



FLYING DOCTORS NIGERIA

November 2022

# MEDICAL SERVICES REPORT FOR THE OIL AND GAS INDUSTRY

“The Latest Healthcare  
Innovations in Software,  
Telemedicine and Emergency  
Care to Keep Oil  
and Gas Workers Safe in Their  
Workplace”



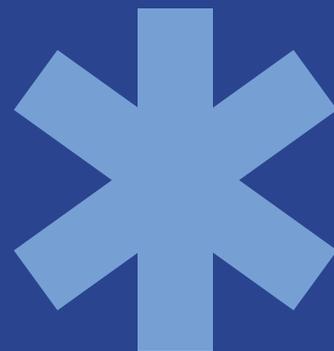
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# ABOUT FLYING DOCTORS NIGERIA

**Flying Doctors Nigeria** is a tech-enabled global marketplace for **urgent/emergency medical care**. We specifically serve the oil & gas, mining and international insurance industries.



## WE OFFER THREE MAIN SERVICES:



### MEDICAL TRANSPORTATION

Air and ground ambulance services, medevac and emergency assistance services;



### VIRTUAL CARE

Diagnostics/consultation and clinic management services;



**MEDICAL EQUIPMENT AND CONSUMABLE SALES/EQUIPMENT** and inventory management system through our software solutions

Our goal is to make quality healthcare affordable, accessible and acceptable across the continent by saving money, saving time and improving the quality of healthcare delivery.

We provide you with access to medical resources representing a 30% saving of the cost of running your site clinic in-house, whilst increasing quality.

Similarly, the time spent dealing with multiple vendors is saved as we offer a one-stop-shop for all medical requirements in remote/offshore settings. Our technology provides seamless top-side support and emergency medical records services which further enhance the service we can offer.

Worthy of mention here is our collaboration with one of our aviation partners Omni-Blu Aviation Services Limited to inaugurate the Search, Rescue and Surveillance Programme by the Department of Petroleum Resources.

This initiative was designed to help improve safety, operational efficiency and access to emergency medical transfer services for members nationwide to limit the number of casualties often recorded across the oil and gas industry, specifically focused on our offshore medical evacuation service. Our commitment to improving safety and providing a prompt emergency response service in the oil and gas industry is unwavering.

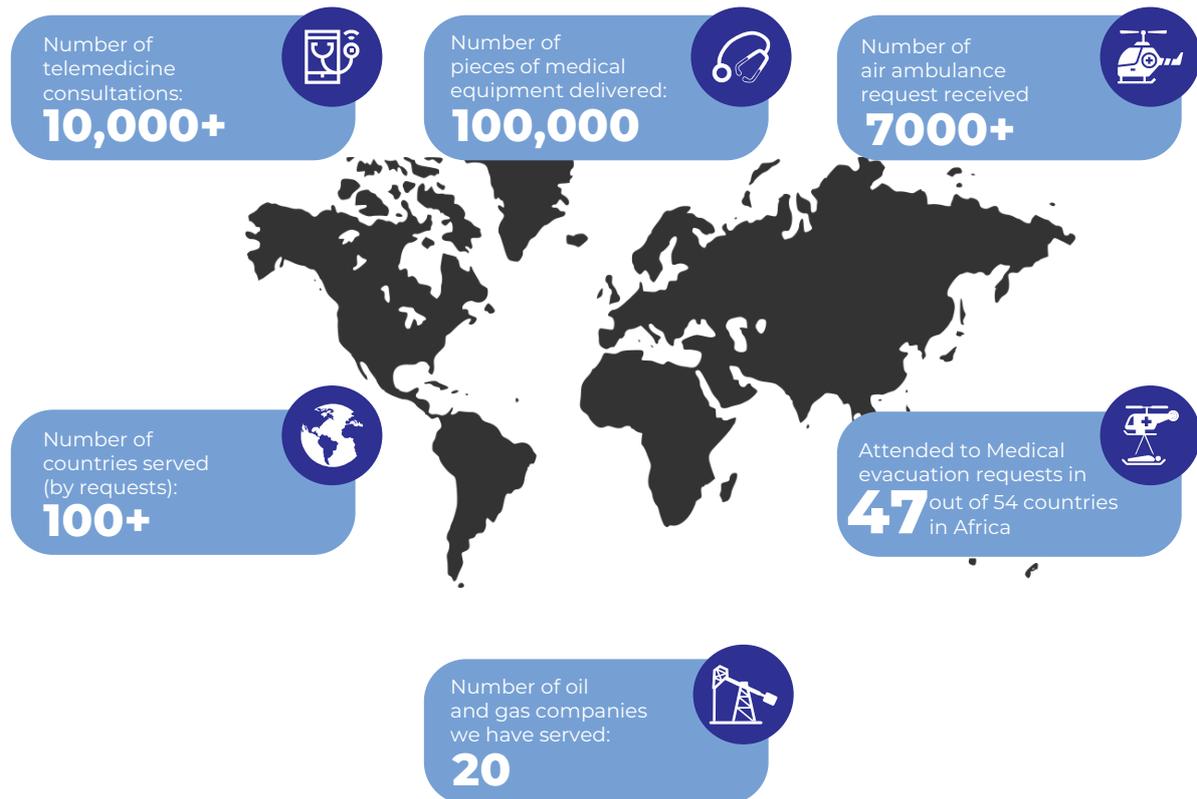
We have also provided varied solutions ranging from emergency evacuation plans/medical evacuation membership plans, to retainer plans to adapt to the peculiarity of the oil and gas industry. Our international membership program allows members to have access to advanced and definitive medical treatment at global centres of excellence across the world.

