

# One Million Lives



Impact and sustainability report  
Spring 2023

**Laerdal**



Tor Inge was enjoying holidays with his extended family at their cabin in the fjords of Norway when his father suddenly experienced a cardiac arrest. Far from the nearest hospital, Tor Inge knew that time was critical.

As part of his job at Laerdal, Tor Inge practices CPR regularly. While his wife coordinated with the dispatcher, Tor Inge delivered compressions and ventilations. There was a defibrillator at a nearby school that they got hold of and were able to give him a shock before the ambulance arrived and could take over.

Today, almost a year later, Tor Inge's father lives at home and appreciates time with family and friends, still recovering from the dramatic event.



## Contents

### Helping save lives

Saving lives in the community .....	6
Improving quality of care in hospital .....	12
Saving lives at birth.....	18
Supporting research .....	30
Investing for impact.....	32

### Sustainability

Minimizing our environmental impact .....	36
Being socially responsible.....	44

## Towards one million lives

We are pleased to report on the progress towards the goal we established in 2020: **Helping save one million more lives.** Every year. By 2030. And to do so **in a sustainable way**, minimizing the impact to the environment.

The word helping is key. We do not save lives. Bystanders, first responders and healthcare personnel do, when providing essential help in life-threatening situations. Our aim is to help those who educate and equip these life-savers to be more effective in their work.

The programs described on the following pages make us believe our ambitious goal is well on the way to being achieved. We thank our employees and partners for their valued contributions and look forward to the continued journey together towards 2030.



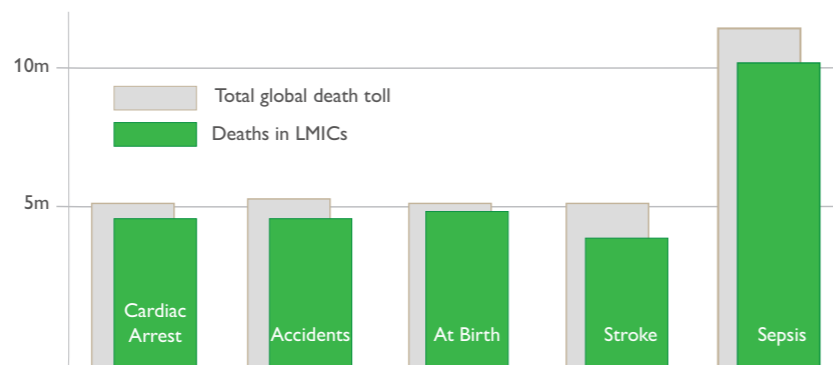
Ingrid Lærdal, Chief Impact Officer and  
Tore Lærdal, Executive Chairman



# Helping save lives

## Introduction

Our [One Million Lives goal](#) was set with the UN Sustainable Development Goal 3, Good Health and Well-being, as the guiding star. Our focus is the 30 million preventable deaths that occur every year from unexpected cardiac arrest, trauma, at birth, sepsis, and stroke – and to help reduce preventable deaths in hospitals from medical errors.



### The opportunities

We believe the biggest opportunities to save lives in these categories are by helping to improve the coverage, quality, efficiency, safety, and equity of healthcare through:

- Early interventions with high lifesaving potential
- Leveraging enabling technologies
- Collaborative initiatives for development and scale-up

With our partners we are developing and implementing programs that can have a sustainable and long-term impact and support the transition from donorship to ownership. We do not just focus on the numbers of lives saved but – just as important – the quality of those lives, equating to 50 million more quality life years saved every year by 2030.

### Our goals

	Lives per year	Years per patient	Life years
Newborn	500,000	70	35,000,000
Maternal	50,000	50	2,500,000
Cardiac Arrest	150,000	17	2,500,000
Accidents	100,000	50	5,000,000
Other time-critical emergencies, including stroke and sepsis	100,000	25	2,500,000
Patient safety, including global surgery and anesthesia	100,000	25	2,500,000
<b>Total</b>	<b>1,000,000</b>		<b>50,000,000</b>

It is not only about the **number** of lives saved but also about the **quality** of those lives

### A promising start

In this report, we share some of the partner initiatives launched since 2020 that have a particularly high impact potential as they scale up towards 2030.

#### Saving lives in the community

- New CPR training solutions – have already helped train more than 10 million new bystanders in quality CPR
- RevivR – a digital CPR program with potential to massively scale up CPR training, and improve bystander CPR rates.
- RQI-T – a quality improvement program for telephone CPR, which can double the impact of community CPR training.
- The Global Resuscitation Alliance – aiming to double survival from out-of-hospital cardiac arrest.

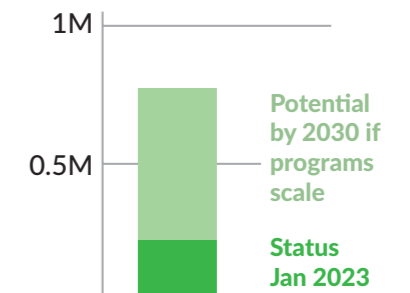
#### Improving quality of care in hospital

- The Resuscitation Quality Improvement program – with a goal to help save 50,000 more lives every year
- Strengthening healthcare education by competency-based, scalable solutions such as SimCapture and vSim

#### Saving lives at birth

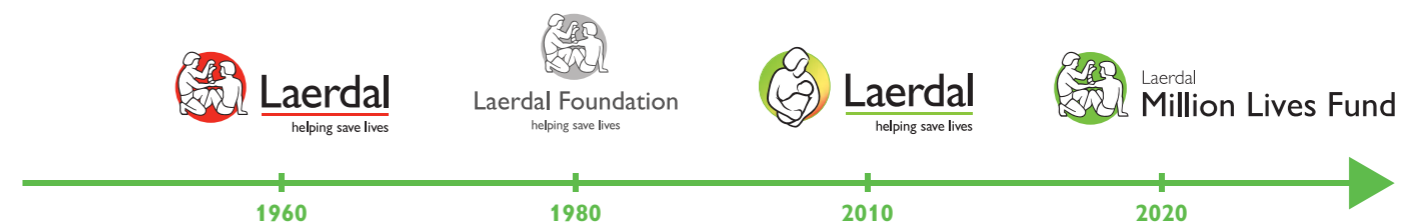
- The Safer Birth Bundle of Care program in Tanzania – could help save over 200,000 more lives per year if scaled globally
- The Saving Little Lives program in Ethiopia – which could save another 200,000 lives per year if scaled globally.
- Safer births in humanitarian settings – where around 50% of global maternal and newborn mortality occurs.
- Strengthening midwifery education – we work with partners to address the estimated gap of 900,000 midwives by 2030.

### Progress and potential with current initiatives



The programs described in this report already have significant impact. If they can scale up towards 2030, we estimate 600,000-800,000 more lives can be saved, every year, compared to our 2019 baseline. To meet our One Million Lives goal, additional initiatives are under consideration, including for stroke and sepsis.

In addition, we describe the continuing support the **Laerdal Foundation** provides to documenting what initiatives and interventions have an impact and should be scaled up, and the venture investments made by the **Laerdal Million Lives Fund** since it was launched in 2020.







Christian Eriksen was playing one of the most important matches in his career, the European Championship in his home-country Denmark, his team fighting to advance towards the finals.

Suddenly, in the middle of the match, he collapsed with a cardiac arrest. His heart stopped for four minutes. Millions were watching on live TV.

Luckily, his team and support staff started CPR quickly, and the ambulance arrived soon thereafter and gave high-quality care. Today, he has a pacemaker and is playing for Manchester United and the Danish soccer team.

## Saving lives in the community

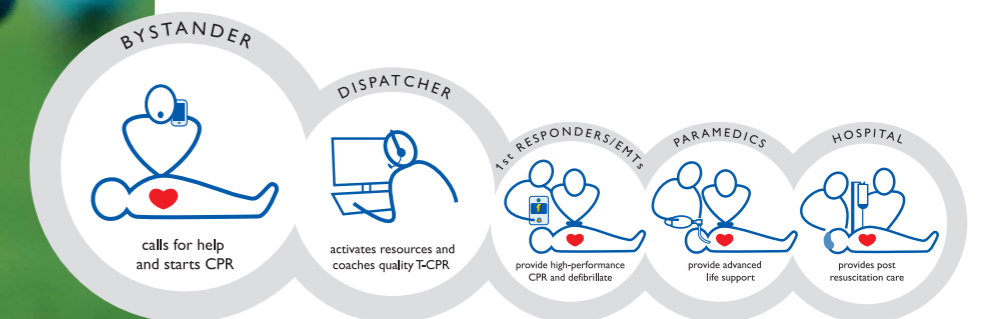
### The challenge

Every year, an estimated 23 million people die from time-critical emergencies that start in the community.

### The opportunity

The biggest opportunity to save more lives lies in optimizing the first two links in the chain of survival: enabling the bystander to activate the chain of survival early; and having a dispatcher effectively coach the bystander to help until the ambulance arrives.

There are also tremendous opportunities to save more lives by learning from the EMS systems with the best survival rates in the world – unpacking their “secret sauce” and helping other EMS systems to improve their own systems towards this gold standard.



The biggest opportunity to save more lives lies in optimizing the first two links in the chain of survival



10  
million

*new bystanders  
trained so far*

## Improving community CPR training

One of the most important factors to increase survival from out-of-hospital cardiac arrest is bystander CPR. It is about the number to be trained – but the bystanders also need to do CPR with high quality and work effectively together with the dispatchers.

