

# Creating Efficiencies in Chronic Disease Clinics Through Automation and Improving Compliance and Monitoring Without Human Intervention

Gary T. Hannah, President and CEO Vocantas Inc., Ottawa, ON, CANADA

## THE PROBLEM:

In 2010, The Ottawa Hospital Regional Thrombosis Unit reported the following issues:

Clinic was at maximum patient load capacity of 13,000.

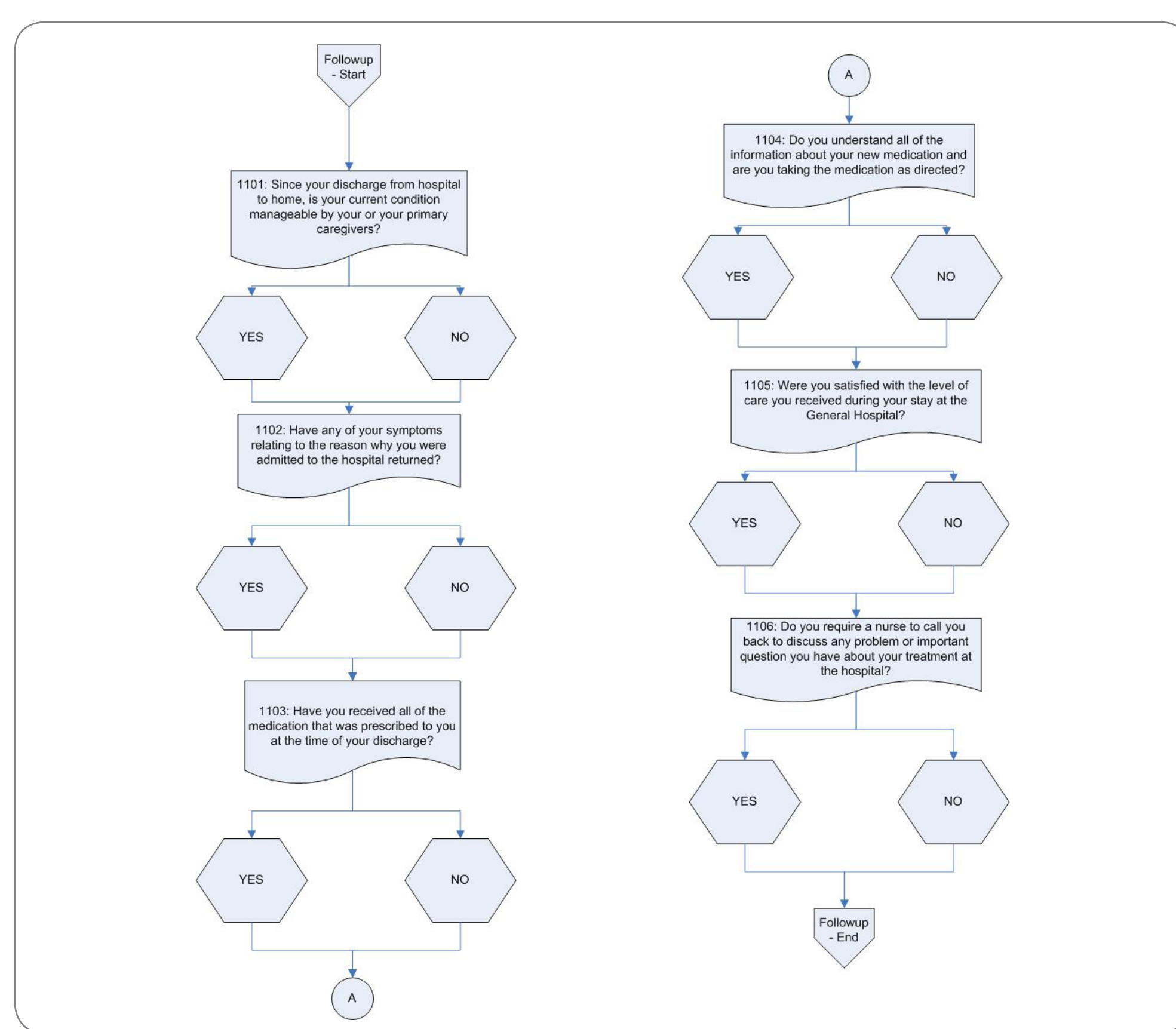
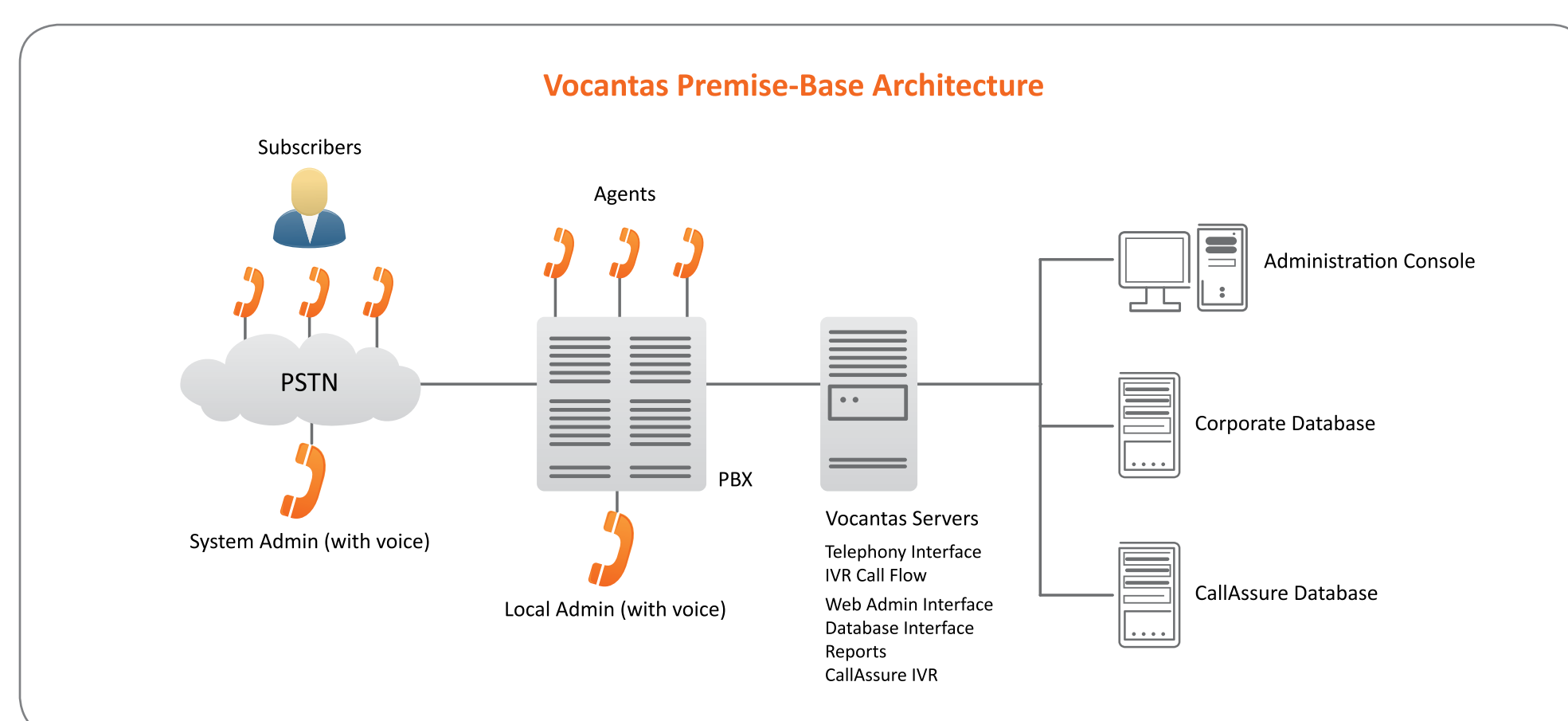
Patient communication for appointment reminders, missed appointments and lab results were consuming clinic staff with routine, repeatable tasks leaving little time for direct patient care.

