



# Remote Patient Monitoring



[www.medvox.net](http://www.medvox.net)

# INTRODUCTION



- This document contains information about **MedVox**, ADELACU clinical monitoring tool.
- **MedVox** is a new service, based in 3 products of ADELACU: CONFIRM, Voice Form and Direct Call. To which were added a management software with a graphic interface for user interaction, dashboard and integration facilities to other computer platforms.
- The information contained in this document is referential and may change without previous notice.
- Information about ADELACU can be found in [www.adelacu.com](http://www.adelacu.com) and [www.medvox.net](http://www.medvox.net).

# BACKGROUND



- The digital transformation is present in all industries and the health sector is not unaware of this trend.
- The digitalization of operations provides a great opportunity to increase care coverage and improve medical care.
- According to NCBI (National Center for Biotechnology Information), approximately half of the hospitals in the United States use telemedicine. <https://www.ncbi.nlm.nih.gov/books/NBK459384>.
- Extra hospital care is a new area that requires technology to optimize its processes and to have evaluation and control mechanisms.
- For cases of pandemics, such as Covid-19, many people require quarantine and/or palliative treatment in places other than hospitals, but require permanent medical supervision and control.

# HEALTH SECTOR



- Due to the costs and difficulties of transportation and especially because of the risks of infection and contagion, many non-critical patients are now cared at home under the supervision of specialized medical personnel.
- The monitoring of the condition of these patients is mainly done by telephone and is limited by the staff's ability to make the calls and collect the information.
- The results are not always updated instantly, which delays analysis and decision making.
- Many hospitals and care centers have computer systems, but they are not always integrated, which makes it difficult to manage all the information received.

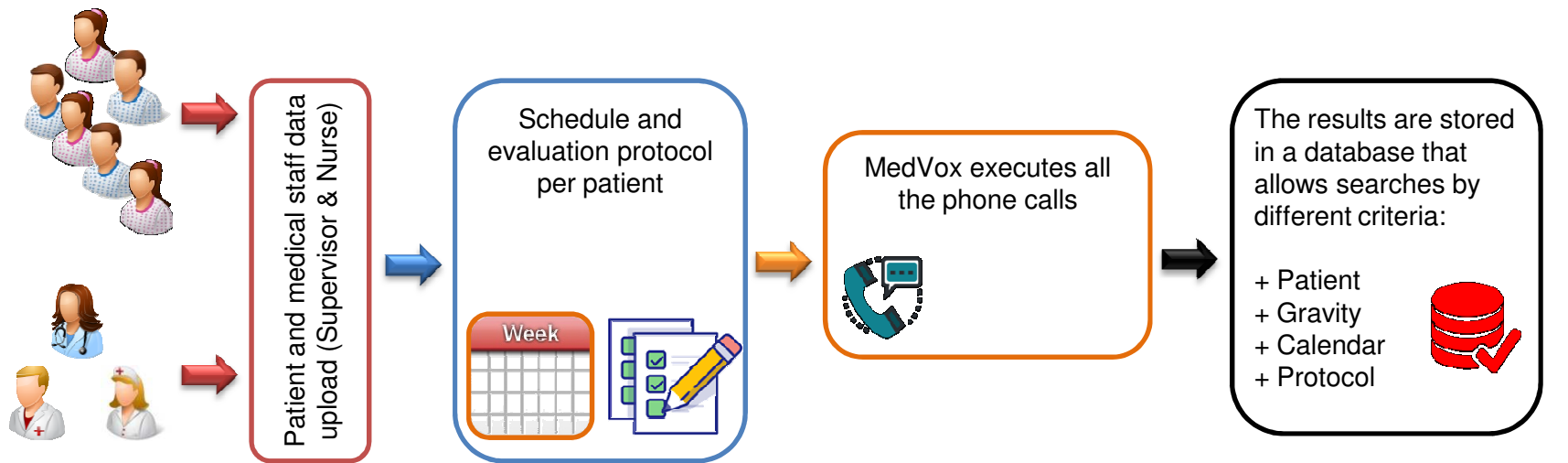
# WHAT MEDVOX DOES



## Helps medical personnel to monitor patients remotely

- By using a pre-configuration associated with each patient's condition, a control calendar is established.
- For each control, an automatic telephone call is made, where the patient or another person accompanying him answers a brief voice survey, without the need to press keys or have an application previously installed. The patient can use any type of telephone.
- All control answers are converted to text and instantly and automatically updated in a database.
- Because of that, metrics, statistics and alerts can be made, in addition to being able to integrate it into other medical management systems that the hospital has.

# OPERATIONAL FLOW



## Data input:

- Webservice (automatic)
- CSV file (manually)
- Web page (manually)

## Operation settings:

- Monitoring start and ending date.
- Schedule of days and times to call.
- Setting of survey to be performed at each control.
- Thresholds per answer to generate alerts.