### New quality CPR solutions

Just before 2020, we launched [Little Anne QCPR](#) and new child and infant QCPR manikins to help instructors improve CPR training quality, classroom efficiency, and learner engagement with gamified learning and feedback technology. Even with most instructor-led CPR trainings paused during the pandemic, more than 10 million new bystanders have been trained with these solutions so far.

### Reaching further with digital solutions

When Covid hit, all community CPR training got cancelled – but the need for training laypeople and providing bystander CPR was still there. In response to this, we worked together with our long-standing partner, the British Heart Foundation, to develop [RevivR](#) – an online and interactive CPR training program for individual or group training.

In just 15 minutes, it is possible to learn how to assess the scene, make an emergency call, and get help to perform chest compressions and use an AED. No equipment is needed other than a firm pillow and a smartphone. The phone captures the movement of the learner and gives live feedback to guide the learner to perform chest compressions.

3

million

*RevivRs to be trained  
in UK alone by 2025*

## RevivR

The goal is to train 3 million people to be ‘RevivRs’ over the next three years in the UK alone.

RevivR can complement – and help reach further than – traditional CPR programs. As it scales to new countries in the coming years, we believe it can help prepare tens of millions of new lifesavers.



## Mobilizing the first resuscitation team

Even for bystanders who have been trained in CPR, a real-life sudden cardiac arrest is very stressful. But they are never alone if the emergency call is made promptly and the telecommunicator or dispatcher has been well-trained in helping the rescuer deliver high-quality CPR. Such coaching has been shown to [increase the quality](#) of CPR provided and [double bystander CPR rates](#).

Simulation of a call with dispatchers is becoming a more integrated part of community CPR programs, but also the dispatcher needs training on how to handle the calls from people in extreme stress in the most efficient way.

### Resuscitation Quality Improvement program for dispatchers

Together with the American Heart Association and the Resuscitation Academy in Seattle, we have developed the Resuscitation Quality Improvement program for Telecommunicators ([RQI T-CPR](#)). The program aims to help telecommunicators (dispatchers) increase the frequency of out-of-hospital cardiac arrest recognition and high-quality CPR delivery to patients, decrease the time to delivery of care, and empower them as a key link in the chain of survival.

The RQI T-CPR program has been implemented among more than 700 telecommunicators in several states across the US. Results are highly encouraging. One [example](#) is from Maryland, where Charles County 9-1-1 has seen a 28 % decrease in time from the start of the call to recognition of arrest. And importantly, cardiac arrest survival has more than doubled.

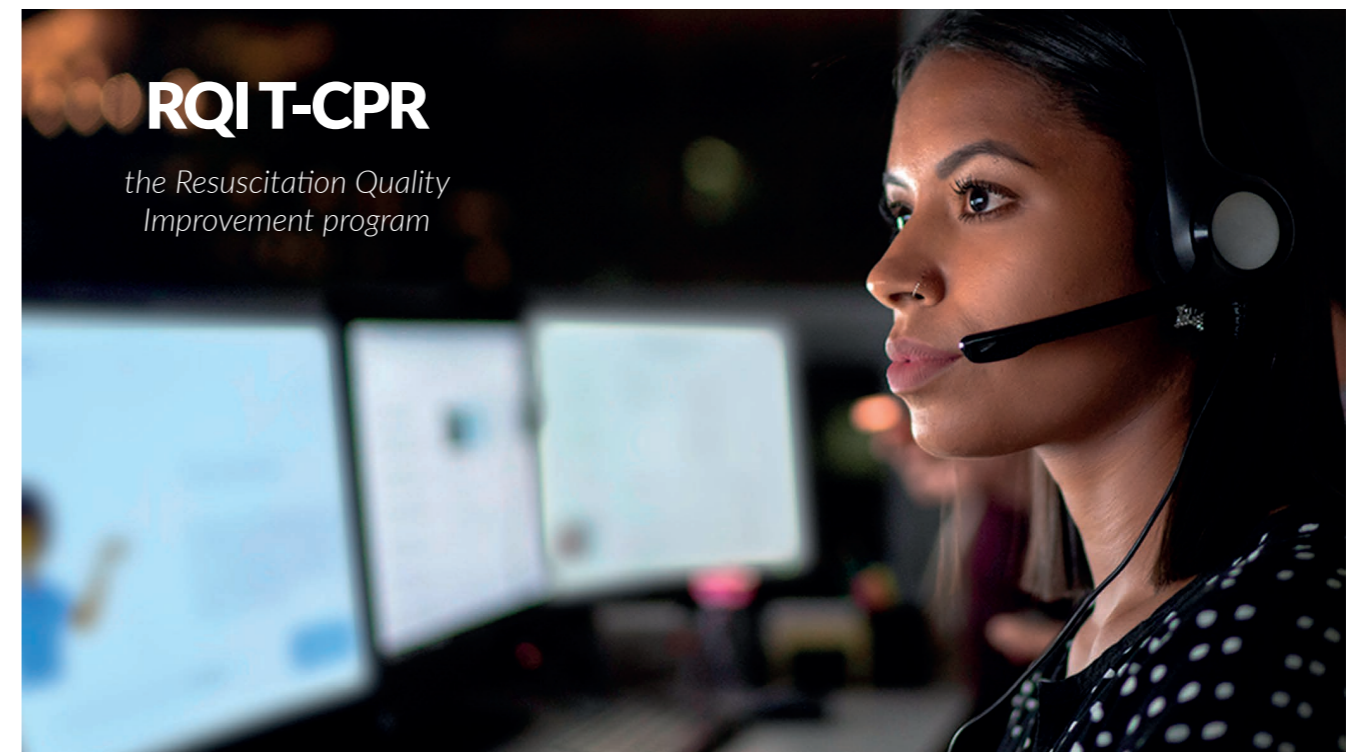
2X

increase

*in bystander CPR rates  
with telecommunicator  
CPR*

## RQI T-CPR

*the Resuscitation Quality  
Improvement program*







**Global Resuscitation Alliance**

**50%**  
**increase**  
*in survival is possible*

### Spreading best EMS practice

Survival from out-of-hospital cardiac arrest is very dependent on where you live. While some Emergency Medical Systems (EMS) show survival rates above 50 % of patients with ventricular fibrillation, others have close to 0 %. This difference is found not only between countries - but even *within* countries.

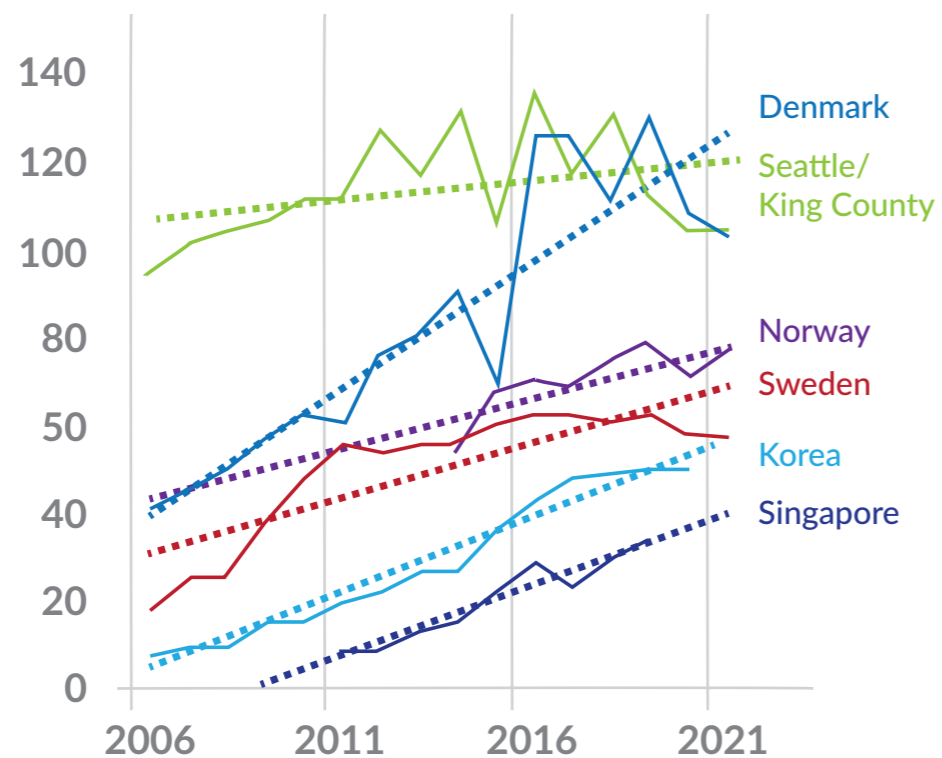
The Global Resuscitation Alliance was formed in 2015 to develop best practices and guidelines to remedy this geographical disparity. It identified [10 steps](#) to improve survival from out-of-hospital cardiac arrest and there are now more than 100 case studies on [the Alliance website](#) covering their implementation. The tools and training for this implementation are supported by secretariats in North America, Europe, Asia, and Australasia with biannual global webinars sharing new case studies.

#### Improving survival

A 2019 case report showed that when the 10 steps are implemented effectively a 50% - *or more* - improvement in survival is achievable. The review also showed that even the best performing systems improve. The average improvement (dotted lines in graph) is remarkably similar across the different countries. Denmark stands out with a more rapid improvement - the reasons why remain to be explained.

