# REQUEST FOR PROPOSALS (RFP) FOR THE INSTALLATION OF OXYGEN INTAKES AND DUCTS IN THE HOSPITALES VICENTE CORRAL MOSCOSO DE CUENCA, LEÓN BECERRA DE MILAGRO, ENRIQUE GARCÉS DE QUITO AND GENERAL RIOBAMBA DE RIOBAMBA

**Summary of terms**

| | |
|---|---|
| Release of Request for Proposals | **January 10, 2021** |
| Proposal expiration / last proposal submission date | **January 21, 2022**<br><br>**5pm EST** |

Clinton Health Access Initiative (CHAI) invites interested and capable organizations to present proposals to design and install oxygen intakes and ducts in the Vicente Corral Moscoso (Cuenca), León Becerra (Milagro), Enrique Garcés (Quito) and General Riobamba (Riobamba) in Ecuador.

If you decide to submit your quote in response to this Request for Proposals (RFP), please send completed submission in electronically to Rodrigo Valencia, COVID-19 Associate, South America, at rvalencia.ic@clintonhealthaccess.org before 5pm (EST) on January 21, 2022.

Questions regarding this RFP should be addressed to Rodrigo Valencia to the email mentioned above.

# BACKGROUND

## A. CLINTON HEALTH ACCESS INITIATIVE (CHAI)

Clinton Health Access Initiative, Inc. (CHAI) is a global health organization committed to saving lives and reducing the burden of disease in low- and middle-income countries, while strengthening the capacities of governments and the private sector in those countries. to create and maintain high-quality health systems that can succeed without our help. For more information visit:www.clintonhealthaccess.org

## B. THE PROGRAM: OXYGEN TECHNICAL ASSISTANCE

The first case of SARS-CoV-2 was registered in Latin America on February 26, 2020, when Brazil confirmed the presence of the virus in Sao Paulo, and since then, more than 46 million cases have been registered in the region. According to statistics from the World Health Organization (WHO), in 2020, Latin America and the Caribbean was the region with the highest number of confirmed cases worldwide, representing a quarter of all cases worldwide.

Latin America continues to bear one of the highest burdens of COVID-19 in the world and its health systems are among the hardest hit by the pandemic. Despite initial progress in preparing for an emergency response, many countries in the region continue to experience difficulties in providing quality and timely care to patients. Documented gaps have included limited testing capacity, difficulty in connecting the patient care pathway with a single information system, limited ability to implement oxygen therapy, medication shortages, ICU saturation, and delays in the implementation of a vaccination strategy or limited access to vaccines.

Since July 2021, CHAI began supporting Ecuador and Guatemala with a new program focused on strengthening the technical oxygen capacity of those two countries. Under the new Oxygen Technical Assistance Program, funded by UNITAID, CHAI is working with the Ministries of Health in prioritizing five to six hospitals, in different departments of the aforementioned countries, where COVID-19 cases are higher, as well as the gaps to provide adequate therapy to patients. Program interventions will include: a) improvement of hospital infrastructure, b) training in clinical aspects of oxygen therapy and also in O2 prognosis and related products, c) development of preventive and corrective maintenance programs for each of the hospitals prioritized,

## C. TECHNICAL ASSISTANCE IN HOPITALS VICENTE CORRAL MOSCOSO (CUENCA), LEÓN BECERRA (MILAGRO), ENRIQUE GARCÉS (QUITO) AND GENERAL RIOBAMBA (RIOBAMBA).

In the continuing need to improve critical care and improve hospital capacities for the adequate care of patients affected by COVID-19, timely access to oxygen can be decisive for the proper development of a patient. Oxygen is part of the list of essential medicines of the World Health Organization (WHO) and, however, its access and distribution is not adequate, mainly in developing countries. The reasons for poor access to oxygen are often cost and lack of adequate infrastructure.

Ecuador's public hospitals have three main models of medical oxygen supply in common use: concentrators, cylinders and cryogenic liquid oxygen tank, the latter being the main supply for secondary, tertiary and specialized hospitals. For the distribution and supply of medical oxygen from the liquid oxygen tank, hospitals have the infrastructure of pipes and oxygen outlets.