With the knowledge and terrain of both local and international markets, our membership program is a combination of

customised and flexible healthcare solutions for emergency and non-emergency medical conditions in hospitals both in Nigeria and abroad. We bring the cost of evacuation and treatment in any

hospital across the world to zero in exchange for a yearly membership fee. Want to know more about Flying Doctor Nigeria's service provision to the oil and gas industry? [Read more](#)

## Flying Doctor Nigeria By The Numbers



## CLIENTS WE HAVE SERVED INCLUDE:



# EXECUTIVE SUMMARY



## **EXECUTIVE SUMMARY**

In our work supporting oil and gas companies across Africa, we see the importance of new healthcare innovations every day. This document, the Flying Doctors Nigeria ("FDN") Oil and Gas Industry Medical Services Report, explores the impact that the latest healthcare innovations in software, telemedicine and emergency care have on people and the business.



The report provides an overview of the industry in Africa, looking at challenges and opportunities in the sector against the backdrop of a growing population and rising energy demands. The oil and gas industry is one where new innovations in medical services are known to improve access and delivery of care, thereby enhancing productivity, health outcomes and the bottom line, not just for individual companies, but also for national economies.

While there are many challenges involved in adopting the latest healthcare innovations in software, telemedicine and emergency care, the payoffs are significantly high for those companies that make this a priority. Perhaps some of the biggest challenges for oil and gas companies are finding the right healthtech and pharmitch solutions; pursuing the right partnerships; and getting the right metrics in place to ensure delivery of quality care and a safer environment.

The report also samples the opinions of medical and HSE experts within the industry in a bid to keep oil and gas workers safe in their workplace.

# INTRODUCTION



## **INTRODUCTION**

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The oil and gas industry is constantly evolving; the healthcare industry is too. This report aims to highlight some of the unique challenges that people in the industry face, particularly field workers.

We then examine how new innovations/technologies can help reduce risks, cut costs and, most importantly, improve health. We will situate all of this in the context of the history of healthcare in the oil and gas industry. The report also provides additional context in the form of expert opinions from doctors who have worked or currently work in the industry.

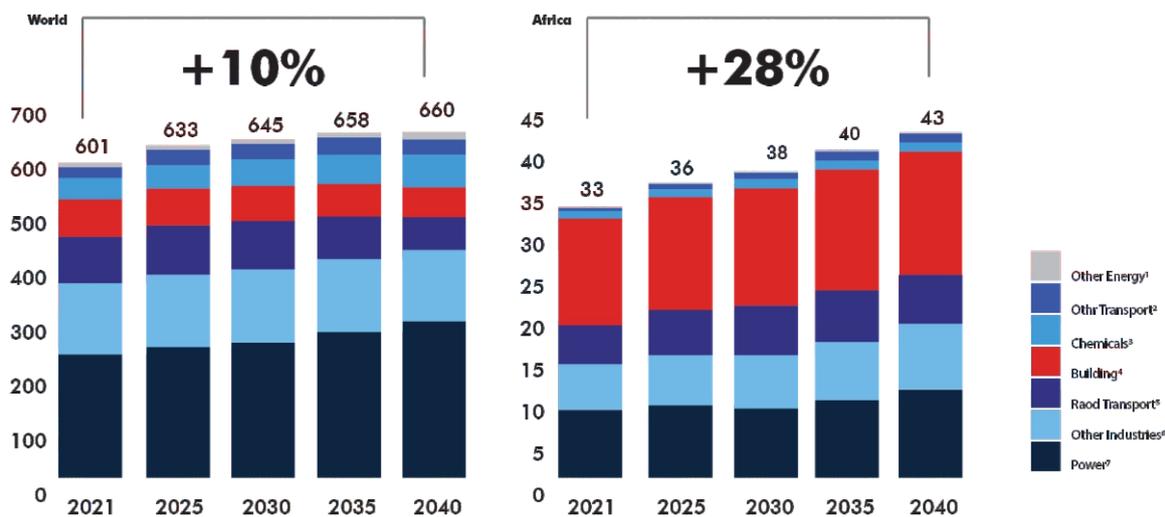
## Why the oil and gas industry is different

The oil and gas industry is a major component of the world's energy market, a global powerhouse using hundreds of thousands of workers worldwide and generating hundreds of billions of dollars globally each year. This industry plays an influential role in the global economy as the world's primary fuel source. National oil and gas companies operating in certain regions also often contribute a significant amount towards national GDP. The processes and systems involved in producing and distributing oil and gas are highly complex, capital-intensive, and require state-of-the-art technology.