The most recent survival data show that, although the general trend is still very positive, the coronavirus pandemic has caused a temporary reduction in some places.

Survival per million population



#### Establishment of new global resuscitation alliances

The promising development of this alliance has led to the expansion of the concept: an [in-hospital pediatric resuscitation alliance](#) was launched January 2022, and an in-hospital adult resuscitation alliance is to be launched in 2023.

#### Expanding the 10 steps to low-and middle-income countries

While the 10 best practice steps have proven effective for many developed EMS systems, they may be too challenging for EMS systems which are in the early stages of development. A consensus process to define more relevant and achievable steps and quality indicators for such systems started in Singapore in 2022, involving EMS leaders from 13 Asian countries. They are developing a [Pre-hospital emergency care system assessment toolkit](#) for out-of-hospital cardiac arrest, stroke, trauma, and perinatal mortality.

#### Developing High-Performance Resuscitation Teams

High-Performance CPR is one of the Global Resuscitation Alliance's 10 steps for increased survival. To support its implementation, we have worked with the US Resuscitation Academy to run simulation-based [High-Performance Resuscitation Teams](#) workshops. More than 1000 professional responders have been trained. Going forwards, we will expand our focus to support Resuscitation Academy events where all 10 steps are introduced.







For more than 30 years, Michael has trained colleagues at the University of Alabama at Birmingham, USA in CPR. In April 2017, Michael himself entered into cardiac arrest whilst at work. His colleagues, trained in the RQI program, performed CPR for 18 minutes and provided four shocks with a defibrillator.

After his heart returned to a normal rhythm, Michael's care team inserted two stents to reopen his blocked right coronary artery. Michael sustained no lingering brain or neurological damage, and after two months of cardiac rehabilitation he returned to work.

## Improving quality of care in hospital

### The challenge

WHO estimates a shortage of 10 million health workers by 2030 to reach the Sustainability Development Goal 3 of good health for all. At the same time, more people die from lack of quality care than lack of access.

### The opportunity

In the hospital setting thoughtful implementation of simulation can address the needs for both compliance, competence and quality improvement. Regardless whether the question is "how well is my system performing?", "how can we change the way we are working to improve quality?" or "which competencies need improvement?", healthcare simulation offers a toolbox that can help without putting any patients at risk.

To achieve sustainable and long-term impact, the coverage gap must also be addressed with more and better-trained students. We see great opportunities to help with more scalable simulation solutions, supporting the move towards competency-based education and helping increase the throughput in education.

To save more lives, gaps in both quality and coverage must be addressed



The updated Circle of Learning reflects simulation's potential to drive healthcare quality improvement





**1.4**  
**million**

healthcare providers  
enrolled in US so far

## A paradigm shift in resuscitation training

### Making an impact in US and growing internationally

In the United States, approximately **300,000 cardiac arrests** occur in hospitals every year. Only about 1 in 4 of these patients survive with a great disparity across hospitals ranging from less than 10% in the poor performing hospitals to close to 40% in the best ones. **Analysis** of these data identified three hospital resuscitation practices that were associated with higher rates of survival: frequent review of cases, monitoring for interruptions in chest compressions, and staff's assessment of the adequacy of resuscitation training. Addressing these issues regarding the quality of CPR and bringing all hospitals to the standard of the best could result in about 50,000 extra lives being saved per year in the US alone.

It was this potential that motivated the American Heart Association (AHA) and Laerdal to form a partnership, RQI Partners, in 2018, to accelerate hospitals adopting the **Resuscitation Quality Improvement** (RQI) program based around the concept of low-dose, high-frequency learning for CPR. Implementation of this program at Texas Health Resources Hospital in Dallas resulted in a doubling of survival in its first year.

A **study** published in 2020 directly compared instructor-led training with the RQI program. Providers recently trained in BLS with an instructor were unable to meet the AHA's guidelines for correct compressions and ventilation when measured objectively at an RQI simulation station. After one RQI session, overall compression scores increased by 81% and ventilation scores grew from 19% to 70%.

1.4 million healthcare providers are enrolled in the RQI program in the US so far, with an estimated **20,000 extra lives** having been saved over the last three years based on the experience of early adopters.

With this increasing adoption in the US and positive responses from trial programs in Belgium, the UK and Australia, RQI is now being introduced in more than 20 countries with 50,000 learners now enrolled.

### Adding newborn resuscitation

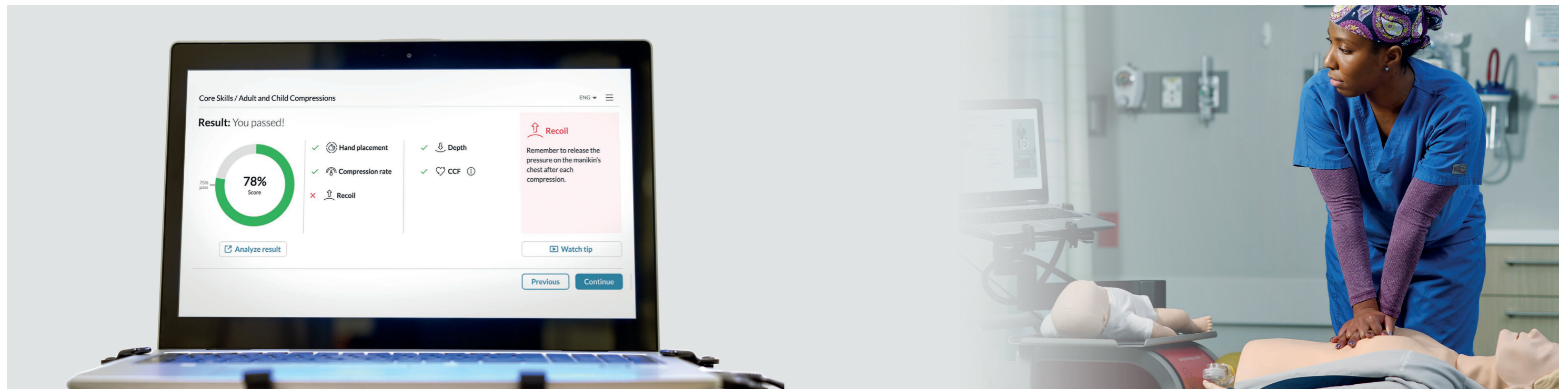
In 2021, the American Academy of Pediatrics' Neonatal Resuscitation program (NRP) was updated to include the Resuscitation Quality Improvement program. **RQI for NRP** provides an objective assessment of positive pressure ventilation skills in real-time and is focused on mastery learning by using repeated practice and coaching. Every three months, students practice their skills and knowledge and are assessed.

### Expanding to nurse education

In 2022, RQI Partners joined with Laerdal's long-standing partner, the National League for Nursing, to bring RQI into US nursing schools. Twenty nursing programs at US colleges and universities have adopted **RQI**, becoming the first higher education institutions to introduce a true competency-based education for resuscitation. Upon graduation, these students will make a significant impact on the health outcomes of their patients and the healthcare systems and communities they serve.

**20,000**

The estimate of extra lives  
saved over the last  
three years





## Moving from **input** to **output**

### Scaling competency-based education

Despite the globally acknowledged need to train more health-care professionals, challenges such as shortage of faculty and lack of clinical placements limit how many students can be educated with quality. At the same time, there is a progressive movement towards competency-based education, a shift from delivering input to students to measuring students' learning outcomes.

#### Student-led skills training

To support the move to competency-based education, we work with partners to develop solutions that help obtain, assess, and verify competencies throughout education. One of these is [SimCapture](#), helping students practice on key procedures and skills with their peers, capturing data from sessions and giving faculty an overview of the students' progress. The student-led model allows better use of faculty time and helps schools cope with faculty shortage.

**Results** are highly encouraging. In 2022, students in 40 schools went through over 200,000 practical skills training sessions and used the opportunity to repeat until they felt confident and were competent. With automated data reports, faculty could prioritize their time to support students that needed it the most and also get insights into how the curriculum could be improved. Based on these positive results, the program is now rolling out globally.

#### New virtual simulation solutions

In 2014, we launched vSim for Nursing together with Wolters Kluwer and the National League for Nursing – a virtual simulation where a student takes on the role of a nurse in a simulated healthcare setting. During Covid, use increased ten-fold as vSim met a critical need for students to practice when nursing schools closed and hospitals not could offer clinical placement.

In 2022, vSim was updated to [NextGen vSim for Nursing](#) with increased patient fidelity, communication training and updated educational outcomes. In January 2023, the same partners launched the complementary [vrClinicals for Nursing](#), where virtual reality is used to engage students with a realistic, busy hospital environment. The aim is to develop students' proficiency in multi-patient prioritization, clinical judgment, and handling unexpected complications.

#### Reducing implicit bias and promoting equitable care

Recent years have shone a light on several marked disparities in quality of care between different racial, ethnic, and other demographic populations. For instance in the US, black adults are 32 % more likely to die from cardiovascular disease and 45 % more likely to die from stroke, and black women are three times more likely to die during birth than white women. Although addressing these health disparities requires a multipronged systems-approach, an important part is to educate our current and future healthcare providers.