The oxygen bed infrastructure in hospitals has been increased to cope with the increased demand from coronavirus patients requiring medical oxygen support. However, not all healthcare areas are oxygen supported, limiting the care the Hospital can provide to patients for oxygen therapy, for patients with COVID-19 and other illnesses.

CHAI's Oxygen Technical Assistance in Ecuador has the scope of evaluating priority facilities to determine where new equipment and services will be placed. Assessments may include assessment of current infrastructure, types of care provided, and staff capacity. Longer-term considerations for oxygen availability, such as network design or optimization for oxygen generation and delivery, can be incorporated at this stage.

As a result of the above, the need has been detected to support the Vicente Corral Moscoso de Cuenca, León Becerra de Milagro, Enrique Garcés de Quito and General Riobamba de Riobamba Hospitals, improving the infrastructure for the distribution of oxygen to patients.

The oxygen outlet facilities will allow hospitals to expand their capacity to care for patients, especially those suffering from COVID-19 and / or respiratory diseases, which in turn means an improvement in the quality of care for the population. Hospitals have an average of 25% oxygen outputs per bed, so the support intervention of the CHAI will allow the capacity of the 4 hospitals to be expanded by 25% compared to their current situation, managing to cover 50% of the services hospitals with oxygen intakes.

This Request for Proposal (RFP) is to request competitive bids for the installation of oxygen intakes and ducts in the hospitals mentioned in the previous paragraph.

## SCOPE OF WORK

The purpose of this Request for Proposals (RFP) is to request competitive bids for the design and installation of oxygen wall outlets and pipelines for the Vicente Corral Moscoso (Cuenca), León Becerra (Milagro), Enrique Garcés (Quito) and General Riobamba (Riobamba) hospitals in Ecuador.

## A. TECHNICAL INFORMATION

Only complete bids with t the following documentation will be considered:

- Design Drawings (DWG) for each facility / room where wall outlets are being added.
- List of Quantity (BOQ) for the works described in the DWGs (detailed list of pipe components to be installed for each installation)
- Documentation of staff training / qualifications, which may include:
    - Personnel certifications
    - CV of the Chief Systems Design Engineer
    - Documentation that summarizes the training program that the supplier requires from all engineers involved in the installation and design of the medical gas system.
- QMS for the company carrying out the design and installation (either ISO 9001 or ISO 13485 with a clearly defined scope) and detailed relevant work history
- SRA (eg FDA or CE Mark) and ISO 13485 approval test for flowmeters, humidifiers, and terminal units
- Declaration of compliance with the following standards (or equivalents):
    - ISO 7396-1
    - ISO 9170 1: 2008
    - ASTM-B819 / BS EN 13348
    - EN 1254-1
    - EN 1254-4

The following are the technical specifications that the supplier must meet and provide associated documentation for the Installation, materials and devices:

**A. Technical Requirements for Piping and Wall Systems, Flowmeters, and Medical Oxygen Humidifiers**

| **Technical Requirements for Piping and Wall Systems** | |
|---|---|
| **Component** | **Specification** |
| | **Cuenca, (Vicente Corral Moscoso) Riobamba (General Riobamba), Quito (Enrique Garcés), Milagro (León Becerra)** |
| Arrangement of wall systems coverage: | Additional Terminal Unit Departments / Rooms: Maternity, Gynecology, Neonatal Surgery, Pediatric, Pediatric<br><br>Enrique Garcés: 30 embedded wall systems (15 dual outlets and 15 single outlets) |

