# BREATHE EASIER DURING YOUR PULMONARY ARTERIAL HYPERTENSION CLINICAL TRIAL

WORLDWIDE CLINICAL TRIALS

WORLDWIDE CLINICAL TRIALS

## PULMONARY ARTERIAL HYPERTENSION (PAH) IS A RARE, PROGRESSIVE DISORDER

characterized by high blood pressure in the pulmonary arteries for no apparent reason. Symptoms of PAH include shortness of breath (dyspnea), especially during exercise; chest pain; and fainting episodes.[1]

## AWARD-WINNING CRO

Our award-winning, specialized cardiopulmonary teams deliver uncommon value, helping emerging and established biopharma, biotech, and pharmaceutical companies test, validate, and de-risk the process of developing better treatments for all forms of PAH.

CRO LEADERSHIP AWARDS2018

Data Quality, Meeting Overall Project Timelines, Technology for Real-Time Access to Data, Operational Excellence, Responsiveness

## WORK WITH A CRO THAT UNDERSTANDS YOUR RARE PATIENT POPULATION

Worldwide Clinical Trials has extensive experience in rare disease and pulmonary arterial hypertension (PAH) trials, which is derived from our global PAH trial experience and enhanced by our medical and scientific understanding of unique PAH trial requirements.

But a successful PAH trial requires much more than scientific expertise. With rare diseases such as PAH, it's important to consider the day-to-day perspectives and needs of the patient to make their clinical trial participation a positive experience and retain them throughout the duration of the study. PAH patients have certain limitations that Worldwide Clinical Trials recommends evaluating when designing your study:

**Easily tired:** PAH patients get tired quickly, so creating a program where their onsite visits are shorter or strategically planned to make their contribution as simple as possible will enable more patients to participate and provide the necessary data needed for the trial, while not exhausting themselves (more than they already are).

**High density of mature patients:** According to the National Center for Biotechnology Information, the mean age of the patients with IPAH or HPAH in the contemporary registries from the Western world ranged from 45-65 years.[2] Designing a trial that uses minimal or simple technology will enhance participation and retention.

**Reliance on caregivers:** Patients with PAH often have caregivers that are part of their daily lifestyle. Involving caregivers in the trial process can improve the trial experience for the patient as well as the post-trial care from their caregiver because of increased understanding of PAH.

**Disease classification:** There are six different groups that fall into the parent category of PAH, presenting additional challenges when evaluating the efficacy of new treatments. It is important to ensure that each patient and group of patients is considered when designing the trial to ensure that the proper data is produced for actionable, reliable results that enable meaningful treatment or cure.

[1] www.rarediseases.org/rare-disease

[2] www.ncbi.nlm.nih.gov/pmc/articles/PMC4959804/

WORLDWIDE
CLINICAL TRIALS

## RUNNING A SUCCESSFUL GLOBAL TRIAL IN A VAST REGULATORY LANDSCAPE

Another challenge that PAH drug developers must consider is a changing regulatory environment, so it is helpful to work with a CRO that has practical and global experience with the methodologies.

Worldwide Clinical Trials is a global CRO, with a presence in 60+ countries worldwide. We have built close relationships with patient engagement groups, key opinion leaders and investigational sites, working to bridge science and operational excellence and deliver new solutions to the PAH population.

We have experience conducting studies in the US, Europe, the Middle East, and Asia-Pacific. We believe that our highly-trained staff in these locations is the key to ensuring you have high-quality insight into your clinical program.

In addition, Worldwide Clinical Trials has partnered with PHaware advocacy group to be involved and informed on pulmonary hypertension news and activities among all aspects of PH clinical trials. We also consistently partner with a variety of relevant PH associations, facilitating and supporting their their efforts to link the science with patients.

## YOU'RE DEDICATED TO THE DEVELOPMENT OF YOUR THERAPY, AND SO ARE WE

Worldwide Clinical Trials has real PAH trial experience. From trials with 160+ patients globally to PAH drug/device studies, team members and sites all over the globe have received detailed training on very complex protocols. Our flexible approach has enabled us to help sponsors improve timelines and outcomes by implementing the following methodologies:

- Using patient-interfacing technology for PAH trials (when appropriate for the patient population)
- Using a novel, FDA-approved randomized withdrawal model
- Nuanced regulatory submissions for PAH device studies and studies using oxygen

## WORLDWIDE CLINICAL TRIALS: WE'RE THE CURE FOR THE COMMON CRO

Worldwide Clinical Trials employs more than 1,600 professionals around the world, with offices in North and South America, Eastern and Western Europe, Russia, and Asia. Founded by physicians committed to advancing medical science, Worldwide is out to change how the world experiences CROs – in the best possible way. From early phase and bioanalytical sciences through late phase, post-approval, and real-world evidence, we provide world-class, full-service drug development services.

With infrastructure and talent spanning 60 countries, we execute predictable, successful studies with operational excellence across a range of therapeutic areas, including central nervous system, cardiovascular, metabolic, immune-mediated inflammatory disorders (IMID), oncology, and rare diseases. We never compromise on science or safety. We're never satisfied with the status quo.

We're the Cure for the Common CRO.