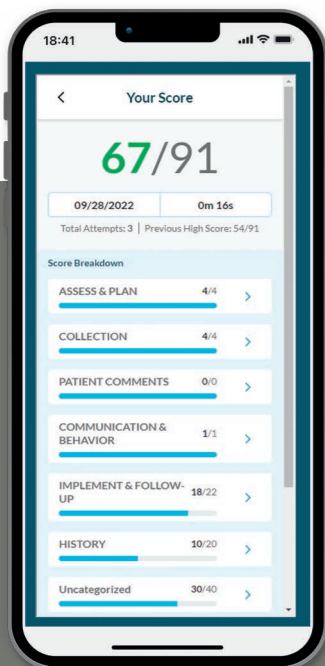
To support this training in the best way, we have increased diversity in both race, gender and age in our digital and physical patient simulators and simulation scenarios. We have also developed a [free guide](#) for how to use simulation-based training to reduce implicit bias and promote equitable care.

#### Nursing Anne Simulator.

*Exchangeable parts allow it to be used for training in the care of patients of varying ages and ethnicity.*

# 10X use during Covid

*- meeting a critical  
need for training*



Students train together - guided by digital checklists, and automated evaluations providing immediate personalized feedback and areas for improvement.







Ange Marie gave birth in her local hospital in Rwanda to a healthy baby girl, Gianna. But after the birth, Ange Marie began to bleed. Her life was at risk.

Ange's midwife, Gentile, had participated in the Helping Mothers Survive Bleeding After Birth training and knew exactly what to do. Ange Marie survived and is a healthy mother taking well care of her baby girl.

## Saving Lives at Birth

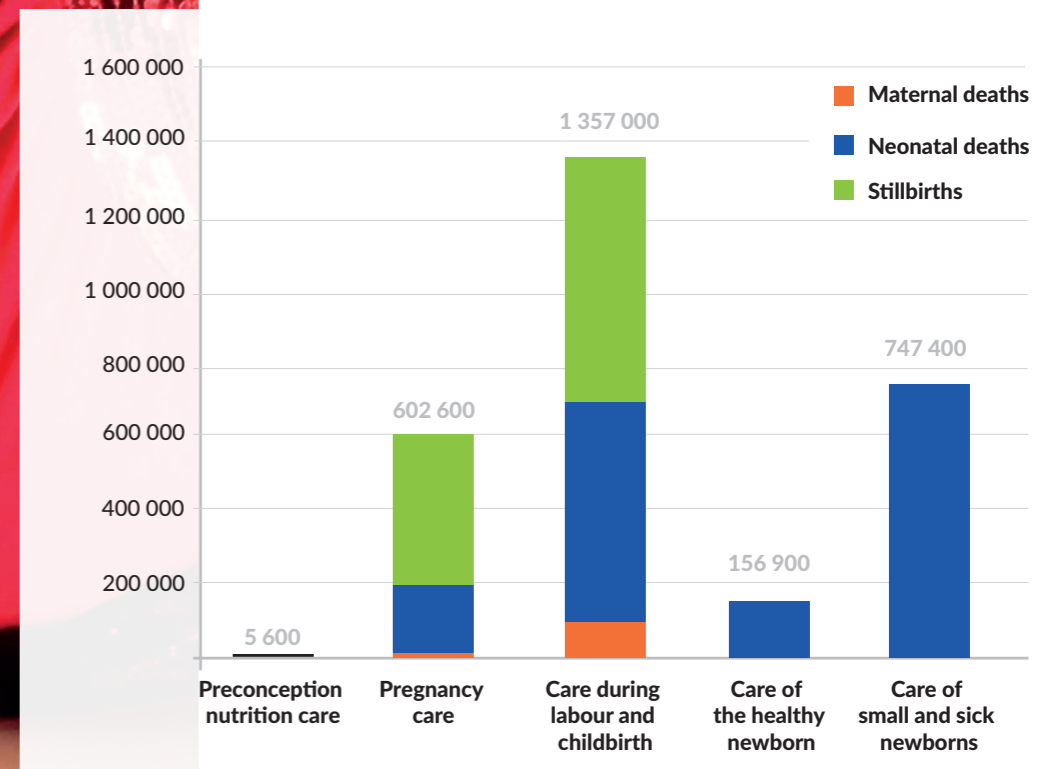
### The challenge

Every year, nearly 300,000 mothers and 2.3 million newborns die on the day of birth. Tragically, another 750,000 babies are misclassified as stillborn, with undetected heartbeats and left to die although they could have been resuscitated.

99 % of these deaths are in low-income countries.

### The opportunity

UNICEF and WHO [estimate](#) 2.8 million more lives could be saved from stillbirths, maternal and neonatal deaths every year by 2030, from a 2016 baseline. This does not require breakthrough innovations but could be achieved by scaling up interventions that are already known to work and ensuring a high quality of care.



The biggest opportunities to save more mothers and newborns are on the day of birth



## Safer Births Bundle of Care

### Building on 12 years of research and development

Inspired by the significant impact of the Helping Babies Breathe program and a belief that there was a potential to save even more lives from birth asphyxia, the [Safer Birth research program](#) was established in 2012 in Haydom Lutheran Hospital, Tanzania. This has become the largest research and development program for newborn resuscitation in the world, leading to four new training and clinical innovations and the publication of more than 100 peer-reviewed papers.

This research has shown that by using these tools in a systematic way, performing on-site frequent refresher trainings, and using data for quality improvement, each midwife was able to save [two more lives](#) every year.

### Scaling up

In 2020, Haydom Lutheran Hospital together with the Ministry of Health started a scale-up of [the Safer Birth Bundle of Care](#) in 30 hospitals in Tanzania. They believed the Safer Birth innovations, coupled with weekly in-situ simulation training and using data from the local facilities to drive weekly quality improvement, could lead to significant and sustained impact. Regular mentorship and supportive supervision were considered key to establishing and sustaining this quality improvement program.

The program has a strong research component and will be documented by [8 Ph.D. candidates](#).

The goals of the program are a 50 % reduction in early newborn mortality, a 25 % reduction in stillbirth mortality, and a 10 % reduction in maternal mortality. [A halfway evaluation](#) just published shows an encouraging and steady trend of increased newborn and maternal survival, giving optimism that the neonatal and maternal goals are within reach.

If these early results are maintained, it could pave the way for a national scale-up with the potential to save more than 25,000 lives every year in Tanzania alone. If scaled globally, more than 200,000 lives could be saved - every year.

### A vote of confidence from the World Bank

Based on the positive preliminary results, the Safer Births Bundle of Care has been awarded an additional 8.5 mUSD from the Global Financing Facility of the World Bank (bringing the total funding to 13 mUSD) to [scale up to over 100 hospitals](#) in 2023-2024.

**200,000  
more lives**

*could be saved every year  
if scaled globally*

## Safer Births BUNDLE of CARE

### Clinical innovations

Fast and reliable fetal and newborn heart rate monitoring, efficient bag-mask ventilation and improved maternal care

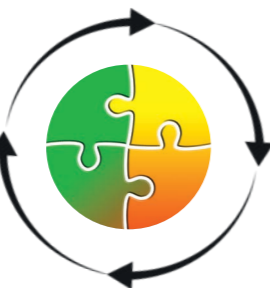


### Training innovations

In-service simulation training for helping mothers and newborns survive



MamaNatalie



### Continuous QI

Actionable data for treatment and competence-management through low-dose, high-frequency refresher training at the worksite



LIFT data management platform

### Sustainability

Supported by strong Ministry of Health ownership, regular mentorship and supportive supervision



MamaBirthing



NeoNatalie Live



One of the many babies resuscitated successfully with guidance from the NeoBeat newborn heart rate monitor in the Safer Births Bundle of Care



# 35%

goal for reduction  
in neonatal deaths

# 200,000 more lives

could be saved every year  
if scaled globally

## Saving Little Lives in Ethiopia

Of the two and a half million newborns that die every year, 80% are low-birthweight babies, and 2/3 are born prematurely. The [Saving Little Lives program](#) in Ethiopia has a goal of reducing newborn mortality by 35 %.

### Implementing what works

A key intervention in the Saving Little Lives Bundle is Kangaroo Mother Care (KMC). Despite strong evidence for the positive benefit of KMC over three decades, global uptake remains as low as 5 %. Ethiopia has previously managed to increase KMC usage to 80% in some places, but they found too many babies died before they were stabilized and KMC could be initiated.

To address this, the Saving Little Lives program has expanded the bundle to also include sepsis prevention and management, bubble CPAP for respiratory distress, thermal care, and feeding management. Several participating hospitals are also implementing immediate KMC.

### Scaling to 290 hospitals

The program is led by the Ethiopian Ministry of Health and integrated into their strategic healthcare plans. It will be implemented in 290 hospitals from 2021-2023 through simulation-based training, on-site mentorship, and ongoing quality improvement.

The Laerdal Foundation has supported four Ethiopian PhDs that will document the impact and learnings from the program. The program is also integrating several Safer Births innovations, including NeoNatalie Live for newborn resuscitation training, NeoBeat newborn heart rate meter, Moyo fetal heart rate meter, and CarePlus Kangaroo Mother Care wrap.

On August 15 2022, Baby Meskerem was born. She weighed only 1100 grams. Abebe Haile didn't know if his baby would survive. His wife, Mulunesh, had eight previous pregnancies, but only three babies had survived.

While Mulumesh recovered from a necessary cesarian section, healthcare workers taught Abebe how to keep the baby warm and fed in the skin-to-skin position known as Kangaroo Mother Care. He did this for at least six hours every day and throughout the nights.

It worked. Today, Meskrem is healthy and thriving.