According to McKinsey, over the next two decades, rapid population growth and industrialization are expected to drive strong energy demand growth across the continent—including a need for fossil fuels. McKinsey modelling estimates that African energy demand in 2040 could be around 30% higher than it is today, compared with a 10% increase in global energy demand. [Learn more](#)

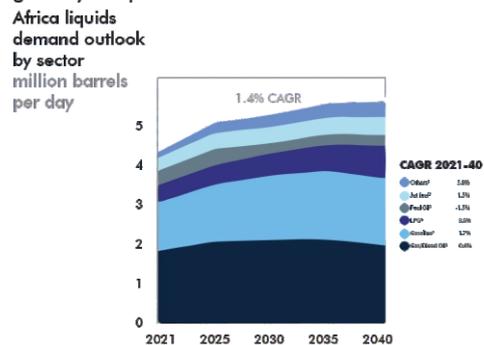
## Africa's energy demand in 2040 could be 30% higher than it is today compared with a 10 percent increase in global energy demand.

Primary energy demand by industry, million terajoules

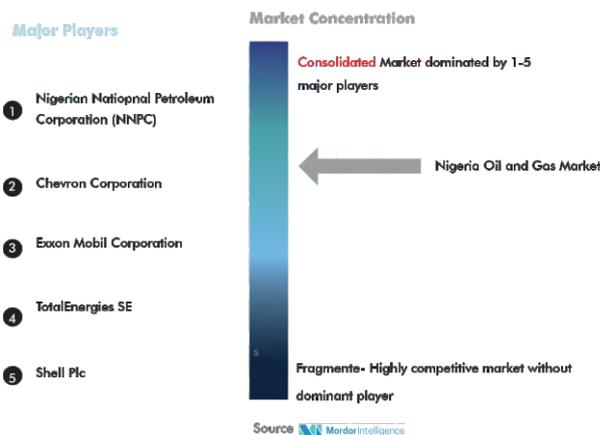


For refined petroleum products, McKinsey analysis suggests that African demand will grow from 4.1 million barrels per day today to approximately 5.3 million barrels per day by 2040, of which nearly half will need to be imported based on existing and planned refining capacity.

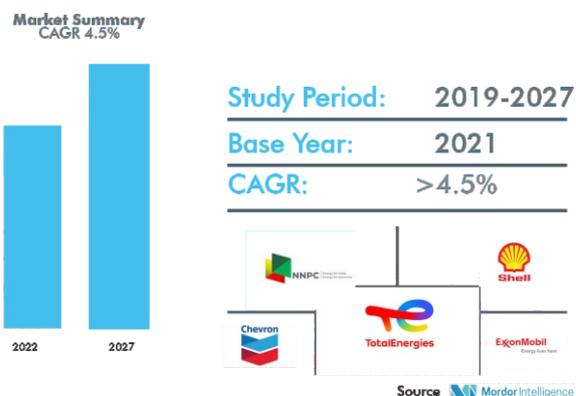
Demand for oil products in Africa is expected to grow by 1.4 percent over the next two decades



The Nigerian oil and gas market is moderately consolidated. Some of the major players operating in the market include Nigerian National Petroleum Corporation (NNPC), Shell PLC, TotalEnergies SE, Chevron Corporation, and Exxon Mobil Corporation, among others.



The Nigerian oil and gas market is expected to register a CAGR of more than 4.5% during the forecast period. The COVID-19 pandemic has significantly hampered the growth of the market, mainly due to global oil and gas demand contraction and global economic slowdown. [Read more](#)



The oil and gas industry is peculiar for many reasons. The purpose and aims of health services in the oil and gas sector are to improve performance and wellbeing of workers, and, in so doing, to manage risks to health and safety. Safeguarding and improving the health and wellbeing of staff—whether employed or contracted—is in the best interest of companies in the oil and gas industry. When companies in the industry prioritise health services for excellent productivity of workers and safety

reasons, there are direct implications for the bottom line of the company. Effective leadership around health and human performance brings significant additional value, both to people and to the company. While safety should be the centrepiece of the organisational culture of oil and gas companies, embedding healthcare concerns in a similar way is the next step.

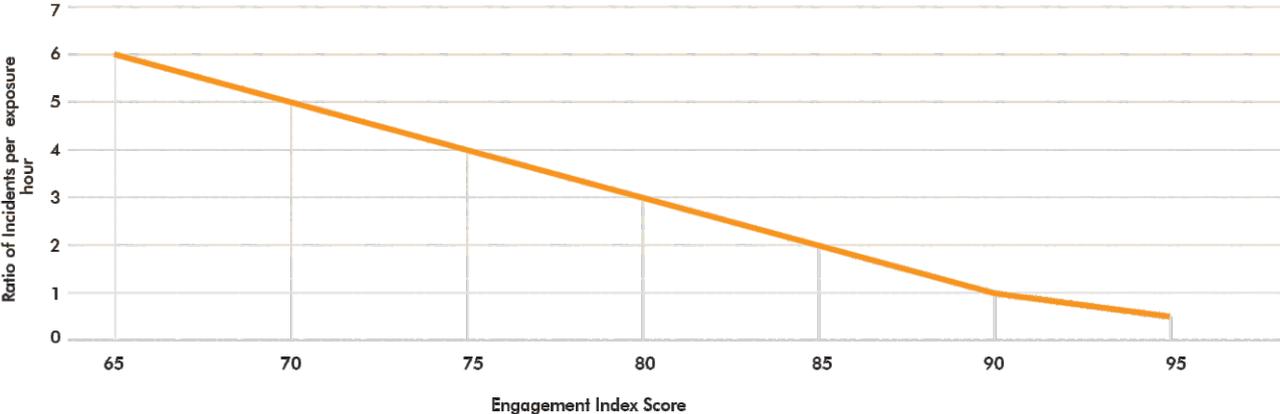
[According to the International Association Of Oil and Gas Producers, sites](#) with a well-developed health and safety culture show higher levels of

worker engagement and enjoy more sustainable health, safety, and business performance outcomes compared to others. Instilling a culture of care takes time, and is possible only with leadership commitment—from line to senior management, competent healthcare practitioners, and a mature health management system in place. [Read More.](#)

