Healthcare market report

Moving beyond the pandemic

In the past year spending on healthcare, and on medical gases, has fallen, having climbed steeply as a response to tackling the Covid-19 crisis, writes **Maura D. Garvey**

In the sixty-year period from 1960 to 2020, growth in national health spending was consistently positive and greater than inflation in the wider economy. This means that for six straight decades there was a continual increase in real US health spending.

It has held true even in historical periods of very high inflation in the US, indicating that healthcare's overall cost burden has increased relative to consumer purchasing power and has taken up an ever-larger share of US GDP and household income.

So let's start here and say: 2021 was notable. For the first time in a long time, in 2021 real healthcare spending growth was flat. And in the first quarter of 2022, real healthcare spending went further into reverse and shrank by 1.7% year over year. This is seven full percentage points lower than the long-term real healthcare spending average of +5.3%. This has resulted in a health spending decline as a percentage of US real GDP: it fell from a peak of over 20% in mid-2020 to 18% in May 2022, while overall US economic growth has rebounded much faster than health spending post 2020.

At the same time, unprecedented demand on the medical system and medical oxygen continued during 2021 and 2022 as new variants caused new outbreaks. Real GDP fell during 2020 due to the closure of many parts of the economy, rebounded 5.7% in 2021, but dropped off in 2022, the data is so far showing. The US economy grew an annualized 3.2% on quarter in Q3 2022, rebounding from two straight quarters of contraction.

This coming together of a slower rebound in healthcare expenditures alongside rapid economy-wide inflation has resulted in a surprising reversal in healthcare's real spending growth over the past year. While it is a notable decline for now, many of the drivers of this trend are expected to be short-lived.

The American Hospital Association (AHA) expects that "when final US Center for Medicare and Medicaid Services (CMS) national health expenditure data are released for 2021 and 2022 they will likely show a meaningful dip in the real long-term health care cost trend, at least temporarily alleviating some of the spending pressures that occurred in 2020 due to the COVID-19 pandemic."

We last reported on the US healthcare market in February 2022 (see "Covid pandemic continues to drive up demand for oxygen and US healthcare costs" **gas**world US Edition, February 2022, p. 28). But what a difference a year can make. We also reported on how diligently this industry has supported the healthcare system through the pandemic, ensuring hospitals received the therapeutic oxygen required to treat Covid-19 patients. The industry also supported the medical gas systems and their design, and these are critical to the life support of patients served. Major industrial gas companies continue to prioritize the supply of oxygen and the essential medical gases to support hospitals and medical professionals by proactively working to understand and meet medical gas supply needs.

The supply of medical gases

Hospitals, homecare, out-patient surgical care facilities, nursing homes, and ambulances all provide medical care while industrial gas companies support the healthcare field by providing life-giving gases to support medical care.

Medical gases also serve a vast array of gases sold to pharmaceutical and biotechnology companies.

Which gases are front and center? The healthcare market for the industrial gas industry has been characterized by gas producers and distributors that supply oxygen, nitrous oxide, anesthesia gases, special mixtures, medical air, and related services. Today's healthcare market goes beyond these traditional market

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definitions and includes an array of new gases related equipment and to healthcare technologies, including a broadening of the fast-growing respiratory therapy market and cryotherapy.

So there is a wide assortment of medical and specialty gases, supplied from different sources, and often requiring very high purity and sophisticated equipment, being used in healthcare markets. Air gases are produced in ASUs or with generators. Of these, oxygen is used widely for respiratory care both in institutions and in homecare settings. Nitrogen is used in biomedical applications for freezing specimens, and argon is used pure and in mixtures for hospital analyses and quality control. Carbon dioxide, sourced as a by-product from other product processes such as ethanol, ammonia, refining, and more, is used in surgical procedures. And helium, which is sourced primarily from natural gas streams, is used to cool the magnets in magnetic resonance imaging (MRI) machines and other equipment, for hospital analyses and quality control, and in respiratory gas mixtures.

Pharmaceutical and medical gases are fluids manufactured specifically for the medical, pharmaceutical manufacturing, and biotechnology industries. They are frequently used to synthesize, sterilize, or insulate processes or products which contribute to human health. Gases commonly used in the pharmaceutical industry include nitrogen for inerting or flushing, air for flushing, oxygen for

fermentation, and carbon dioxide for extraction and purification.

Carbon dioxide is also used throughout the pharmaceutical market. For instance, incubators use CO_2 in the gas phase. CO_2 is applied in the production of supercritical fluid chromatography, or in the pH control of wastewater. And one of the most important responsibilities that a biotech or life sciences lab or facility manager has is keeping a close watch on cryogenic freezers, CO_2 incubators, and mass spectrometers, along with the critical biological samples stored inside. Wireless telemetry is therefore critical for the supply of gases. Often, these samples are the result of decades of research and have the potential to lead to a groundbreaking discovery or drug, or even a cure for chronic illnesses, infectious diseases, and more. If these valuable cells were to die suddenly and unexpectedly, it may mean the loss of not only a lifetime's worth of work but also millions of investment dollars.

It's worth reminding ourselves that the US spends more on healthcare as a percentage of real GDP than any other country. By working strategically and tactically within medical market segments, the industrial gas industry has been able to tap into this enormous market with expanded product and service offerings, even in recessionary periods. A look at the industrial gas industry's past year of activities in medical markets shows there has been continued growth in 2022. Let's now dive into some of those finances.