The pattern for our CarePlus Kangaroo Mother Care has been made available for free. Five sites in Ethiopia now produce these wraps for the Saving Little Lives program. In photo: Abiy Seifu, principal investigator for the Saving Little Lives program.

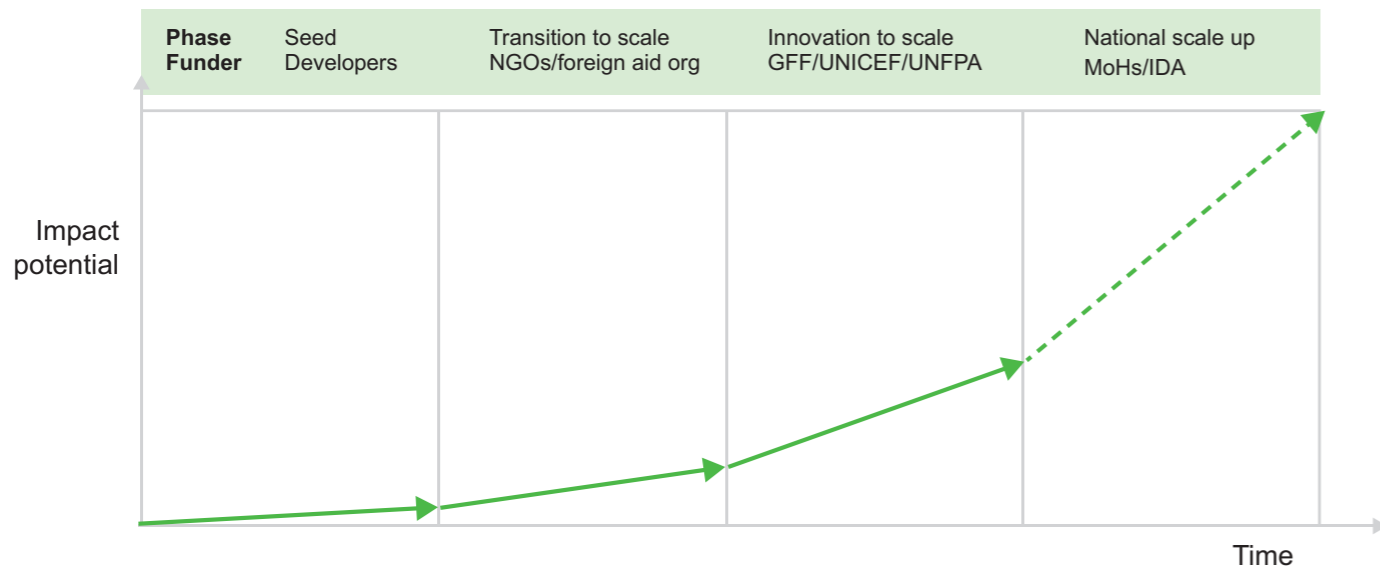




## From donorship to ownership

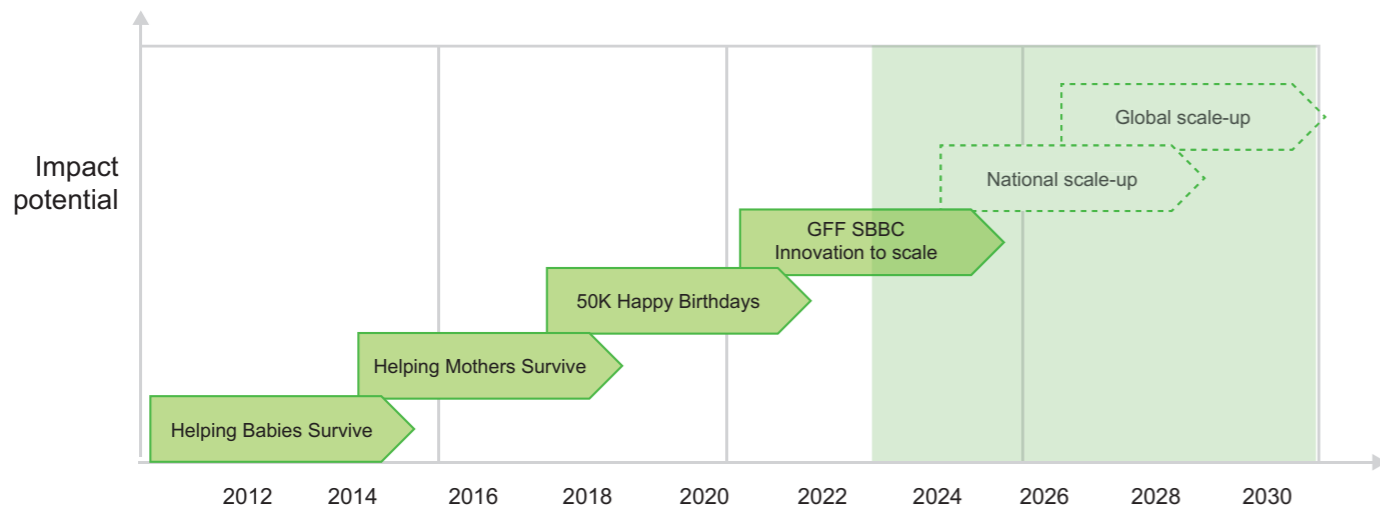
We believe the only way impact can be sustainable, is for programs to move from a model of donor funding to being owned and run by local health governments. To get there, innovative financing models can help.

In 2020, we partnered with the Global Financing Facility (GFF) on an [Innovation-to-Scale](#) award to scale up and test the so-called investment cases of promising innovations with high impact potential.



### Safer Births BUNDLE of CARE

Safer Births Bundle of Care was one of the programs that received funding from GFF. If it shows the expected impact and cost-efficiency it may set example for full national scale-up not only in Tanzania, but also in other of the currently 36 GFF countries.



### Buy One - Gift One

For every MamaNatalie or MamaBirthe simulator bought through Laerdal Medical, another one is donated to a low-income country through our Buy-One-Gift-One program. To date, more than 7,000 simulators have been donated to places where they're needed most.

**> 7,000**  
birthing simulators  
donated so far



4.3  
million

mothers and newborns  
could be saved  
– every year

2X

improvement

in midwifery skills

## Strengthening midwifery education

The world needs [900,000 more midwives](#). By fully investing in midwifery-led programs, two-thirds of maternal and newborn deaths could be prevented, equating to 4.3 million lives per year by 2035.

The International Confederation of Midwives (ICM) has clear guidelines for how schools can implement competency-based, quality education. But the lack of well trained educators, limited access to clinical sites, and few opportunities to attain and retain skills remain a challenge. Simulation-based education is an important part of the solution.

### The power of simulation

In Nepal, we have been privileged to collaborate with the Ministry of Health, the German Development Agency, the World Health Organization, UNICEF, and national professional associations [to integrate simulation-based training into their midwifery education](#)

Together, we have conducted needs assessment relative to the global ICM standards, integrated simulation-based education into the national curriculum, established simulation labs, and trained faculty in simulation-based methodology. The result among students as well as faculty shows more than a doubling in skills performance, and increased competence and confidence. More than 100 new Nepalese midwives have graduated so far, helping make over 10,000 births in Nepal safer, every year. And we are just getting started.

Similar initiatives are underway in other countries. In India, we are working with the Fernandez Foundation, Aastrika Foundation, Jhpiego and others to support the government of India in establishing a new midwifery cadre and educate 86,000 new midwives.

### International partnerships

We have become a member of the Alliance to Improve Midwifery Education ([AIME](#)), where we together with WHO, ICM, UNFPA, UNICEF and other partners work to raise the quality of midwifery education by developing new training resources, guidelines, evidence, and advocacy to address gaps in midwifery education.



When baby Aaresh was born, he did not breathe. The hospital was busy and short on staff – so Bedika had to manage the resuscitation alone, even though she was a new midwife. “I took a deep breath and remembered what I had learned. We practice resuscitation regularly to keep our skills sharp. I had practiced a difficult case where I had to do bag and mask ventilation for 2 minutes – it’s quite a long time. But I remembered that it worked. So, I didn’t give up. I continued for 2 minutes and 30 seconds. I only stopped once I heard the sound I had been hoping for – the baby cried.”



# 50%

*of global maternal  
and newborn mortality occurs  
in humanitarian settings*

# 1 more life every year

*The estimated potential  
per health worker trained*

## Safer births in humanitarian settings

Nearly 30 million babies every year are born in humanitarian settings where events such as war, famine, epidemics, or natural disasters have resulted in a critical threat to health. As much as **60 % of maternal and 38 % of global newborn mortality occur in such places**, particularly in refugee camps. It is also where the highest rate of stillbirth occurs.

We know that well-trained and equipped health workers can save most of these lives. But in-person training with a facilitator in these settings is difficult, so new methods were needed.

### Improving training by remote facilitation

Together with American Academy of Pediatrics and the WHO, we have made **a digital version** of the Helping Babies Breathe program and established remote training alternatives. These enable content to be delivered via video conferencing by a facilitator located anywhere in the world - supported by an on-site facilitator. This training model enables staff working in humanitarian settings to be trained regularly and maintain competence.

This program has been adopted by UNFPA, Médecins Sans Frontiers (Doctors without Borders), and the USAID-funded MOMENTUM program. Trainings have occurred in Yemen, Afghanistan, South Sudan, Madagascar, Democratic Republic of Congo, and Somalia. Doctors without Borders plan to roll it out to 50 additional countries. We believe every health-care worker trained can help save at least one more life every







## Supporting research

The Laerdal Foundation was established in 1980 in collaboration with the University of Oslo. It has a shared mission and goal with Laerdal Medical but operates independently.