Based on a study at Royal Dutch Shell, higher employee engagement correlates with a lower ratio of incidents in the workplace.

**Why? Engagement drives better performance**

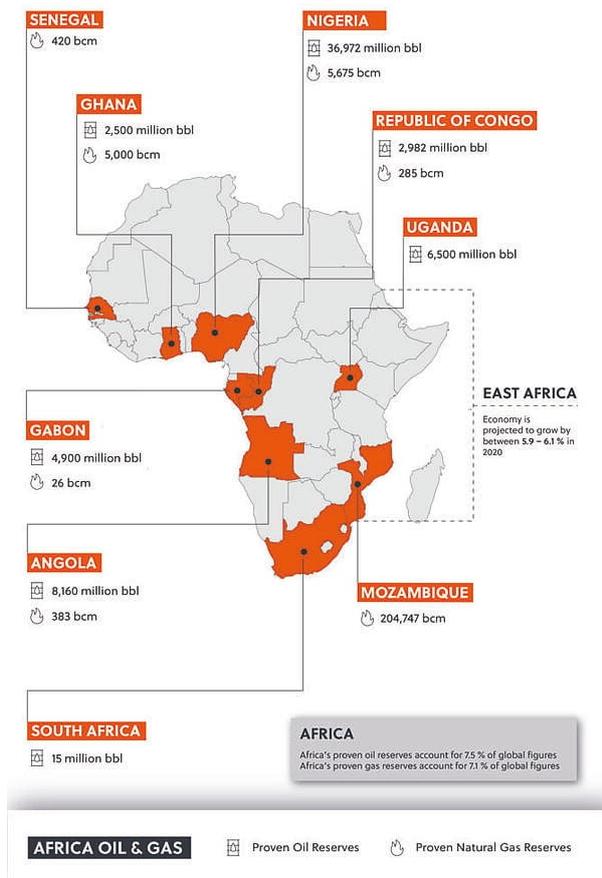
**Engagement and ratio of incidents per exposure hour**  
 A 10 point increase in employee engagement score is associated with 30-40% in the number of incidents\*



**History of Oil and Gas Medical Services**

Historically, there has been a strong relationship between the oil and gas industry and the latest developments in healthcare innovation. Indeed, healthcare innovation across the oil and gas industry has had a far-reaching impact on productivity in the industry.

Africa is an important player in world oil production, with a total share of nearly 10% in [2021](#). The major producers are Nigeria, followed by Algeria, Libya, Angola, Egypt, Equatorial Guinea, and Sudan in succession. The four major producers in Africa (Nigeria, Algeria, Libya, and Angola) together account for 77% of the continent's production and contribute 9.2% to world oil production. The map below shows all known major deposits of oil, gas, and coal resources in Africa.



Oil, Gas, and Coal Reserves in Africa  
Source: Council for Geoscience (2007).



In the earliest days of the oil and gas Industry, there was a lack of understanding of the products and their extraction. The recovery technique, storage, and handling were all hazardous processes.

Telemedicine has been a common practice in the petroleum industry for decades. Characterised originally by telephonic contacts between the offshore platforms and the onshore medical support, to today, including video conferencing and digital medical services. In this report, telemedicine in

the oil and gas Industry involves the connection between offshore and onshore medical staff through the use of communication systems, as well the distribution of medical data obtained offshore (for instance HD images or vital signs readings).

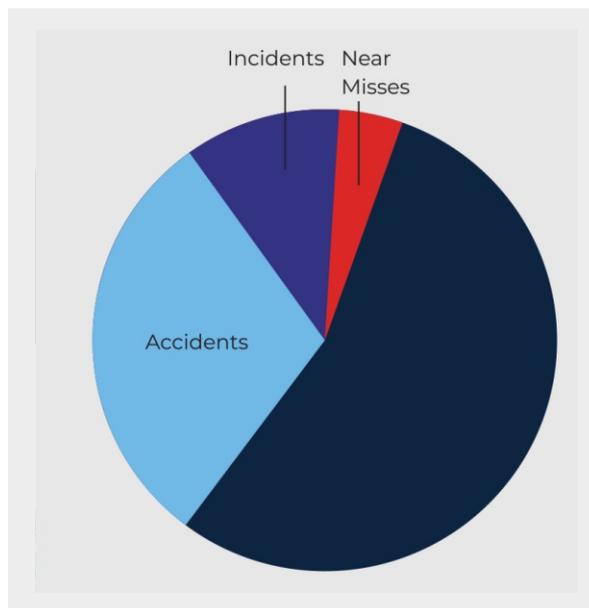
On the south-eastern Atlantic coastline of Nigerian territorial waters (1990), two well-trained industrial staff nurses, under the supervision of an experienced base doctor on-shore, received and successfully managed 1300 attendances at the off-shore clinic

within 12 months (i.e 3.6 daily for a workforce of 110). Most of the patients were treated for minor medical and surgical conditions, and emergencies were taken on-shore by helicopters for proper care. [Learn More](#)

Telemedicine continues to receive increasing attention from oil and gas companies due to its potential

advantages, reduction in the number of evacuations, shorter response times and early invitation of treatment in critical conditions.

