cared for more patients than any hospital in St. Paul.

In 2014, Regions was the first hospital in Minnesota certified as a Comprehensive Stroke Center by the Joint Commission. Regions was also the first academic medical center and fourth hospital overall to qualify as an Emergency Center of Excellence. With top specialists in more than 50 areas of medicine, Regions has recently started providing telemedicine services to rural hospitals in Minnesota, Wisconsin and throughout the upper Midwest.

In 2013, Regions completed its first telemedicine pilot. The pilot enabled Regions to practice telemedicine with other hospitals that had already established video conference technology.

The problem with this model was that it was complicated to set up and secure. It required dedicated network infrastructure and expensive hardware that had to be maintained. Many hospitals, especially the smaller community hospitals, did not have the resources to implement this kind of solution.

VSee's peer-to-peer video conference solution works over 3G/4G networks and requires no dedicated infrastructure. It offers a range of video solutions for engaging in telemedicine including: mobile kits, telemedicine carts, web-based waiting rooms, and customized telehealth portals.

The Case:

Lakeview Hospital is a non-profit partner hospital located 30 minutes from Regions Hospital. It serves the eastern Twin Cities' metro area and western Wisconsin; however it does not have a neurologist on site for treating stroke or other neurological conditions. Stroke, in particular, is a highly time sensitive condition. Stroke victims lose 1.9 million neurons for every minute of blockage, which can lead to permanent brain damage. There is only one FDA-approved stroke medication that can be given, and it must be given within three hours of the initial onset of the stroke if appropriate. A successful video telemedicine solution should have:

1. Remote Pan-Tilt-Zoom (PTZ) camera control for the consulting physician to examine the patient.
2. Collaborative viewing capabilities for attending and consulting physicians to step through CT scans together in real time.
3. A simple interface that requires minimal effort for physicians to use
4. The ability for consulting physicians to answer a call from any device (iPhone, iPad, laptop).

These features would allow attending physicians to have immediate consults with specialists so that they could make more informed and timely decisions regarding their patient's treatment.

Alternative solutions:

Regions Hospital evaluated four possible video telemedicine solutions. They chose VSee because of its ability to control a PTZ camera (for examining the patient) and its ability to

easily share and discuss CT scans in real-time. As Regions hoped to partner with community hospitals, they knew the solution they selected must also be affordable and adaptable for future needs. HealthPartners Consulting Analyst Melissa Johnson said, "From a telestroke perspective, we needed a solution that would allow us to step through CT scans while still being secure, affordable, and easy to use. VSee is a superior platform to accomplish this."

Moreover, VSee telemedicine solutions do not require the use of custom hardware and operating systems. This minimizes the technological barrier for physicians and allows integrated hardware and software solutions (e.g. the telemedicine cart) to be easily utilized for other purposes beyond telestroke. It also allows for video connection from all major platforms, including Macs, iPhone, iPad, and Android devices.

Implementation:

Regions Hospital has an existing structure in place for doing triage and consults by phone. For video consultations, Regions wished to mimic the existing structure. This would eliminate the need to create new processes and reduce the amount of training needed to provide video telemedicine consults.
The call process follows these steps:
1. The patient's attending physician calls the Regions Direct Operator
2. A Regions Direct operator triages, paging the on-call consulting physician if necessary.
3. The consulting physician calls Regions Direct.
4. The Regions Direct operator connects the consulting physician to attending physician for the video consultation.

The VSee online waiting room provided a good match for this workflow with the following features:
1. A web page with custom URL where patients (i.e. Attending Physicians) sign into a private waiting queue.
2. A provider dashboard where multiple providers may access the waiting queue. The queue shows each patient's wait time and allows multiple providers to see patients concurrently.

3. Ability for the provider to bring in a second or third consulting physician from the waiting queue.
4. Sound and text notifications via mobile device when a patient first enters the waiting room.

Initially, Regions planned to use the existing VSee online waiting room solution without modification. However, this meant they would not be able to centrally manage the consulting physician list. Each Regions Direct operator would have to manually add and individually manage their list of consulting physicians making it difficult to scale to other departments.

To resolve this issue VSee proposed a customized dashboard with a centrally managed consulting physician list. The custom dashboard would:

-   Show the name of the Regions Direct operator currently on-call with the attending physician.
-   Display a contact/status list that could be filtered by department (e.g. Stroke / Neuro, Trauma, Burn, Emergency) of the on-call consulting physicians.
-   Allow Regions Direct operators to add the consulting physician from this list into an existing video consultation.

A separate check-in dashboard was also created to allow consulting physicians to sign in by the correct department (e.g. Stroke / Neuro, Trauma, Burn, Emergency).
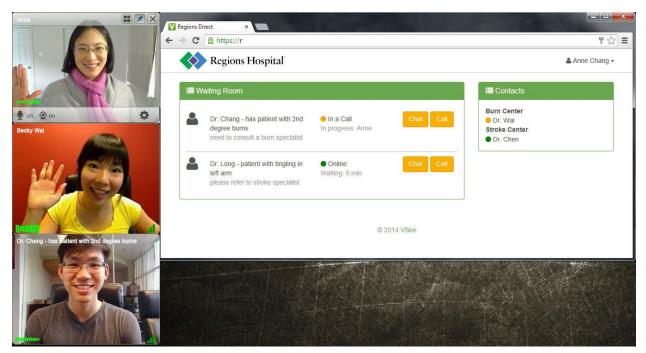
The Solution:
In total, the final implementation of the solution VSee provided included:
-   VSee telemedicine carts with PTZ cameras
-   Online waiting room (with remote PTZ control enabled)
-   Customized Regions Direct dashboard
-   Consulting physician check-in dashboard

All VSee telemedicine carts were assembled on-site by VSee staff.

Regions Direct operators can receive sound notifications and monitor video call-ins in a similar way they monitor phone and radio call-ins. Operators bring in the on-call physician when ready.