Interaction with patients to improve the overall quality of the patient experience is a key issue that hospitals and clinics are facing today. With the aging population and weak economy, the medical system continues to look for ways to streamline processes and stay within decreasing budgets while maintaining a standard of excellence in patient care and continuously striving to improve patient outcomes.

## THE SOLUTION:

Vocantas has worked closely with the medical community to develop a solution that answers their specific needs. Interactive Voice Response (IVR) offers clinics and hospitals an automated solution to connect with their patients in a personalized way. The system acts as an extension of the hospital or clinic's database and makes outbound phone calls to patients with information specific to their individual care plan, compliance reminders and surveys, and ongoing monitoring of patient conditions for prevention of adverse effects.

Patients report an increase in overall satisfaction with their medical care experience when contacted by the IVR post-discharge from a medical facility, and chronic care patients report that the convenience of appointment and compliance reminders, follow up, monitoring, as well as provision of information via telephone through the IVR is a lifeline that they depend on.




## THE RESULTS:

Recently a case study was published showcasing the following positive results that the Ottawa Hospital (specifically with the Regional Thrombosis Unit) reported following the implementation of the IVR solution to interact with clinic patients, including:

- Improved patient care
- Simplified overall processes within individual Thrombosis clinics
- Improved efficiencies in clinics
- Reduced workload for existing staff
- Overall reduced the cost of delivering service to 13,000 thrombosis patients across the region.

Vocantas Customer Case Study  
TOH Regional Thrombosis Unit



The Regional Thrombosis Unit at The Ottawa Hospital (TOH) has successfully deployed an Interactive Voice Response (IVR) solution by Vocantas. The TOH Regional Thrombosis Unit served over 13,000 patients across the Ottawa region in 2009/10.

Thrombosis is the overall medical term for the formation of blood clots inside a blood vessel, which obstructs the flow of blood through the circulatory system. Two common diagnoses given in thrombosis patients - Deep Vein Thrombosis and Pulmonary Embolism - represent the third leading cause of cardiovascular mortality in Canada.

Treatment for Thrombosis patients includes routine, frequent blood tests at a local laboratory of the patient's choice. This allows clinic staff to monitor and appropriately adjust the patient's medication to ensure the patient's condition remains under control.

**Customer ISSUE:**

The Thrombosis Unit at TOH employs more than 25 staff members including research staff. The Unit is responsible for diagnosing and treating all thrombosis related conditions. Patients are seen at outpatient clinics at the Civic and General campuses of the Ottawa Hospital with satellite clinics in many of the major regional hospitals.

TOH Regional Thrombosis Unit has significantly reduced the number of patients admitted to hospital for Thrombosis related issues by using cutting edge clinical models and using e-health to manage large numbers of anticoagulation patients.

The Thrombosis Unit holds a database and software application that calculates dosing information for hundreds of patients taking blood thinning medication (Warfarin). All patients of the unit were previously notified via mail or via telephone of their updated medication dosing and appointment time for their next visit to the clinic. From a human resource standpoint this required a full time staff member in each clinic to carry this workload with a significant cost associated with this role. From a patient perspective this manual intervention created a relatively unreliable method of receiving dosing instructions.

**Vocantas SOLUTION:**

The Vocantas IVR dials approximately 50 patients a day from the database of more than 15000+ patients. It was vital to the TOH that the new Vocantas IVR system work seamlessly with the existing DAWN software application used by the Thrombosis Unit. The Unit's goal was to have no human interaction between the patients INR/blood test through to the dosing telephone call, unless results were outside the clinical limits. The Vocantas IVR solution has enabled the TOH Thrombosis Unit to reach that goal.

The IVR solution has simplified the Unit's overall processes, improved efficiencies within the individual clinics, improved overall patient care, reduced workload for existing staff and overall reduced the cost of delivering service to patients.

**Management REPORTS:**

The Regional Thrombosis Program Manager reports that "the whole process now requires less supervision with the Vocantas IVR solution in place. More importantly, it enables us to dose a greater number of patients without significantly expanding our staffing. As we are currently expanding our models of care across the region the Vocantas IVR solution is going to continue to help us in the future."

**Users REPORT:**

Users report that the system works well, without much interference, and requires virtually no maintenance on the part of clinic staff. The added accuracy of dosing and appointment scheduling benefits end user patients and improves the overall level of patient care.

## THE CONCLUSION:

The implementation of the Vocantas IVR solution continues to be a resounding success for patients living with Chronic Disease. Where patient compliance, monitoring, and ongoing management of patient care are critical - interactive voice response (IVR) has been a huge success for clinics in improving patient care and streamlining routine tasks when managing thousands of chronic care patients.

## THE RESEARCH:

Vocantas worked very closely with Dr. Forster and his team on the research he performed for Chronic Disease Management and IVR which again demonstrates the improvement in overall patient care with the use of interactive voice response for communication with patients.

Journal of Evaluation in Clinical Practice ISSN 1366-1254

### Using an interactive voice response system to improve patient safety following hospital discharge

Alan J. Forster MD FRCPC MSc<sup>1,2</sup> and Carl van Walraven MD FRCPC MSc<sup>2,3,4</sup>

<sup>1</sup>Assistant Professor, <sup>2</sup>Associate Professor, Department of Medicine, University of Ottawa, Ottawa, ON, Canada  
<sup>3</sup>Scientist Ottawa Health Research Institute - Clinical Epidemiology Program, Ottawa, ON, Canada  
<sup>4</sup>Scientist, Institute for Clinical Evaluation Sciences, Toronto, ON, Canada

**Keywords:** interactive voice response systems, medical informatics, patient safety, transition care

**Abstract:** Patients often experience complications when transitioning from hospital to home. These complications are frequently related to poor monitoring. An interactive voice response system (IVRS) could improve post-discharge monitoring. **Objective:** To determine the feasibility and effectiveness of an IVRS to monitor patients following hospital discharge.