Due to increased risk, the fall protection belt and some other safety protection harnesses were introduced to reduce accidents and incidents.. But this doesn't totally solve the problem.



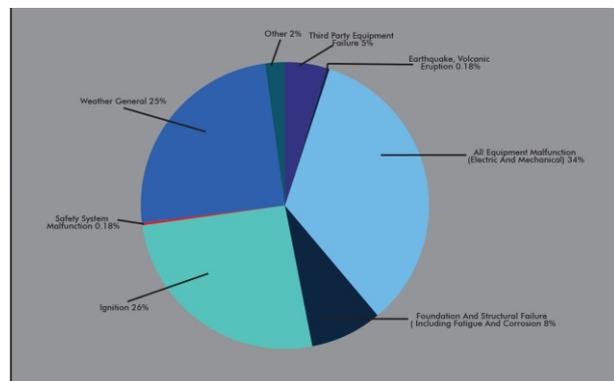
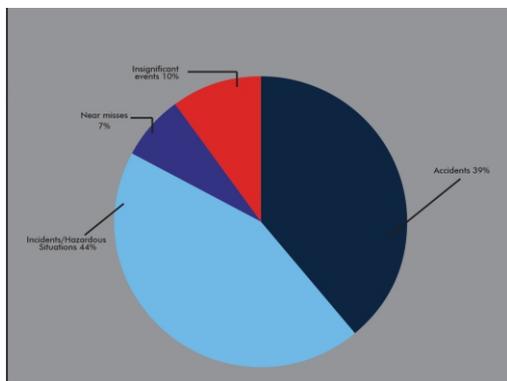
The Worldwide Offshore Accident Databank is one of the most comprehensive accident databases available. It contains 6,183 offshore accident reports from between 1975 and 2012, including accidents, incidents and near misses.

Over 60% of the data relates to incidents occurring in the northern hemisphere.

The records are classified in four categories: insignificant events; near misses; incidents/hazardous situations; and accidents. [Read more](#)

**Distribution of events by category, World Offshore Accident Databank**

**Distribution of events by type of equipment-related or natural cause, World Offshore Accident Databank**



# 10

**KEY INNOVATIONS THAT  
CAN IMPROVE THE HEALTH  
OF EMPLOYEES IN THE  
OIL & GAS INDUSTRY**

## 1. ELECTRONIC MEDICAL RECORDS

Electronic Medical Records (EMR) is the systematized collection of patient and population health information electronically stored in a digital format. [Learn more](#)

EMR systems are designed to store data accurately and to capture the status of a patient's health across time. EMR eliminates the need to track down a patient's previous paper medical records and assists in ensuring data is up-to-date, accurate and legible. It also allows open communication between the patient and the provider, while providing "privacy and security". [Find out more](#)

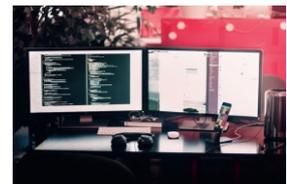
We initiated the use of an electronic medical records system for an oil and gas company in 2020. The project was a great success. It saved care providers time as they could access patient information at any location. It also improved quality of care.

## 2. TELEMEDICINE / HEALTHCARE AT HOME

Telemedicine is a method of providing medical care remotely, usually through video chat. Telemedicine offers a range of benefits for both patients and healthcare providers. [Learn more](#)

It is possible to access a wide range of care options through telemedicine services, including primary care consultations, psychotherapy, physical therapy, and even some emergency services.

Telemedicine has been common practice in the petroleum industry for decades; originally characterised by telephonic contacts between the offshore platforms and the onshore medical support, today telemedicine includes videoconference and digital medical devices. [Read more](#)



We have worked with clients in the oil and gas as well as the power industry to facilitate over 100 home healthcare visits.



We think this is a major healthcare trend that will grow exponentially over the next few years.

Over the past 10 years, Flying Doctors Nigeria has facilitated over 10,000 telemedicine consultations in Nigeria, and together with our partners, FDN will be launching the service in Zimbabwe in 2023.

From the patient's perspective, telemedicine is preferable to visiting the doctor's office due to the sheer convenience. It also improves productivity for doctors, allowing them to work remotely and review more patients within the same time period.