In 2022, the Foundation renewed and reinforced its strategy towards the goal of helping save one million more lives and increased annual grants to almost 4 mUSD every year, with 50 % allocated to projects in low-resource settings.

Since 2020, 140 new research projects have received support. A full overview is available on the Foundation's [website](#). Funded projects with particularly high impact potential include:

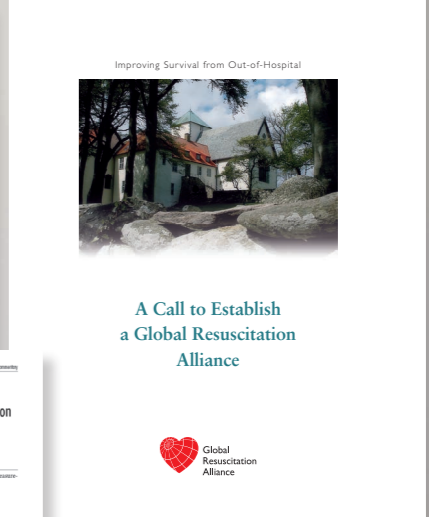
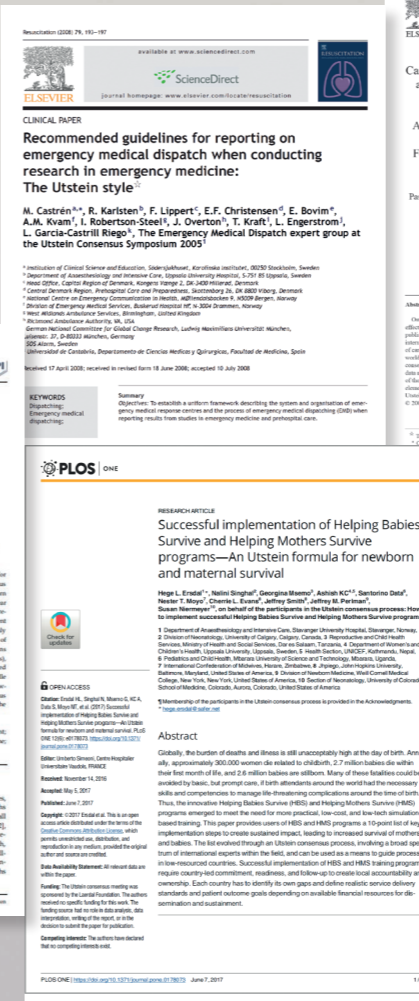
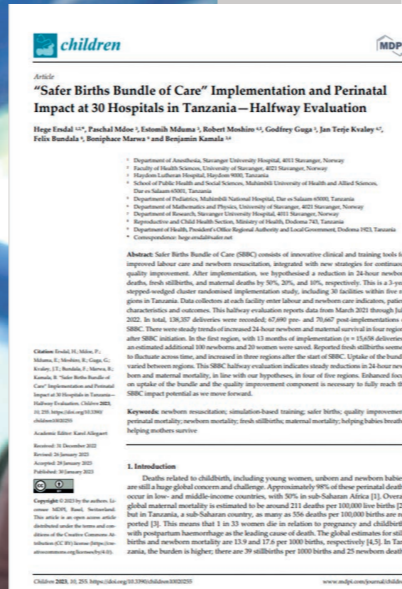
### Saving Lives at Birth

Eight PhDs in Tanzania and Ethiopia will document the impact and learnings from the [Safer Birth Bundle of Care](#) and [Saving Little Lives](#) programs described earlier. Another initiative is the Delivery Room Intervention and Evaluation ([DRIVE](#)) network, a research network among US hospitals to improve outcomes among normal-term newborns in need of resuscitation.

### New global resuscitation alliances

The Foundation supported the establishment of the seminal out-of-hospital [Global Resuscitation Alliance](#), and is now also supporting further expansion of this alliance into in-hospital settings (as described on pages 10-11).

**50%**  
of funding to Saving Lives at Birth



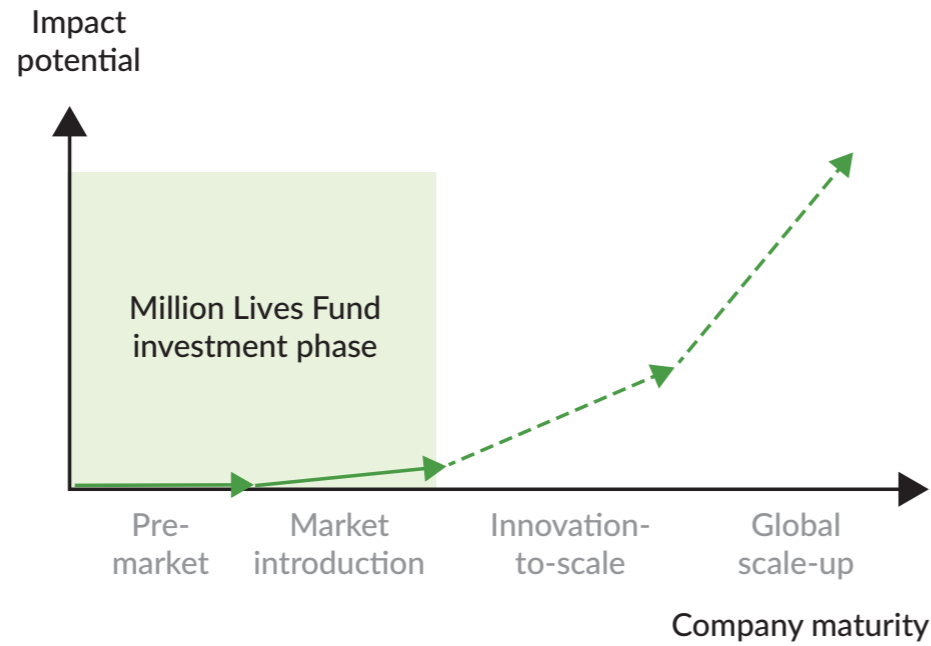
**4M**  
USD  
annual funding



### Investing for future impact

The **Laerdal Million Lives Fund** is a 100 mUSD venture capital fund established in 2020 to invest in disruptive, data-driven enabling technologies that can contribute to Laerdal's impact goal of helping save one million lives every year by 2030.

The Fund is investing in early-stage companies which can have a significant impact once they scale up.



**The fund has made eight investments to date:**



The world's first voice-activated, in-home digital care assistant for remote caregiving.

**30K**

deaths due to falls in the US



A smart, connected automated external defibrillator, aiming to cut cardiac arrest response times to below 4 minutes.

**5M**

out-of-hospital cardiac arrests



A digital clinic delivering evidence-based care for those whose lives are at risk through drug overdose.

**100K+**

drug overdose deaths in the US



Novel non-invasive sensors coupled with artificial intelligence to support high-risk cardiac patients.

**6M**

heart failure patients in the US



A smart colposcopy solution for more accurate diagnosis of cervical cancer in point-of-care settings.

**300K+**

cervical cancer deaths globally



The world's first emergency response data platform linking millions of devices directly to EMS and first responders.

**400M+**

connected devices in the US



A pan-African tech-enabled health insurance platform integrating telemedicine and healthcare facilities.

**95%**

of Nigerians without insurance access



An integrated virtual care and patient navigation solution for first responders to assess, triage, and navigate patients.

**20M**

unnecessary emergency room visits in the US



## Introduction

For society to accrue the full benefit of our One Million Lives goal, it must be done sustainably, with minimum impact to the environment and society. Therefore, in 2020 we also set the goal of being Carbon Neutral throughout our supply chain on the same timescale together with goals relating to circular solutions and social responsibility.

Carbon neutral	Circular solutions	Social responsibility
Achieve a 70% reduction in carbon emissions by 2030 across: <ul style="list-style-type: none"> <li>• facilities</li> <li>• transport and travel</li> <li>• supply chain.</li> </ul> Offset any residual emissions.	Circular Materials throughout the value chain: <ul style="list-style-type: none"> <li>• Reduce, Reuse, Recycle</li> <li>• Design sustainability into new products, solutions and sales models.</li> </ul>	Implement UNGP and OECD guidelines throughout our supply chain and cascade to the next level from the largest suppliers.

### Health and climate strongly related

As described earlier, the guiding star for our One Million Lives Goal is the UN Sustainable Development Goal (SDG) 3, Good Health and Well-being. SDG 13, Climate Action, challenged businesses through their core operations and financial commitments to play a crucial role in accelerating progress towards combating climate change. Our carbon neutral goal takes up this challenge. These two SDGs and our corresponding goals are not separate. On the contrary, it is becoming increasingly apparent that they overlap.

The World Health Organization has [highlighted](#) the wide-ranging health risks associated with climate change. The Climate Impact Lab, in conjunction with the UN Development Programme, published recently a detailed [analysis](#) on one of these: heat-related illnesses. They estimated that the global mortality rate from temperature changes without mitigation would by the end of the century be similar in magnitude to the current global mortality burden of cancer or all infectious diseases equating to about eight million extra deaths per annum.

### A promising start

We have seen a substantial increase in the volume of products delivered to our customers in 2022 compared with 2019, but this has resulted in only a small increase in our total emissions.