**Introduction:** Patient care following discharge from hospital is problematic [1,2]. A common factor predisposing patients to post-discharge complications is a failure to monitor their conditions and treatments [1]. One method used to improve monitoring includes a hospital-based nurse or pharmacist systematically telephoning all patients to enquire about their status after they get home [3-5]. Dallas et al. suggest that a call to patients from a pharmacist within a week of discharge significantly reduces return visits to the emergency department [6]. Although a call-back programme seems promising, it is not perfect. First, it is costly to use highly skilled professionals to call patients, especially when such professionals are already in short supply. Furthermore, most factors make a call-back programme an inefficient use of their time. Patients will frequently not be at home when called and several attempts must be made to reach them [4-6]. Patients will occasionally wish to discuss matters that are not directly related to their health care. Most of the time patients will not be experiencing problems at the time of call [4]. If a call-back programme is to be implemented, a more efficient system would be beneficial.

**Conclusion:** Although a call-back programme seems promising, it is not perfect. First, it is costly to use highly skilled professionals to call patients, especially when such professionals are already in short supply. Furthermore, most factors make a call-back programme an inefficient use of their time. Patients will frequently not be at home when called and several attempts must be made to reach them [4-6]. Patients will occasionally wish to discuss matters that are not directly related to their health care. Most of the time patients will not be experiencing problems at the time of call [4]. If a call-back programme is to be implemented, a more efficient system would be beneficial.

See below for full article.

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## OPINION:

With the many issues facing healthcare today, there is a huge role for continued cooperation between business and healthcare to use technology to deliver the right solutions at the right time. Automating patient outreach using interactive voice response (IVR), offers healthcare organizations many advantages. Particularly for managing ongoing patient care with chronic disease patients the role of technology is increasing as we face the looming health crisis of the aging baby boomer generation with many more patients requiring ongoing care and fewer health professionals to deliver the care required.

## QUESTIONS ADDRESSED:

- How is technology making a real difference - today - in leading hospitals and clinics?
- What bottom line can the clinic expect as a result of the IVR implementation?
- What human behaviours are predictable with respect to interaction with an IVR system?
- How can IVR improve patient flow in a hospital?
- How did the Ottawa Hospital Thrombosis Clinic expand its services to hundreds of patients at no additional human resource cost through the implementation of the IVR solution?
- How has Brigham and Women's hospital in Boston used an IVR to close the patient follow-up loop and provide real-time reporting of patient outcomes?
- How can IVR prevent adverse patient events caused by dosing errors?
- How does the IVR reduce the risk associated with human intervention in dosing chronic patients?
- How can clinics reduce wait times and eliminate expense associated with late and no-show patients?



Gary Hannah  
President and CEO, Vocantas Inc.

Under Gary Hannah's leadership, Vocantas has matured from a concept to a profitable Interactive Voice Response organization. Active in the field of computers and service for more than 27 years, Hannah has specialized in high technology, telecommunications, financial and manufacturing business solutions. His successes range from establishing unique marketing and distribution strategies to resolving a number of strategic planning issues, coupled with extensive channel experience.

Prior to founding Vocantas, Hannah was President and CEO of Internet start-up ThinWEB Technologies. In this role, Hannah laid the framework in sales and marketing to enable ThinWEB to pursue

an IPO in the U.S. He was also a member of the board for ThinWEB and NoTime Wireless. Before joining ThinWEB, Hannah was vice president at JetForm Corporation (now Adobe) in marketing, sales and services, where he was responsible for the Global Partner Program that included OEMs, VARs and distributors worldwide, client relations and channel sales.

Prior to ThinWeb, Hannah was president and founder of Alliance Network Inc., a North American computer services and distribution company. Prior to Alliance Network, Hannah was Director and General Manager of Crowntek Business Centers (CBCI), where he was part of the executive management team.

In addition to many years of general management experience, Hannah has been the lead executive on two mergers, JetForm-Delrina and GE Capital-CBCL. A recipient of the Ottawa Business Journals' 2002 Forty under 40, Hannah is past vice president of the environment for the Lac Sinclair Lake Association.

Hannah is the past chairman of Ottawa Center for Research and Innovation (OCRI) and past chair of Ottawa Global Marketing (OGM).