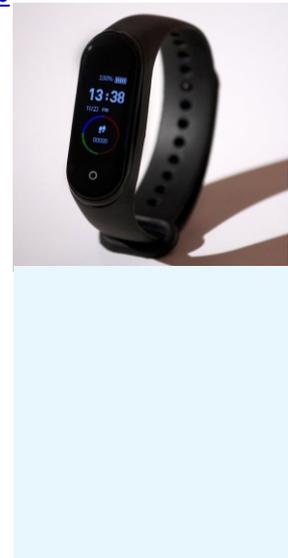
Another one of the significant trends in healthcare technology is healthcare at home. Patients and their physicians are increasingly moving care from the hospital to the "**homespital**".

Healthcare at home is one of our focus areas at FDN.

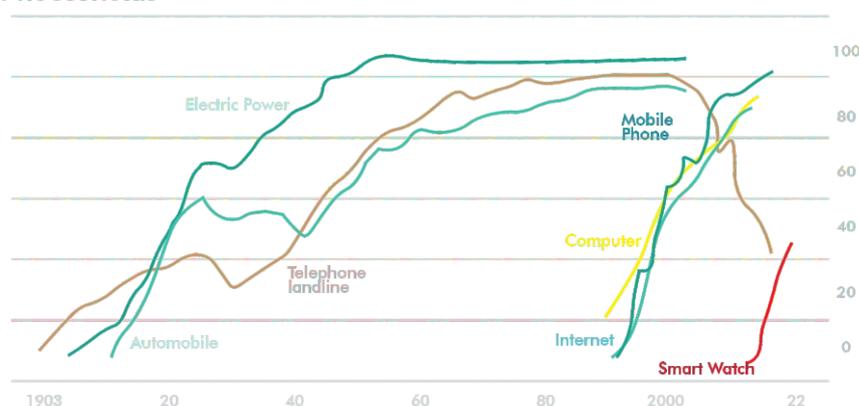
As hospitals reconsider how and where they deliver care to patients, many are seeing the hospital-at-home model as a promising approach to improve value. Hospital-at-home enables some patients who need acute-level care to receive care in their homes, rather than in a hospital, which has been shown to reduce costs, improve outcomes and enhance the patient experience. [Read more](#)

### 3. WEARABLES

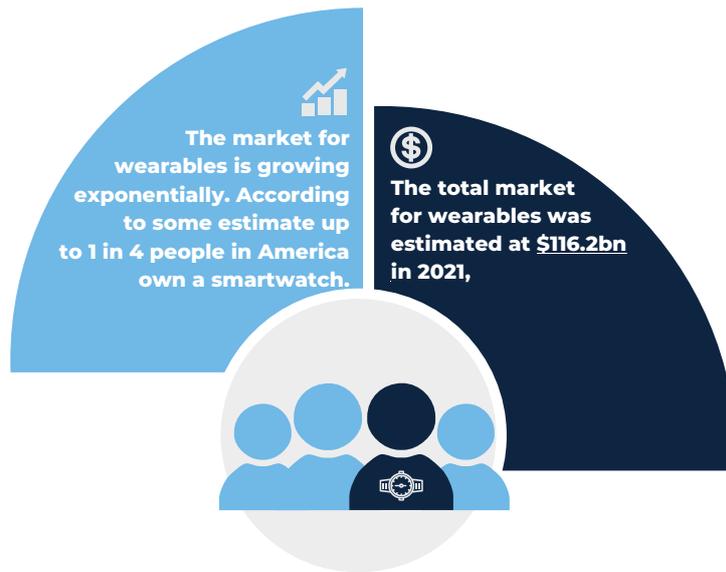
Wearables are connecting healthcare to everyday life. The concept of patients wearing devices to connect their healthcare data and treatment is not new. Diabetics wear glucose monitors. Implanted devices such as pacemakers and defibrillators provide a life-saving, intimate connection with patients rather than a device that sits on a table that needs to be connected. With the advent of smart technology that sits on the wrist, healthcare providers are able to work with their patients to gather information for their treatment, along with helping them form healthy habits in their lifestyle. [Learn more](#)



**Learning Fast**  
United State, technology adoption  
% of households



Source: Asymco: D. Comin And B.Hobijn, 2004: Deloitte  
The Economist



The market for wearables is growing exponentially. According to some estimates up to 1 in 4 people in America own a smartwatch. The total market for wearables was estimated at [\\$116.2bn](#) in 2021. Why?

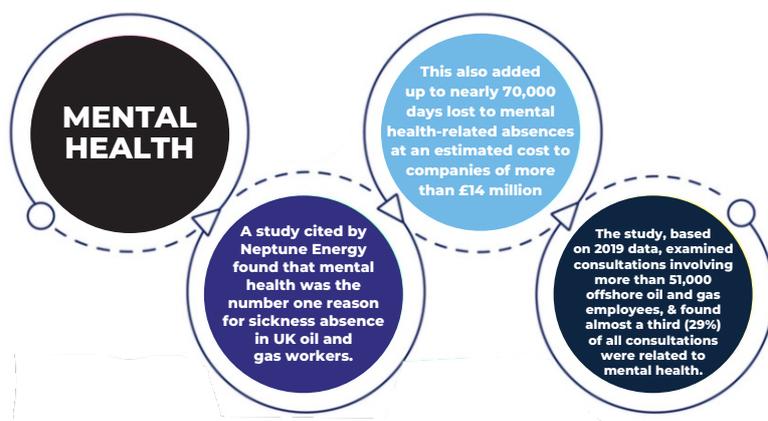
Wearables are so powerful because they are personal; they provide large amounts of real time data and they are also affordable.