This is because the carbon intensity of our operations (emissions/sales revenue at constant prices) are on a downward trend which we believe will continue and result in a reduction in our total emissions as several initiatives take full effect including:

- Designing sustainability and circularity into all new or replacement products. A prime example is the new version of our highest volume basic life support manikin, Little Anne, which has resulted in a 68 % reduction in emissions arising from its production and distribution.
- Creating alternative digital training solutions such as vSim for Nursing.
- Transferring to renewable energy to power our factories in the USA and Mexico.
- Redeveloping our offices and production facilities in Norway including solar panels and geothermal wells.
- Optimizing our logistics network.

We are committed to working in compliance with the Universal Declaration on Human Rights and expect our business partners and suppliers to share this commitment. To this end, we have a goal to implement all aspects of the UNGPs and OECD guidelines in Laerdal and throughout our supply chain by 2030. We assess our compliance using several tools including an annual employee survey and through regular dialogue with our employees and partners.

Sara Fossum (Sustainability Manager) and Arne Seglem Larsen (Corporate Director People & Sustainability)





# Minimizing our environmental impact

## Emission scopes

### Scope 1

Direct Emissions, including fuel combustion on site such as gas boilers, fleet vehicles.

### Scope 2

Indirect Emissions from electricity purchased and used by the organization.

### Scope 3

All Other Indirect Emissions from activities in the value-chain of the organization: including emissions associated with business travel, procurement, waste, and water.

## Carbon goals and progress

Our goal of being carbon neutral by 2030 remains paramount. We aim to maximize our Helping Save Lives goal, while at the same time reducing our carbon emissions.

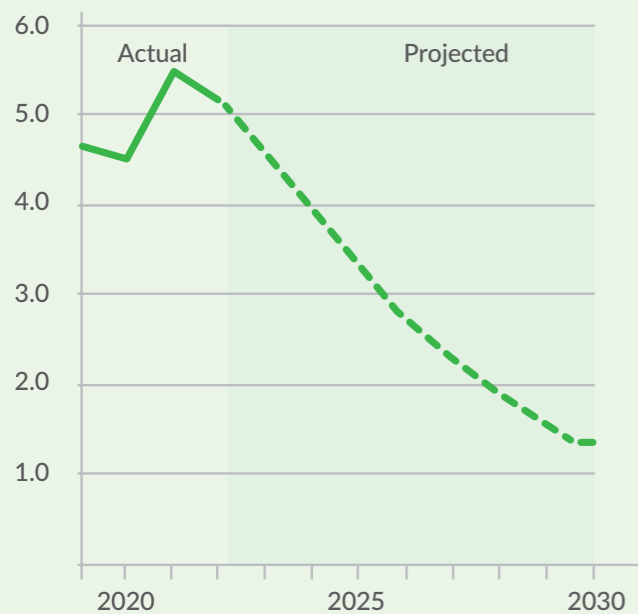
- For scope 1 and 2 emissions, where we have substantial influence, our goal is a 70 % reduction of emissions in absolute terms compared to 2019.
- For scope 3 emissions, where we have less influence, our goal is a 70 % reduction in the carbon intensity (carbon emissions relative to sales revenue at constant prices) throughout our value chain, from raw material to end customer, compared to 2019.

Any residual emissions in 2030 will be offset to reach carbon neutrality.

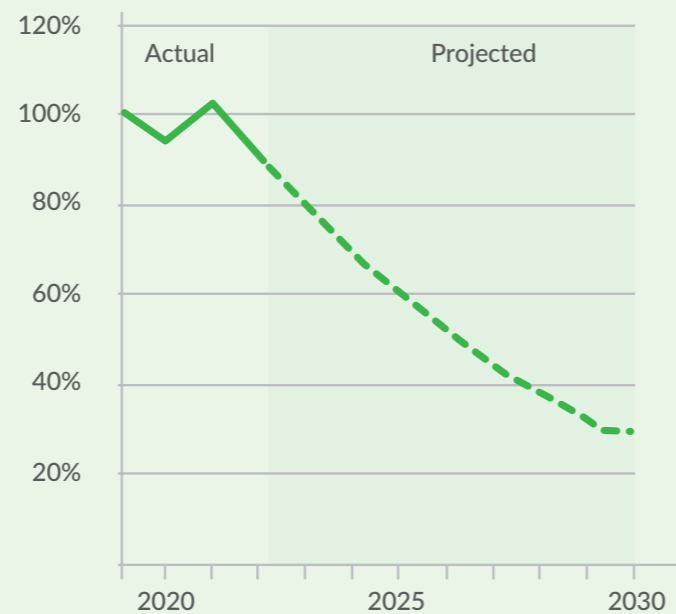
We measure and report on progress annually, in both absolute carbon emissions and carbon intensity. Our total emissions in 2019 were 69 kilotonnes CO<sub>2</sub>e (kt). By 2021, this had increased to 79 kt because of increased sales but reduced to 74 kt in 2022 despite a further sales increase because of an encouraging 10% reduction in the carbon intensity of our operations as reduction initiatives started to take effect.

The changes in scope 1 and 2 absolute emissions and scope 3 relative emissions are shown in the graphs:

Absolute emissions (kt), Scope 1 and 2



Relative emissions\*, Scope 3



\*Carbon intensity of our operations, emission/sales revenue at 2019 prices. 2019 = 100%

## Measuring to improve

We are using two tools to measure our carbon emissions which, when combined, enable us to include most of our emissions and at the same time understand them at a detailed level.

**Climate Accounting** is an input-output analysis based on financial reporting where each financial account is translated into an emission factor. This method helps us understand our emissions across countries and activities and gives us an overview of all scope 1, 2, and 3 emissions based on the UN Greenhouse Gas (GHG) Protocol. Employee commuting, use of products, and end of life emissions are excluded.

**Life Cycle Assessment (LCA)** accounts for carbon embedded in our products from raw material to product production, use, and disposal or recycling. It offers a greater understanding of emissions per product and the effect changes in components will have. In 2022, we conducted an LCA assessment on 30 products, a broad representation of our portfolio. We scaled up these findings to complement our Climate Accounting, enabling us to understand the reduction potential for our total portfolio as well as for each product.

## Developing circular solutions

To protect the environment, society needs to move towards a “circular economy” where materials flow around a “closed loop” system rather than being used once and then discarded. We work toward this mission on multiple levels:

### Laerdal Circular Model

- Raw materials**  
Minimizing input of raw materials. Using more recycled and bio-based materials.
- Recycling**  
Recycling materials internally and externally with partners.
- Residual waste**  
Minimizing waste through further developing take back schemes and designing for recycling.
- Services**  
Improving services through increased use of cloud-based support systems.



### Reduce-Reuse-Recycle

- Product Development**  
Using Life Cycle Assessment and ZeroAim tools to optimize sustainability in our product development.
- Manufacturing**  
Using renewable energy and focus on resource and energy efficiency in manufacturing.
- Logistics**  
Optimize logistics routes and modes to reduce emissions.
- Sales and user models**  
Delivering more digitized and service-based solutions, enabling more circular use models



## Sites

### Carbon goals and progress

Scope 1 and 2 emissions were 4.7 kt in 2019 from our factories in Norway, China, Mexico, and the U.S and 26 offices around the world. In 2021, these had increased to 5.5 kt because of increased output but reduced in 2022 to 5.2 kt despite a further output increase as our reduction initiatives started to come into effect.

### Reduction plan

#### Renewable energy

Transitioning towards renewable energy across all our offices and manufacturing sites. We aim to make our US factory in Gatesville, Texas, net zero on electricity with solar panels by end-2023, and our factory in Monterrey, Mexico, net zero on energy consumption by end 2025, with a positive business case after only a few years.

#### Energy efficiency

Reducing our use of energy by improving lighting, insulation, and the energy efficiency of machinery. In Gatesville, our emissions have been reduced by 92 tonnes CO<sub>2</sub>e through initiatives like this.

#### Waste, water, and chemicals

Reducing waste and water use and eliminating harmful chemicals is an important area, alongside improving our internal recycling rate. In our Stavanger site, we have internal recycling equipment enabling us to use scrap and waste from prototypes, and we have reduced residual waste from 89 tons in 2019 to 60 tons in 2022.



*Our factories in US, Mexico and China have installed solar panels covering 30-40 % of electricity supply. Also our two new buildings in Stavanger will get solar panels on the roof.*



## A home for the future

We have been in our current headquarters in the center of Stavanger for more than 70 years, but although the building has served us well it is now sub-optimal as both a manufacturing site and as marketing, R&D and administrative offices. To enhance our competitiveness and sustainability and provide a stimulating environment for our employees to work closely together and with our partners, we are making some major changes to our facilities.

Our offices are being redesigned by the award-winning architects Snøhetta and will be one of the most sustainable and environmentally friendly buildings in Norway. Energy consumption will be reduced by 70 % using solar panels and geothermal wells.

Our production and logistics departments will relocate to a new facility about 10 km away, close to Stavanger Airport. This new factory will meet Energy Class A standards supported by 10 geothermal wells, and all production activities will be in one large space considerably improving efficiency.

**70%**  
estimated reduction  
in energy consumption



## Products

In 2019, carbon emissions embedded in our products totalled 33 kt, close to 50 % of our total emissions. In 2021, these had increased to 44 kt because of increased output but reduced in 2022 to 38 kt as our reduction initiatives started to come into effect: the emissions relative to sales revenue were 3 % lower in 2022 compared with 2019.