US healthcare industry trends

Healthcare expenditures for 2022 included all costs for private and public health services as well as supplies and investment in research, structures, and support. The US spends almost twice as much per person ($12,914 per person in 2021) and devotes 50% more of its gross domestic product (GDP) than the other major industrialized countries, according to the Organization for Economic Co-operation and Development (OECD). According to CMS estimates, hospital care (31%), physician and clinical services (20%), and retail prescription drugs (9%) comprise 60% of total US healthcare spending. The remaining 40% is comprised of services such as other health, residential, and personal care services, nursing care facilities and continuing care retirement communities, dental services, home healthcare, other professional services, and durable and non-durable medical equipment products. Healthcare spending by major sources of funds includes private health insurance (28%), Medicare (21%), Medicaid (17%), and "out-of-pocket" (10%).

As shown in figures 1 and 2, US healthcare spending increased 5.7% to reach $4.45 trillion in 2022, which was a faster rate than the 5.1% increase seen in 2021. The acceleration in 2022 was due to the continued increase in federal expenditures for healthcare that occurred largely in response to COVID-19, as well as inflation having a say. In this period,

Figure 1. Sources: CMS, US BEA, and Intelligas Consulting estimates

US healthcare (HC) spending as percent of GDP 2017 – 2022 (Est) US ($Trillion)						
Item	2017	2018	2019	2020	2021	2022 Est
GDP (real)	19.5	20.5	21.4	21.1	23.3	25.2
Total HC expenditures	3.5	3.6	3.8	40.0	40.2	40.5
Percent spent on HC	17.9%	17.8%	17.8%	19.0%	18.1%	17.7%

According to CMS, national health expenditures are projected to grow at an average annual rate of 5.4% for the period 2019 to 2028 to reach $6.2 trillion by 2028. Because national healthcare expenditures are expected to grow 1.1 percentage points higher than GDP per year, the share of the economy will rise to 19.7% in 2028.

Figure 2. Sources: CMS estimates

Percent growth Total US HC expenditures 2017 AND ESTIMATED 2019 –2028							
	2017	2018	2019	2020	2021	2022 Est	19 – 28 Est
Growth/year	3.9%	4.5%	4.5%	5.2%	5.1%	5.7%	5.5%

The outlook for national health spending and enrollment over the next decade is expected to be driven primarily by key economic factors, such as growth in income and employment, and demographic factors, such as the baby-boom generation continuing to age, and a move from private insurance into Medicare. Spending will also be driven by increases in prices for medical goods and services.

GDP increased 8.1%, so the share of the economy devoted to healthcare spending declined from 19% in 2020, reaching an estimated 17.7 percent in 2022. As mentioned earlier on, growth in national health spending has always been positive and greater than economy-wide inflation. But, for the first time, in 2021 real healthcare spending growth was flat, and in the first quarter of 2022 real health care spending shrank by 1.7% year over year. This has resulted in a health spending decline as a percentage of real GDP.

Industrial gas player trends

The US industrial gas healthcare market represents an estimated 12% of the US industrial gas business and is estimated at $3.2bn in 2022 compared to $2.7bn in 2017, indicating an average annual growth of 2.8%. The estimated value of the business includes the traditional institutional gases and services as well as homecare services in which some in our industry participate, such as Linde, which owns Lincare. It excludes homecare service providers outside our industry such as Apria. Our industry plays a lesser role in the healthcare business in the US than in the rest of the world because of the highly specialized and costly nature of the US healthcare business.

Within the US healthcare market, the two industrial gas companies with the largest participation are Linde plc and Air Liquide.

Linde's strategic acquisition of Lincare, and its merger with Praxair with PDI in 2019, has kept it in the top position, with a share that is more than 10% greater than Air Liquide. Air Liquide's acquisition of Airgas in 2016 moved it from the number-four player to the number-two sales position in the US. Messer/CVC, which purchased the divested US Linde assets in the merger, AP, and Matheson (MTG) are suppliers of bulk gases in the US institutional market as well as high pressure cylinders into secondary care facilities. As part of the Airgas acquisition, Air Liquide was required to sell of 18 air separation units and 2 nitrous oxide facilities by the US Federal Trade Commission. Those assets went to Matheson.

The US is also home to large and growing biotechnology and pharmaceutical markets, and distributors are looking at these segments for continued growth and investment. Many US distributors have deep penetration in US medical markets.

Looking ahead

The healthcare market represents an estimated 12 % of the US industrial gas business in 2022, or $3.2bn. It is a core segment for industrial gas companies and distributors in the US.

> "gas healthcare market represents an estimated 12% of the US industrial gas business"

The pandemic of course thrust our industry into the forefront of this crisis as suppliers of critically needed medical oxygen. While the pandemic increased healthcare spending, it temporarily represented a smaller share of GDP due to economy-wide inflation. As we come out on the other side of this pandemic, US spending on traditional medical gases will be steady, while growth should be faster in the pharmaceutical and biotechnology markets. The overall growth of the healthcare market in the industrial gas will remain strong. gw

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Figure 3. Sources: CMS and Intelligas Consulting estimates

US industrial gases HC as percent of total HC 2017 – 2022 (Est) US ($Billion)						
Item	2017	2018	2019	2020	2021	2022 Est
Total US industrial gas HC	20.7	20.8	20.9	30.0	30.1	30.2
IG % Total HC expenditures	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

As shown in Figure 3, we at Intelligas Consulting estimate that the US healthcare business is gases, including our industry's participation in the institutional, homecare, and specialized services segments in the US, will be $3.2bn in 2022. The estimated value of the business takes in the traditional institutional gases and services as well as homecare services in which companies in our industry participate. The industrial gas industry's position in US markets has been growing in some areas, such as pharmaceutical and biotechnology, but has been slower in other traditional medical uses. Industry organizations like the Gases and Welding Distributors Association (GAWDA) and the Compressed Gas Association (CGA) are helping distributors and manufacturers to establish strategies that help this medical gases space to grow.