## Full automatic operation:

- The request is generated and the call is made automatically.
- Unsuccessful calls are retried: phone busy, no response, no survey answer.

## Web-based operation:

- Database storage.
- Dashboard with the results of the controls performed.
- Alerts by email and an automatic phone call.

# PACIENT INFORMATION



- The information of the patients to be called doesn't belong to MedVox nor do have the rights of the generated data. All information is the property of the patient and/or the hospital.
- The information needed for each patient is as follows:
  - Patient's name, to make the personalized phone call.
  - Telephone number of the patient, to be able to call him/her (landline or mobile).
  - Identity card, to identify him/her internally.
  - Type of monitoring, to establish the questions and schedule.
- This information is temporarily uploaded to MedVox to make the monitoring phone call and once completed, the answers are stored in a database.
- Patient data can be obtained from an internal health center management system or entered manually into *MedVox*.

# MONITOR SETTINGS



- Multiple monitoring protocols can be defined, both in the schedule and in the survey to be performed.



- For each procedure, one or more calls can be made daily at different times and on different days.



- Multiple surveys can be defined, each one with a maximum of 16 questions and several pre-set answers.



- For each type of answer, conditions are defined to generate alerts for medical staff.

- A number of retry calls can be defined when no answer is obtained from the patient.



- All the configuration of the schedules and surveys are defined before the operation is performed and can be modified as needed.



# PATIENT MONITORING



- Monitoring is done with an automatic phone call, where the patient or another person who accompanies him responds using his voice. There is no need to install or configure anything else previously. Any type of phone, either landline or mobile, can be used.
- The first question lets you know if the survey is being answered by the patient himself or by another person.
- The survey is based on multiple choice questions and answers, where the patient must respond with his/her voice.
- Voice recognition technology is used. If the answer is not identified, the question is repeated up to a maximum of 3 times, which can be configured.
- An example of monitoring (in spanish) can be heard on the MedVox website:  
<http://www.medvox.net/ejemplo.html>

## LOS RESULTADOS SE ALMACENAN EN UNA BASE DE DATOS

QUE PERMITE BÚSQUEDA POR  
DIFERENTES CRITERIOS



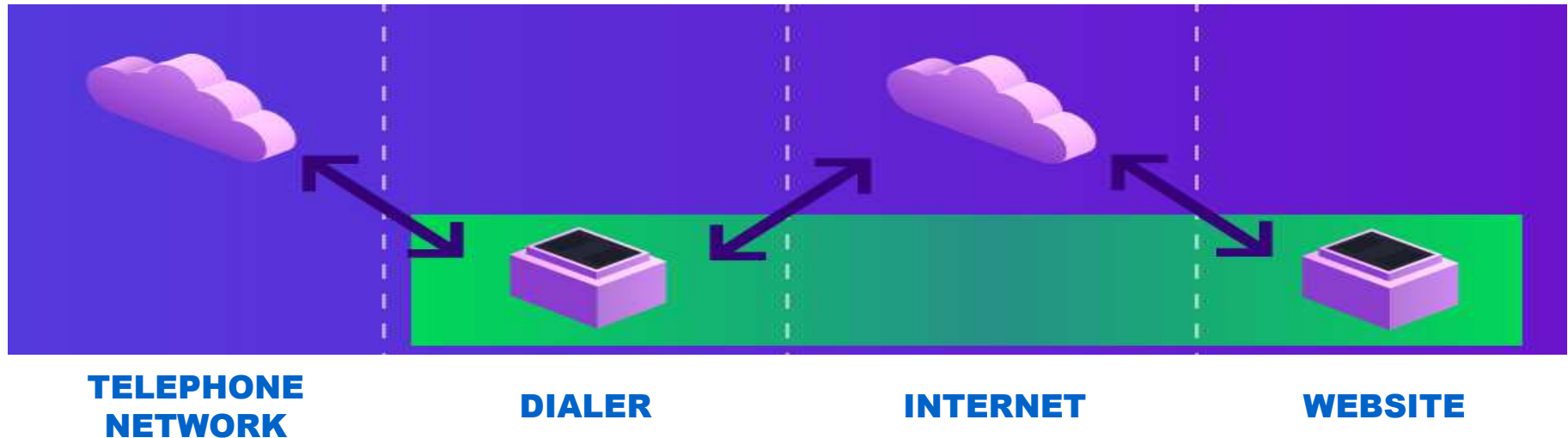
- All the management of **MedVox** is done from a website, where the medical staff access with a user name and a password.
- Within the work environment there is a summary table where the list of patients by type of illness and health status is indicated.
- If it is detected that a patient has exceeded the previously defined thresholds, it is displayed on the screen and an alert is generated by e-mail and a phone call to the medical supervisor.
- Selecting and/or searching for a patient gives access to all the monitoring history that has been done, with the questions, answers and audio of the phone call.
- If the medical staff needs to talk to the patient, they can call him/her by pressing a button on the **MedVox** console.