| Technical Requirements for Piping and Wall Systems | |
|---|---|
| **Component** | **Specification** |
| | **Cuenca, (Vicente Corral Moscoso) Riobamba (General Riobamba), Quito (Enrique Garcés), Milagro (León Becerra)** |
| | Vicente Corral Moscoso30 recessed wall systems (15 dual outlets and 15 single outlets)<br>General Riobamba: 30 embedded wall systems (15 dual outlets and 15 single outlets)<br>León Becerra: 30 embedded wall systems (15 dual outlets and 15 single outlets)<br><br>**The number of terminal to be added per ward will be defined with each hospital at the time of the visit for the quote. The bidder must perform technical visits of the 4 facilities to inform the development of the technical documentation required for the RFP.** |
| Design criteria | The additional terminal units will not affect the existing pipeline network.<br>Connection to existing pipeline and VIE system |
| Pipe layout | Pipes will be concealed in ceiling holes whenever possible and installed in gutters where exposed. |
| Terminal units | Terminal wall unit connection compatible with existing installation or wall unit type (either Chemetron or Ohmeda Connection Type depending on Hospital Requirement)<br>US Color Standard (Green, labeled "Oxygen") |
| Network security | If there is a new area being serviced, make sure these areas are covered by local and master alarms. |
| Flow meters and Humidifiers | See flowmeter and humidifier specifications. |
| Power supply requirements | 110 V / 60 Hz for alarm panels |
| Warranty | All components of the medical oxygen pipeline network will have a warranty period of 5 years after commissioning, according to their useful life.<br>The supplier must guarantee the availability of the spare part for at least 8 years. |
| Testing and commissioning | On-site - Inspection, testing and commissioning must be done prior to delivery.<br>Provision of:<br>▪ System drawings as built<br>▪ Commissioning report and certificate |
| Regulations and standards: | Standards: the following certificates issued by a certified third party for system components (or equivalents):<br>General (vendor): |

| Technical Requirements for Piping and Wall Systems | |
|---|---|
| **Component** | **Specification** |
| | **Cuenca, (Vicente Corral Moscoso) Riobamba (General Riobamba), Quito (Enrique Garcés), Milagro (León Becerra)** |
| | • Certified quality management systems (ISO 13485, ISO 9001), where the scope of the current registration for pipeline networks is defined<br>Component specific:<br>• ISO 7396-1: Medical gas piping systems. Part 1: Piping systems for compressed medical gases and vacuum.<br>• NFPA 99: National Fire Protection Association (USA): Health Care Facility Code Manual<br>• ISO 9170-1: 2008, Terminal units for medical gas piping systems - Part 1: Terminal units for use with compressed medical gases and vacuum.<br>• ASTM-B819 / BS EN 13348: Standard Specification for Seamless Copper Tubing for Medical Gas Systems<br>• EN 1254-1: Copper and copper alloys - Plumbing fittings - Fittings with ends for capillary brazing or capillary brazing to copper pipes<br>• EN 1254-4: Copper and copper alloys - Plumbing fittings - Fittings that combine other end connections with capillary or compression ends |

## Flowmeters

| Product | Category | Specifications |
|---|---|---|
| Flowmeter, Thorpe tube, pressure compensated | Description | A device for measuring and regulating the flow of a medical gas [p. Eg, oxygen (O2), carbon dioxide (CO2), nitrous oxide (N2O), helium / oxygen gas mixture (heliox), medical air] during various procedures (eg, therapeutic administration, anesthesia, insufflation during Surgery). It consists of a vertical tube containing a float, which rises and falls in relation to the gas flow, and a distal valve (compensated flow meter) to control the gas flow. It will be calibrated for a specific medical gas and will have a specific flow range; therefore, some types may be dedicated to a specific patient group (eg, newborns, infants, adults) or clinical use. (SOURCE: GMDN)<br><br>The oxygen breathing flow meters are designed for use with a variety of oxygen supply systems, such as central piping systems, cylinder valves, or concentrators, and are connected to various modes of administration or interfaces, such as a circuit of the patient or a medical device that uses or delivers gas, including nasal cannulas or various types of mask-patient interfaces. |
| | Technical | Device suitable for use with medical oxygen. |
| | | Type of Thorpe tube flow meter, contains inlet and outlet port, a flow regulator, a valve and a transparent measuring tube |
| | | Flowmeters to measure and regulate flow from a regulated and reduced pressure oxygen source to the patient or other medical device |