**1,600+** Professionals

**30** Offices

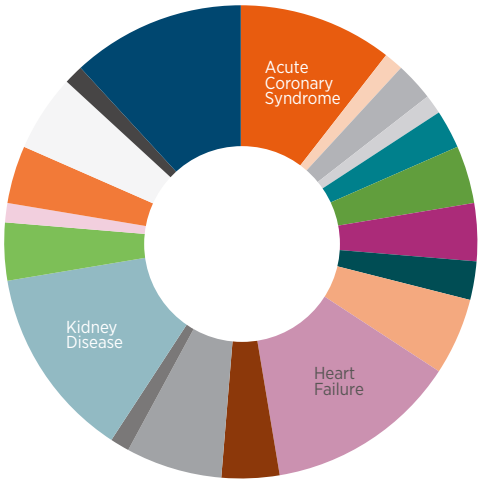
# WORLDWIDE CARDIOVASCULAR EXPERIENCE

## Studies by Indication

| Indication | Studies | Sites | Patients |
|---|---|---|---|
| Acute Coronary Syndrome | 8 | 321 | 14,407 |
| Acute Intracranial Hemorrhage | 1 | 100 | 440 |
| Angina | 2 | 68 | 985 |
| Arrhythmias | 1 | 71 | 640 |
| Atherosclerosis | 2 | 120 | 720 |
| Congenital Adrenal Hyperplasia | 3 | 33 | 382 |
| Diabetes Type 2 | 3 | 54 | 646 |
| Dyslipidemia | 2 | 76 | 580 |
| Gaucher's Disease | 4 | 11 | 64 |
| Heart Failure | 10 | 479 | 3,089 |
| Hypercholesterolemia | 3 | 203 | 2,601 |
| Hypertension | 5 | 65 | 651 |
| Hypertension, Pulmonary | 1 | 16 | 29 |
| Kidney Disease | 10 | 428 | 3,055 |
| Metabolic Conditions | 3 | 52 | 145 |
| Mucopolysaccharidoses | 1 | 2 | 8 |
| Myocardial Infarction | 3 | 171 | 6,961 |
| Myocardial Ischemia | 4 | 441 | 9,796 |
| Obesity | 1 | 8 | 260 |
| Vascular Disease | 9 | 1,713 | 25,795 |
| **Total** | **76** | **4,432** | **71,254** |

## Studies by Phase

| Study Phase | Studies | Sites | Patients |
|---|---|---|---|
| Phase I | 1 | 12 | 50 |
| Phase II | 27 | 776 | 5,270 |
| Phase III | 33 | 1,300 | 27,681 |
| Phase IV-Interventional | 7 | 2,158 | 36,350 |
| Phase IV Non-Interventional | 8 | 186 | 1,903 |
| **Total** | **76** | **4,432** | **71,254** |




**76**

***Full-service* cardiometabolic trials conducted***

Worldwide has extensive experience with the successful management and execution of clinical trials. Worldwide has conducted 76 full-service cardiometabolic trials globally, including sites in North and South America, Western Europe, Central and Eastern Europe, the Commonwealth of Independent States, and the Middle East and Northern African and Asia Pacific regions.

**Full-service studies defined as Phase I (excluding healthy humans), Phase II, III, IV-Interventional and IV Non-Interventional, which included Project Management, Clinical Monitoring and Study Start-up Services since 1992.*

Q4 2018
DATA VALID THROUGH 31-JANUARY-2019

# THERE'S NO SUBSTITUTE FOR UNCOMMON EXPERTISE. MEET YOUR PARTNERS.

**Worldwide is committed to delivering uncommon value. In fact, we go above and beyond to deliver solutions and services that exceed your expectations. Our collaborative, customized project teams, with phase- and indication-specific expertise, develop successful strategies for even the most novel therapies.**

## Soneil Guptha, M.D., FACC, FESC, FCCP, AFPM

**Senior Medical Director, Medical and Scientific Affairs, Cardiovascular and Metabolic Diseases**

Dr. Guptha has 40 years of combined experience in clinical development, medical, and regulatory affairs (US EU APAC) in cardiology, nephrology, lipids, diabetes, thrombosis, drug eluting stents, and asthma/COPD as medical monitor to departmental head since graduating in 1976. Prior to joining Worldwide Clinical Trials, he worked as an independent consultant utilizing his expertise as an academician, clinician (interventional cardiologist), and drug and device developer in the USA, Europe, and Asia Pacific. He is experienced in clinical (cardiovascular and metabolic) medicine; pharmaceutical medicine (clinical, epidemiological and drug & device P2-4 development, research operations, medical affairs, and regulatory affairs); and basic research methodologies.

## Karen Hill

**Senior Vice President, Project Management, Cardiovascular and Metabolic Diseases**

Karen joined Worldwide Clinical Trials in 1993 and is responsible for Global Project Management within the Cardiovascular and Late Phase division. She has more than 23 years of experience in the CRO industry and has worked on numerous large cardiovascular outcome studies, including; INJECT, GUSTO III, InTIME-II-TIMI 17, OPUS-TIMI 16, PROVE IT–TIMI 22, CLARITY–TIMI 28 and MERLIN-TIMI 36, where she held the position of Global Project Manager/Director. In 2003, Karen took over as head of the Project Management department, which included the management and supervision of the company's project managers, CRAs and the IVRS development and support teams. Karen currently leads the Global Cardiovascular and Late Phase Project Management division at Worldwide and continues to supervise global teams working on both large cardiovascular outcome studies, as well as other phase II-IV studies in other cardiovascular indications.

## Laurie Witherwax

**Vice President, Project Management, Cardiovascular and Metabolic Diseases**

Laurie brings over 20 years of experience and roles ranging from clinical study coordinator, to clinical research associate (CRA), followed by a progression to Operations Head and Franchise Leader. Her therapeutically aligned operational experience includes leading large Phase III global clinical trials as well as small-scale early phase clinical trials testing small molecule and large molecule therapies. She was the Program Director for global Phase III cardiovascular trials encompassing 38 countries across 620 sites, including 3,400 patients, and other trials involving complex and rare diseases. Her responsibilities have spanned the full duration of studies, from start-up to project close-out and review.