[A survey](#) conducted by the Healthcare Information and Management Systems Society (HIMSS) revealed that more than half of providers found wearable technology in healthcare helpful in

monitoring their patients. They utilise commercial and personal-grade wearables to monitor health conditions and vitals, track medications, follow the recovery of post-op patients, and track sleep.

Wearables provide new and unique opportunities for engaging employees with their work and their organisational environment. The performance-related feedback these devices provide is supposed to help both employees and managers navigate the work environment more effectively. [Learn More](#)

#### 4. MENTAL HEALTH TECHNOLOGY



*A study cited by Neptune Energy found that mental health was the number one reason for sickness absence in UK oil and gas workers.*

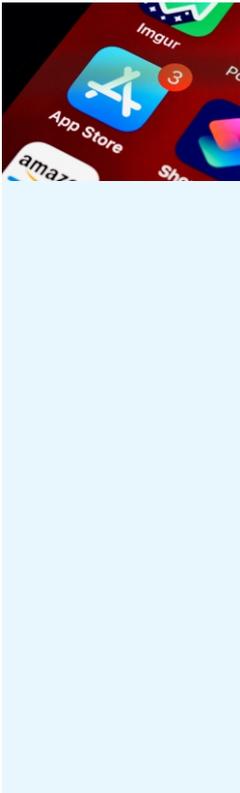
*This also added up to nearly 70,000 days lost to mental health-related absences at an estimated cost to companies of more than £14 million.*

*The study, based on 2019 data, examined consultations involving more than 51,000 offshore oil and gas employees, and found almost a third (29%) of all consultations were related to mental health. [Learn More](#)*

Technology has opened up a new frontier in data collection and mental health support.. Mobile devices like cell phones, smartphones, and tablets are giving the public, doctors, and researchers new ways to access help, monitor progress, and increase understanding of mental wellbeing. [Learn More](#)

A white paper by Mckinsey & Co explains how evidence is accumulating that digital tools can play a useful role in addressing mental health challenges in the workplace. Employers seeking to improve the well-being of their teams will benefit from learning about the solutions available and identifying suitable examples to integrate into their broader workplace support and wellness offerings. [Learn More](#)

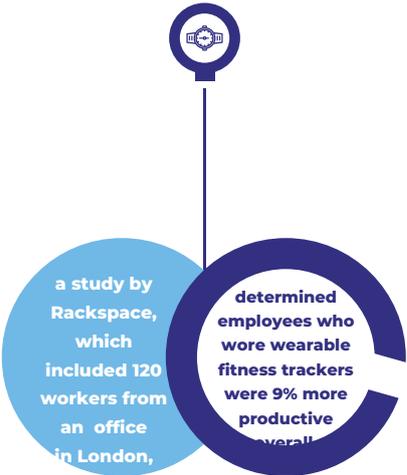
Options include providing telemedicine services for mental health consultations, as well as access to meditation apps. We have helped companies to tailor these solutions in a customised way to provide support for their team members.



**5. FITNESS TECH**

The British Journal of Sports Medicine explains how interventions using apps or trackers seem to be effective in promoting physical activity. Furthermore, a study by Rackspace, which included 120 workers from an office in London, determined employees who wore wearable fitness trackers were 9% more productive overall. [Learn More](#)

In addition to improving productivity, health wearables are also becoming an integral part of many corporate wellness plans. The devices can track employee activity levels, sleep patterns, and food choices, all of which encourage employees to live a healthier lifestyle.



Having healthy workers often means companies pay lower premiums for employee health insurance—a big financial incentive for many businesses. In fact, incorporating wearables into an employee wellness plan to increase productivity and decrease the cost of insurance is a rising trend. [Read more](#)

There are a few oil and gas companies already trialling this technology with their employees. For example, an article by Offshore Technology, [cites](#) BP as an example of a company that is encouraging its employees to focus on their health and wellness by using fitness trackers.



## **6. MEDICAL EVACUATION COVER**

Medical evacuation cover is a product that enables a company or individual to access international, domestic or regional medical evacuation by air or ground. Some products also cover the cost of in-patient care.

The advantage of these products is access to medical emergency evacuation regardless of location, and in patient care with no additional cost to the company. The costs of these products can be as low as \$600 per person per year.

Previously, companies would have to pay very high medical evacuation fees upfront (e.g., air transport from Nigeria to the UK can cost \$100,000) and in hospital treatment, the cost of which could be over \$1m for severe cases. Medevac cover helps companies obtain cost-effective, timely emergency care when employees need it the most. Medical evacuation cover is our flagship product at Flying Doctors Nigeria.

## **7. REMOTE SMART CLINICS**

Oil and gas companies typically outsource running of their site clinics to expert medical providers. This practice tends to reduce cost and improve quality whilst allowing oil and gas companies to focus on their core activities. The move from simple remote site clinics to "smart clinics" involves incorporating a whole range of technologies to enhance care at these clinics, which are often located in swamp or offshore locations. These technologies include telemedicine, electronic medical records, wearables, mental health technology, (as we have seen above) medical

equipment procurement, pharmacy management technology and stock monitoring software, precision diagnostics as well as online training for healthcare workers on the site. The FDN smart clinic solutions have been extremely successful across Africa, improving patient-centred care. Over 1000 consultations have taken place in our smart remote clinics across the country. We have operated clinics/hospitals and diagnostic facilities for the oil and gas industry in four states in Nigeria.