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| | | Pressure compensated flowmeters, calibrated to 345–380 kPa (3.4–3.8 bar, 50–55 psi) inlet gauge pressure. |
| | | Maximum gauge inlet pressure 690 kPa (6.9 bar, 100 psi). |
| | | Flow adjustment knobs to have a rough surface to prevent slipping. |
| | | Flow meters calibrated for the following flow range, all metric (indicated in the annex table): 0-15 L / min, 10% accuracy, double taper graduations 0.5 L / min (range 0-5 L / min) and 1 L / min (5 L / min - maximum range) |
| | | |
| | | All minimum flow rates should be zero when fully closed |
| | | All graduations must be clearly visible at 270 degrees (the greatest breadth for the provider's views) |
| | | **Inlet and outlet ports must be clearly specified** and will be determined in part by use case (suitable for connection to a centralized system, cylinders, concentrators or compressors) (indicated in the annex table): |
| | | **Piped source inlet:** Connection to terminal unit / bedside unit (e.g. from a piped oxygen network**)** |
| | | Specify adapter for inlet connection, including but not limited to, 1/8 inch NPT female (this is 'no adapter'), BS (3/8 inch BSP female, "British Standard"), DIN, DISS 'HIT' or DISS nut & gland (female), AFNOR, Ohmeda, Chemetron, Puritan Bennet, Schrader. |
| | | **Points of sale:** Specify the output adapter, eg. Eg, "Christmas tree" tubing adapter, female DISS hose connector to 1/4 in. Connector. ID (male) or DISS, male (indicated in the appendix table) |
| | | Flowmeter material: |
| | | Column must be clear, transparent, break-resistant medical grade polymer (polypropylene, polycarbonate) |
| | | Hardware / Valves: Brass / Steel / Aluminum |
| | | All materials in contact with oxygen certified for medical use. |
| | | Internal parts (eg valve, inlet filter if present), user replaceable. |
| | | Environmental |
| | | It can be stored at an ambient temperature of at least 5–50 ° C, with a relative humidity of at least 15–95% without condensation. |
| | | Suitable for continuous operation at an ambient temperature of at least 5–45 ° C, relative humidity of at least 15–90% without condensation. |
| | | Specific altitude requirements may be required, depending on the installation location. |

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| | | Disinfectable with hospital grade detergents. |
| | Warranty | Minimum 2 years |
| | After sales | Availability of service level agreements and / or repair |
| | QMS | ISO 13485 (medical device QMS) |
| | Regulator | CE and / or |
| | | Registered by the FDA |
| | Product performance standards | ISO 32 Medical Gas Cylinders - Marked for Contents Identification (or ANSI Equivalent) |
| | | ISO 5359 Low pressure hose assemblies for use with medical gases. |
| | | ISO 15001 Respiratory and anesthetic equipment - Oxygen compatibility. |
| | | ISO 15002 Flow-metering devices for connection to terminal units of medical gas pipeline systems. |
| | | ISO 15223-1 Sanitary products. Symbols to be used with the labels of medical devices, labeling and information to be supplied. Part 1: General requirements. |
| | | ISO 18082 Respiratory and anesthesia equipment - Dimensions of low pressure non-interchangeable threaded (NIST) connectors for medical gases. |
| | | ISO 18562 Evaluation of biocompatibility of breathing gas pathways in sanitary applications. |
| | packaging | Name and / or trademark and address of the manufacturer. |
| | | Product name. |
| | | Product reference. |
| | | Product type and main characteristics. |
| | | Information from performance tests against the standards mentioned. |
| | | Lot number preceded by the word "LOT" (or equivalent harmonized symbol). |
| | | Information for particular storage conditions (temperature, pressure, light, humidity, etc.), as appropriate (or equivalent harmonized symbol), if applicable. |
| | | Information for handling, if applicable (or equivalent harmonized symbol). |
| | | If the packaging is not transparent, you should carry a diagram (preferably in real size) that shows the essential parts of the product and indicates the position of the product in the packaging. |
| | | Gross weight. |
| | | Cubic measure. |
| | | Everything indicated at least in English. |