# BENEFITS OF MEDVOX



- It facilitates the work of the medical staff and increases the monitoring coverage of patients in treatment outside the hospital premises.
- All the controls are carried out in the same way, which allows for a single evaluation criterion.
- The medical staff has control of the monitoring at all times, being able to review the details of the answers and generate phone calls directly to the patient.
- It generates information in real time, which allows for quick decisions.
- It can be easily integrated to other health systems available at the hospital, both to make consultations and to feed other systems.

# LAYOUT



- *MedVox* has a flexible layout that allows to operate in the cloud, on premises or mixed.
- The dialer (telephone module) does not store patient information and uses the data only for monitoring purposes. It must have access to the Internet and the public telephone network to make telephone calls.
- The website (management module), with the monitoring data, can be stored both in the cloud or in the hospital's datacenter, according to how it is requested. In both cases, all the security procedures required are applied.

# COSTING STRUCTURE



- **MedVox** is a service, all equipment, hardware, software and licenses, is the property of ADELACU, who assumes full responsibility for the operation and operational continuity.
- Cost structure
  - Starting value that includes installation, configuration and training.
  - Monthly fee, with zero minimum contract term and no tie-up.
  - The values depend on the dimensioning required, both in terms of telephone calls and users.
- Full service, which includes the following :
  - Support
  - Training
  - Software Updates
  - Maintenance
  - Operation supervision and monitoring

# MEDVOX LOGIN



The screenshot shows a web browser window with the URL "medvox.net". The page header includes the "ADELACU" logo and a "medVox" logo with a "INICIA SESIÓN" link. A navigation menu contains links for "Inicio", "MedVox", "Operación", "Confidencialidad", "Parámetros", "Ejemplo", "Monitoreo", and "Arquitectura", along with buttons for "Descargar presentación" and "Contacto". The main content area features a large blue banner with the text "MONITOREA TUS PACIENTES EN FORMA REMOTA" overlaid on an image of a person's hands. On the right side of the banner is a white login form titled "Inicia Sesión" with input fields for "Usuario" and "Contraseña", and a green "Entrar" button.

# PATIENT LIST



MedVox ADELACU

No es seguro | medvox.net:8080/MedVox/?Service=PACIENTES&Step=000

ADELACU Hospital ADELACU ENFERMERO ADELACU CERRAR SESIÓN medVox

Pacientes

Nombre Cédula de Identidad Teléfono Estado

FILTROS AVANZADOS BUSCAR

Paciente	Nombre	Último Control	Estado de Salud	Acciones
05.892.143-2	Alejandro Mahns	10-08-2020 17:00:02	67 (100%)	
06.155.617-6	Andrés de la Cuadra	10-08-2020 19:00:01	0 (0%)	
15.640.986-3	Carlos Correa	06-08-2020 17:00:02	100 (86%)	
07.213.064-2	Gonzalo Gallo	10-08-2020 17:00:02	0 (0%)	

# LAST 10 CONTROLS



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Pacientes

Alejandro Mahns	Rank	Health	Alertas	Audio	Obs
10-08-2020 17:00:02	38	67 (100 %)		▶ 0:00 / 2:15	Agregar comentario
10-08-2020 12:00:02	0	0 (0 %)			Agregar comentario
07-08-2020 17:00:01	7	94 (100 %)		▶ 0:00 / 2:30	Agregar comentario
07-08-2020 12:00:02	0	100 (100 %)		▶ 0:00 / 2:08	Agregar comentario
06-08-2020 17:00:02	0	0 (0 %)			Sin respuesta



# CONTROL DETAILS



**DETALLE CONTROL** 0:00 / 2:15

Introducción	Respuesta
Buenas tardes, hola Alejandro Mahns. Le llamo del hospital para controlar su estado de salud. Para responder debe esperar el tono y decir, soy yo, o decir, otra persona.	soy yo
Pregunta	Respuesta
Diga si ha tenido ahogo entre ayer y hoy. Espere el tono y responda, tengo ahogo, o nada.	tengo ahogo
Diga si ha tenido, o tiene fiebre con temperatura mayor a 38 grados. Responda, he tenido, o nada.	he tenido
Diga si ha tenido tos seca entre ayer y hoy, o aumentado su intensidad. Espere el tono y responda, he tenido, o nada.	he tenido
Diga si ha tenido dolor de cabeza entre ayer y hoy. Responda, he tenido, o nada.	he tenido
Diga si tiene o ha tenido diarrea, entre ayer y hoy. Espere el tono y responda, he tenido, o nada.	he tenido