**8. INTERNATIONAL MEDICAL EVACUATION**

International medical evacuation in Africa is often required in order for oil and gas companies to offer their staff the highest standards of care. Our B2B platform provides evacuation services across the world. Currently we have served over 50 countries. We have also pioneered innovations in these areas, such as our offshore medical evacuation services as well as our isolation pod evacuation service—for patients with infectious diseases. Our babypod is uniquely designed using Formula One technology to keep premature infants safe during emergency medical transportation, where companies extend such coverage to families.



**9. ADVANCED CARE AROUND AMBULANCES/ SIMULATION IN TRAINING**

9. Advanced care ground ambulances/Simulation in training

Advanced care ambulances are stationed for lease or purchase at oil and gas companies in both urban and remote areas.

Technology has also revolutionised pre-hospital/ambulance care in many ways. Two of these technologies will be discussed in this report.

(a) Monitoring during transport: Many patient monitoring devices are able to monitor patients during transport, giving valuable information to the receiving hospitals.

This technology also allows receiving hospitals to provide advice to paramedics/doctors whilst patients are in transit, improving patient care through specialist input.

(b) Point of care diagnostics: Historically, blood tests, ultrasounds and other diagnostic tests had to be done in specialist labs/centres. This led to delayed diagnosis for workers in remote areas, unnecessary evacuations and limited ability to manage risk.

Point of care blood tests allow clinicians to make diagnoses in seconds. Ultrasounds can be performed in remote areas and interpreted remotely providing answers in seconds to questions that would previously have taken weeks to answer.

Use of simulation during first aid/other clinical skills training

Simulation improves the long term retention of skills during first aid and healthcare training courses. [Learn more](#)

There is an increasing amount of technology for simulation that we utilise when training our remote site teams that helps them retain their skills and deploy them effectively during emergencies.

## **10. MEDICAL EQUIPMENT ONSITE**

FDN has delivered thousands of pieces of medical equipment to nearly every state in Nigeria. We also manage the associated technology. Our first aid and life support courses are also highly rated and receive excellent feedback.

Site clinics have gone from small, undeveloped rooms with a single first aider to fully equipped, multidisciplinary hospital facilities.

Point of care diagnostics, vital signs monitoring, airways, oxygen, smart procurement software and life-saving equipment such as defibrillators transform site clinics providing high level stabilisation during emergencies. This is augmented by telemedicine.



# EXPERT OPINION



“The two areas of innovation I am most interested in are telemedicine and electronic medical records. Telemedicine allows our employees to consult with a wide range of specialists from the comfort of their homes whilst the electronic medical records systems allow us as doctors to view medical records from any location. Both of these technologies lead to higher standards of care for patients”

- *Dr Mohammed Zango*  
*Head of Medical, NNPC*



“Provision of healthcare at home augmented by telemedicine has helped us provide a high quality, convenient service to our patients. We ensure that medicines and diagnostic services are also provided at home, this gives a seamless, patient-centred healthcare experience.”

- *Mr Babatunde Odemuyiwa*  
*QHSE Manager (Nigeria and Ghana), Siemens Energy Limited*



“Telemedicine and electronic medical records were key innovations that helped us weather the COVID-19 pandemic, and since then we have kept them working and adapted them to our day to day practice.”

- *Dr Basu*  
*Indorama Petrochemicals*



The challenges faced during the pandemic have motivated us to sharpen tools, and optimise existing capabilities and capacities. In the oil and gas industry, for example, advances made in the practice of telemedicine have changed the way we look after the health of personnel assigned to work offshore and at other remote sites. Through the deployment of innovation/technology, today we are able to provide more robust topside support to the site medical personnel, including real-time specialist opinions. This, of course, has enhanced prompt decision-making and interventions leading to improved outcomes with regards to health, operations and cost.

- *Dr Uche Okorochoa*  
*Former Health Advisor; Sub-Saharan Africa, Schlumberger*



“One of the areas we have innovated in is diagnostics. Building our own laboratories has helped us manage quality and speed up test results leading to faster diagnosis. We have also invested in telemedicine which further enables us to ensure that we can deliver care in a way that is convenient for patients across different locations seamlessly”

- *Dr Okuns Ohiosimuan*  
*Corporate Medical Services Manager/CMO, NLNG*

# CONCLUSION

This report starts by tracing the history of medicine for the oil and gas industry.

We then go on to list 10 key innovations that are transforming healthcare in the oil and gas industry. These innovations include mental health technology, smart remote clinics, telemedicine and medevac cover.

The second part of the report showcases expert opinions from sector leaders.

As the energy industry continues to evolve, we anticipate a continuing need for support by the renewable energy industry. For example, offshore and onshore wind farms in remote locations.

We trust that this has been an informative summary of some of the technologies used at Flying Doctors Nigeria that we believe improve employee healthcare in the oil and gas industry. We believe that these technologies create a safer energy industry for all employees.

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