## Humidifier

| Product | Category | Specifications |
|---|---|---|
| Bubble humidifier | **Description** | Device designed to prevent airway drying associated with inhalation of oxygen (O2) by adding water vapor to dry gas as it passes through, or more rarely over, water. It usually consists of a graduated container (reservoir) for the water, a top piece that functions as a removable lid (usually a screw cap with an airtight seal), and a tube that sticks out into the water to divert gas underneath. of the water level. . This device, commonly known as a bubble humidifier, does not heat the water. It has connectors: 1) one (for example, a winged nut) that connects to an oxygen therapy flow meter; and 2) one to which the patient tube is connected. This is a reusable device. (SOURCE: GMDN 35113) |
| | Technical | Reusable humidifier for oxygen therapy and inspiratory ventilation / anesthesia lines. |
| | | Unheated humidifier: room temperature function. |
| | | Bubble humidification system. |
| | | Unbreakable or shatter resistant. |
| | | Clear humidification bottle |
| | | Graduated, the graduation should show the minimum and maximum water level. |
| | | Humidification chamber working volume at least 150 mL, not more than 500 mL. |
| | | Rigid durable polymer or metal removable cap with gas connectors. |
| | | Pressure relief safety valve, pressure rating ≥ 14 kPa (0.1 bar, 2 psi). |
| | | DISS, female connectors (nut) for inlet. |
| | | 6mm barbed connector for outlet. |
| | | Flow capacity up to 15 L / min. |
| | | It must be capable of being disinfected. |
| | | Materials, all certified for medical use: |
| | | Brass / steel / other metal or biocompatible polymer cap and connectors |
| | | Polypropylene, polycarbonate or equivalent biocompatible plastic / polymer bottle and tubes |
| | | Chrome-plated brass or metal equivalent pressure valve |
| | | The supplier must define the decontamination procedure. |
| | Warranty | Minimum 2 years |
| | After sales | Availability of service level agreements and / or repair |
| | QMS | ISO 13485 (QMS for medical devices) |

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| | Regulator | CE and / or |
| | | FDA |
| | Product performance standards | ISO 8185 Respiratory tract humidifiers for medical use – Particular requirements for respiratory humidification systems. |
| | | ISO 15001 Respiratory and anesthetic equipment - Oxygen compatibility. |
| | | ISO 15223-1 Sanitary products. Symbols to be used with the labels of medical devices, labeling and information to be supplied. Part 1: General requirements. |
| | | ISO 18562 Evaluation of biocompatibility of breathing gas pathways in sanitary applications. |
| | | ISO 18190 Anesthetic and respiratory equipment – General requirements for airways and related equipment |
| | | ISO 18562-1 Biocompatibility evaluation of breathing gas pathways in healthcare applications - Part 1: Evaluation and testing within a risk management process. |
| | packaging | Name and / or trademark and address of the manufacturer. |
| | | Product name. |
| | | Product reference. |
| | | Product type and main characteristics. |
| | | Information from performance tests against the standards mentioned. |
| | | Lot number preceded by the word "LOT" (or equivalent harmonized symbol). |
| | | Expiration date by year and month, preceded by the word "EXP" (or equivalent harmonized symbol). |
| | | Information for particular storage conditions (temperature, pressure, light, humidity, etc.), as appropriate (or equivalent harmonized symbol), if applicable. |
| | | Information for handling, if applicable (or equivalent harmonized symbol). |
| | | If the packaging is not transparent, you should carry a diagram (preferably in real size) that shows the essential parts of the product and indicates the position of the product in the packaging. |
| | | Gross weight. |
| | | Cubic measure. |
| | | Everything indicated at least in English. |

## APPLICATION TO THE PROJECT

Based on the national COVID-19 response, through the Oxygen Technical Assistance Program, CHAI assessed priority facilities and determined where new equipment and services could be placed. The evaluations have included an assessment of the current infrastructure, the types of care provided, and the capacity of staff. Considerations for oxygen availability, such as network design and optimization for oxygen supply, have been incorporated into this stage.

To apply to this RFP, applicants must provide (1) a completed application form (Sections 1 and 2); (2) a complete budget template (collectively "Materials"), (3) technical and quality documentation outlined in the Scope of Work, and (4) evidence of technical visits to at least 2 of the 4 facilities. January 17 will be used to receive questions from the candidates, until the 20th the proposals will be received and on January 24 the winners will be published. As of January 25, the winners will have 2 months to Proposed budgets must not exceed USD $ 55,000. Quotation will remain valid for 30 days from the closing date of this RFP.