**Pacientes**

**Alejandro Mahns**

10-08-2020 17:00

10-08-2020 12:00

07-08-2020 17:00

07-08-2020 12:00

06-08-2020 17:00

Obs

Agregar comentario

Agregar comentario

Agregar comentario

Agregar comentario

Sin respuesta

# NOTIFICATIONS



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Aplicaciones WhatsApp Web ADELACU TeleVox BioBioChile | La Red... Cambridge Free En... Real Academia Esp... Facebook Support Audio Codes Webmail

## NOTIFICACIONES

Destino	Mensaje	Confirmación
10-08-2020 17:03:10 976080532	Buenas tardes, hola Enfermero Andrés de la Cuadra. Le llamo de Hospital ADELACU para informarle de una alerta de salud del paciente Alejandro Mahns. Para responder debe esperar el tono y decir, mensaje recibido	10-08-2020 17:04:02 <b>mensaje recibido</b> ▶ 0:00 / 0:25
10-08-2020 17:03:10 993230643	Buenas tardes, hola Enfermero Gonzalo Gallo. Le llamo de Hospital ADELACU para informarle de una alerta de salud del paciente Alejandro Mahns. Para responder debe esperar el tono y decir, mensaje recibido	10-08-2020 17:04:03 ▶ 0:00 / 1:26
10-08-2020 17:03:10 946885217	Buenas tardes, hola Enfermero Marcos Monsalve. Le llamo de Hospital ADELACU para informarle de una alerta de salud del paciente Alejandro Mahns. Para responder debe esperar el tono y decir, mensaje recibido	10-08-2020 17:04:01 <b>C_ASR_WREC</b> ▶ 0:00 / 1:04
		10-08-2020 17:04:47

# SUPERVISOR PANEL



The screenshot shows a web browser window with the URL `medvox.net:8080/MedVox/?Service=MANTENEDOR_USUARIOS&Step=000`. The page header includes the ADELACU logo, the text "Hospital ADELACU SUPERVISOR DE OPERACIONES", and a "CERRAR SESIÓN" button. Below the header, there are two tabs: "Pacientes" and "Usuarios", with "Usuarios" being the active tab. The main content area displays a table with the following data:

Centro de Salud	Tipo Usuario	Usuario	Fono	Action
Sociedad Comercial ADELACU Ltda.	nurse	<a href="#">Enfermero Andrés de la Cuadra</a>	976080532	
Sociedad Comercial ADELACU Ltda.	nurse	<a href="#">Enfermero Gonzalo Gallo</a>	993230643	
Sociedad Comercial ADELACU Ltda.	nurse	<a href="#">Enfermero Marcos Monsalve</a>	946885217	
Sociedad Comercial ADELACU Ltda.	nurse	<a href="#">Enfermero ADELACU</a>	222184749	
Sociedad Comercial ADELACU Ltda.	nurse	<a href="#">Enfermero Carlos Correa</a>	957852335	
Sociedad Comercial ADELACU Ltda.	nurse	<a href="#">Enfermero Alejandro Mahns</a>	222159524	

# USUR INFORMATION



MedVox ADELACU

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APLICACIONES WhatsApp Web ADELACU TeleVox BioBioChile | La Red... Cambridge Free En... Real Academia Esp... Facebook Support Audio Codes Webmail

**ADELACU** Hospital ADELACU ADMINISTRADOR DE SISTEMA CERRAR SESIÓN medVox

### DATOS DE USUARIO

andres Enfermero Andrés de la Cuadra andres@adelacu.com

976080532 Sociedad Comercial ADELACU Ltda. Enfermera/o Activo

Prueba MODIFICAR PASSWORD

GUARDAR

Sociedad Comercial ADELACU Ltda.	nurse	Enfermero Marcos Monsalve	946885217		
Sociedad Comercial ADELACU Ltda.	nurse	Enfermero ADELACU	222184749		

# PATIENT INFORMATION



MedVox ADELACU

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Hospital ADELACU ADMINISTRADOR DE SISTEMA CERRAR SESIÓN medVox

### DATOS DE PACIENTE

06.155.617-6 Andrés de la Cuadra 976080532 Sociedad Comercial ADELACU Ltda.

Prueba ADELACU 01-06-2020 31-12-2020 Paciente activo

http://10.0.40.10:9090/adelacu/rest/TAdelacuDemo/EchoTest

GUARDAR

11.347.764-4 Catalina Díaz 10-08-2020 17:00:02 0 (0%)



**THANKS!**

**Sociedad Comercial ADELACU Ltda.  
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www.medvox.net**