### Reduction plan

#### Design for Reduce-Reuse-Recycle

Reducing unnecessary material, designing for increased durability, reusability, and refurbishment, and enabling recycling at end of life.

#### More sustainable materials

Replacing virgin material with low-carbon and recycled materials is a focus area. We are also investigating sustainable textile and packaging solutions by recycling polyester bottles and plastics to achieve the goals of energy saving, carbon footprint reduction, and material circularity.

#### Digitalization

The dematerialization of products through creating more digital solutions is an important factor in reducing our product-related emissions.

#### Increased product utilization and improved services delivery

Delivering more solutions in shared models and improving durability and circularity through increased services and maintenance. More digitized solutions are also enhancing durability, and functionality of physical products with additional digital functions.

### Examples of developments

**The RQI programs** described on pages 14-15 increase accessibility and utilization of the training products and improve resuscitation quality at healthcare institutions, whilst decreasing the amount of equipment required per healthcare provider.

**vSim for Nursing** described on page 17 is a classic example of a digital product, which is contributing significantly to improving the training of nursing students where education is being severely challenged through shortage of physical resources and clinical placements.

A new **Laerdal AED trainer** will be launched in 2023. As a generic AED trainer, it allows customers to buy one training model instead of multiple versions. This, together with the use of recycled material, has resulted in an estimated carbon reduction of up to 70% compared with the previous model.

**Little Anne**, our highest volume basic life support manikin, has been redesigned resulting in a 68 % reduction in carbon emissions per manikin. The product uses 59 % less material than the previous version and 60 % recycled plastics. Single-use PVC lungs are replaced by a single-use filter, and the stackable design uses less volume in transportation.

**68 %**  
reduction  
in emissions  
per manikin



Marc Saboya Feliu  
(Senior Industrial Designer)



## Logistics

Optimizing our logistics network for shipping goods from our four factories to our 26 sales companies is an important part of our strategy as it contributed 11 kt to our total emissions in 2019.

In 2021, this total increased to 14 kt because of increased output and challenges in the supply chain, including component shortages, which resulted in an increase in the use of airfreight. The global logistics challenges continued into 2022. Still, we managed a small reduction in 2022 to 13 kt despite a further increase in output because our reduction initiatives were starting to have an effect.

### Reduction plan

#### Optimizing our supply chain

Historically, we have manufactured a particular product at only one of our four factories, leading to excessive transportation demand. We are working to identify and change any suboptimal setups in our portfolio by manufacturing where appropriate in more than one factory.

#### Reducing air freight

Air freight is only used for 5 % of our products but represents over 30 % of our total logistics-related emissions. We have a goal of reducing the use of air freight to 1 % by 2026. We are well on the way to achieving this by increasing inventories and increasing lead times if agreeable to customers enabling shipment by sea.



*The vast majority of our products are shipped by sea to its destination region.*

## Travel

With offices and operations across the globe, business travel has always been an essential activity to maintain close contact with customers and suppliers. Such travel contributed 8 kt to our emissions in 2019 but went down substantially in 2020 and 2021 due to restrictions during the coronavirus pandemic.

They went up again in 2022 as traveling activities re-started but to only half the 2019 level. This was because of an improvement in virtual communications accelerated by the pandemic and a change in customer expectations regarding interactions on sales and services. The emissions relative to sales revenue have now reduced by 60 % compared to the 2019 level.

### Reduction plan

#### Virtual communication approaches internally and externally

Maintaining low travel activity by using digital communications for both sales and service support.

#### Lower and more effective business travel

Traveling by more sustainable modes where feasible and getting the most out of each trip by combining activities.



*Alf-Christian Dybdahl, CEO, in one of his video Company Updates to all Laerdal employees (initiated during the pandemic, now happening every six weeks).*



## Being socially responsible

### Delivering on international human rights

We are committed to working in compliance with the Universal Declaration on Human Rights by implementing the UNGPs and OECD guidelines in Laerdal and throughout our supply chain by 2030. These guidelines are being increasingly incorporated in national legislations, for example, the “Transparency Act” in the UK and “Åpenhetsloven” in Norway. To assure our commitment, we have developed several policies including our Corporate and Social Responsibility [\(CSR\) policy](#). We are also an active member of the [UN Global Compact Initiative](#) and the Norwegian [Skift](#) initiative.

We have developed a cloud-based, human rights risk assessment tool with [Global CSR](#). This helps us assess adverse impacts on human rights and the environment, and anti-corruption initiatives in our own business. It is being implemented at a corporate level and in other parts of the company based on risk assessment. We also require our suppliers share our commitment to business integrity and respect for human rights and have introduced the [Ecovadis](#) tool to assess standards and risks in our supplier base.

Appreciating and leveraging our differences, we strive for equity through policies, practices and resources, and an environment in which everyone feels valued and respected.

The share of female employees is presently at 43 %, a small decrease from 45 % in 2020 due to increased recruiting for software-related activities where the availability of female workers is lower. For female managers in leadership roles, we are presently at 36 %. Our goal is to have a minimum of 40 % by 2025 and will achieve this by focusing on employing and promoting women to strengthen our talent pool.

We have developed analytical tools to assure we are on track to meet our goal, quantifying the status of gender equality and the discrimination risks and barriers to equity. And through the compensation system we ensure equal pay for equal roles.

### Committing to ethics and anti-corruption

With offices in 26 countries it is important to have a strong commitment and clear standards on ethics and anti-corruption as outlined in our [Code of Conduct](#) and in strict accordance with national laws.

The Code relates to activities within our organization and towards our environment and invites discussion of concerns to ensure everyone works according to the standards. For those who would like to be anonymous, we have for some years had a [whistle-blower line](#). This line is operated independently by the management consultants, PWC, to secure maximum protection for the whistle-blower.

We work hard to assure all employees understand our values and code of conduct, and it is an important part of the onboarding process for new employees.

*The global Laerdal team counts 2,000 members, working across 26 countries. At our headquarters in Norway, 50 nationalities are represented, including from the left : Anthony Durham (US), Sandra Pourfard (Iran), Hanne Bratland (Norway), Cecile De Sordi (France), Razali Sabaruddin (Indonesia), Sujita Mainali (Nepal), Yu Huang (Taiwan), and Eivind Løland Reiersen (Norway).*





# 92%

of Laerdal employees took part in our annual engagement survey

# Top 10%

of 350 clients with 5 million employees worldwide

## Engaging with our employees

We conduct an annual survey to understand our employees' perspective on topics of importance to them and the company. The January 2023 survey, conducted in conjunction with the Nordic research company, Ennova, had a 92 % response rate and an overall engagement rate, which include all relevant questions related to loyalty, satisfaction and motivation rate, of 83 %. This was rated by Ennova as being in the top 10 % of 350 clients with 5 million employees that they surveyed worldwide.

The overall score and participation rate are very satisfactory, but there are still some post-pandemic challenges. The statement with the lowest score was "In Laerdal, it is easy to find out who is responsible for given tasks." Improvement is required here, as it could impact cross-department collaboration.

### Laerdal Impact Awards – Sustainability

We have also engaged with our employees to improve our environmental and social initiatives. In 2022, we held our 2<sup>nd</sup> Annual Impact Awards to identify, recognize, and promote sustainability-related initiatives. Out of 26 applications, involving more than 100 employees globally, we had one winner in each of the following categories:

- Net Zero Sites & Reduced Travel: Gatesville and Monterrey
- Best-in-Class Logistics & Transportation: Stavanger
- Minimized Product Emissions: AED trainer



## Working with our suppliers

Almost half of our emissions are related to products and components. A key focus has been to assure that all our partners, including suppliers, understand and share our goals for reducing emissions and the importance of being socially responsible employers.

To assure clarity in our expectations, we have updated our Code of Conduct for Business Relationships with a clear focus on our commitment to working according to the UNGPs and OECD guidelines. We expect our partners to share our commitment and work according to these guidelines, conducting regular impact assessments of their activities.

### Laerdal Supplier Sustainability Awards 2022

We recently launched these awards as part of our own commitment to sustainability and to emphasize the importance we place on working with organizations that share those same commitments. We received 32 applications from suppliers, and it was especially rewarding to see both small and large companies applying. Winners were selected in the following categories:

- Social Impact Award: ATEA
- Environmental Impact Award: SP Moulding



Happy winners of the 2022 Impact Awards



# A shared goal for 2030

The progress reported has been made possible thanks to collaboration with our partners including:

American Heart Association

RQI-Partners

National League for Nursing

Global Resuscitation Alliance

Resuscitation Academy

British Heart Foundation

Wolters Kluwer

SAFER

Nepal Medical Council

Indian Nursing Council

World Federation of Societies  
of Anaesthesiologists

Gordon Center for Simulation  
and Innovation in Medical  
Education

American Academy of Pediatrics

International Confederation  
of Midwives and a number of  
national midwifery associations

Latter-day Saint Charities

Global Financing Facility /  
World Bank

Global Health Media

NORAD

USAID

Jhpiego

UNICEF

UNFPA

PATH

Save the Children

Safer Birth R&D consortium

Saving Little Lives consortium

Médecins Sans Frontières

Norwegian Church Aid

World Health Organization

International College of Nurses

The Bill and Melinda Gates  
Foundation

Haydom Lutheran Hospital

Aastrika Foundation

International Federation  
of Gynaecology and Obstetrics

Red Cross  
Red Crescent Societies