## SECTION 1: APPLICANT INFORMATION

1. **Name of the beneficiary organization:**
2. **Contact information (include contact name, address, phone number and email):**
3. **Total budget requested:**
4. **Commercial references:**
5. **Provide a brief description of the organization.**

6. **Provide information on experiences related to the work area.**

## SECTION 2: PROJECT INFORMATION

1. **Description of the project and deliverables**

2. **Top activities with due dates and deliverables schedule (make sure the activities shown here match the activities shown in the budget template):**

| Activity (s) / Deliverables | Description | Estimated date of completion |
|---|---|---|
| | | |
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3. **How will this project contribute to the optimization of oxygen delivery to patients in the country or to what extent will it contribute to improving it?**

4. **How are the proposed activities aligned with the national plan for optimization of oxygen supply?**

## ELIGIBILITY AND QUALIFICATION OF OFFERS

**ELIGIBILITY**

The RFP is open to companies that meet the following criteria:

Suppliers will agree to establish a temporary project team structure that includes the participation of CHAI, as well as to organize regular meetings (in person or via telecommunications) and on site when necessary.

**OFFER RATING**

Qualification criteria of the tender:

a. The determination of the qualifications for the selection of the winning bid will be made according to the criteria described in the following table:

| CRITERION | POINTS |
|---|---|
| Delivery Time | 10 |
| Technical Support | 20 |
| Warranty | 30 |
| Price | 40 |

**DELIVERY TIME**

The offer that presents the shortest delivery time in business days for Installation and delivery of accessories, you will automatically get ten (10) points; the other offers will have a rating inversely proportional to the first, depending on the value of your offer. For which the following formula must be taken:

$$\frac{\text{Shortest delivery time offered X 10}}{\text{N value}}$$

Value N = Delivery term of the offers to qualify (in business days).

**TECHNICAL SUPPORT:**

Documents that certify the technical skills of the personnel who will execute the installation, binding certifications, including CVs, photocopies of diplomas, certificates and / or certifications that guarantee competence in this type of service, in the last 10 years to the date of presentation. of the offers.

For the qualification, the BOARD will assign twenty (20) points according to the documents that endorse the competence of the technicians presented by the BIDDER, according to the following formula:

$$\frac{\text{Value NX 20}}{\text{Increased number of records}}$$

N value = Evidence to qualify.

**WARRANTY:**

The offer that presents the highest guarantee will automatically obtain thirty (30) points; the other offers will have a rating inversely proportional to the first, depending on the value of your offer. For which the following formula must be taken:

$$\frac{\text{Value N X 30}}{\text{Highest Guarantee offered}}$$

Value N = Offer guarantee to qualify.

**PRICE:**

The offer that presents the lowest price will automatically obtain forty (40) points; the other offers will have a rating inversely proportional to the first, depending on the value of your offer. For which the following formula must be taken:

$$\frac{\text{Lowest price offered X 40}}{\text{N value}}$$

Value N = Offer price to qualify.

## OTHER INFORMATION

Failure to provide all the information required by the RFP or submitting an offer that does not respond to the RFP in all respects will be the responsibility of the bidder and may result in the rejection or disqualification of the offer.

CHAI shall have the right to seek any additional information or document from the bidder in the manner it deems appropriate in its sole and absolute discretion.

The offer prepared by the bidder, as well as all correspondence and documents related to the offer exchanged by the bidder and CHAI will be drawn up only in Spanish. However, in case the bidder

chooses to attach certain supporting documents in any language other than Spanish, the bidder must also attach certified / authentic translated copies thereof in English. Any document that is not translated into Spanish will not be considered and the offer will be considered incomplete and therefore, subject to disqualification.

All prices quoted in the offer will be quoted in US dollars.

CHAI will examine the offers to determine if they are complete, if they comply with all the conditions of the RFP and if the documents have been duly signed and the offers are in general order. If there is a discrepancy between words and figures, the quantity in figures can be used as the prevailing quantity.

**Disclaimer**

Distribution of this document does not mean that CHAI is committing to award a contract or fund an applicant.

CHAI will not reimburse or assume any costs associated with this RFP regardless of whether an organization is selected to supply.

Please note that no fee is required for the submission of these applications.

CHAI makes no representations or warranties and will not incur any liability under any law as to the accuracy, reliability, or completeness of the information contained in the RFP.

**Confidentiality**

The information that the Respondent considers proprietary must be clearly marked as such. All such information will be treated confidentially and used by the CHAI team for evaluation purposes only.