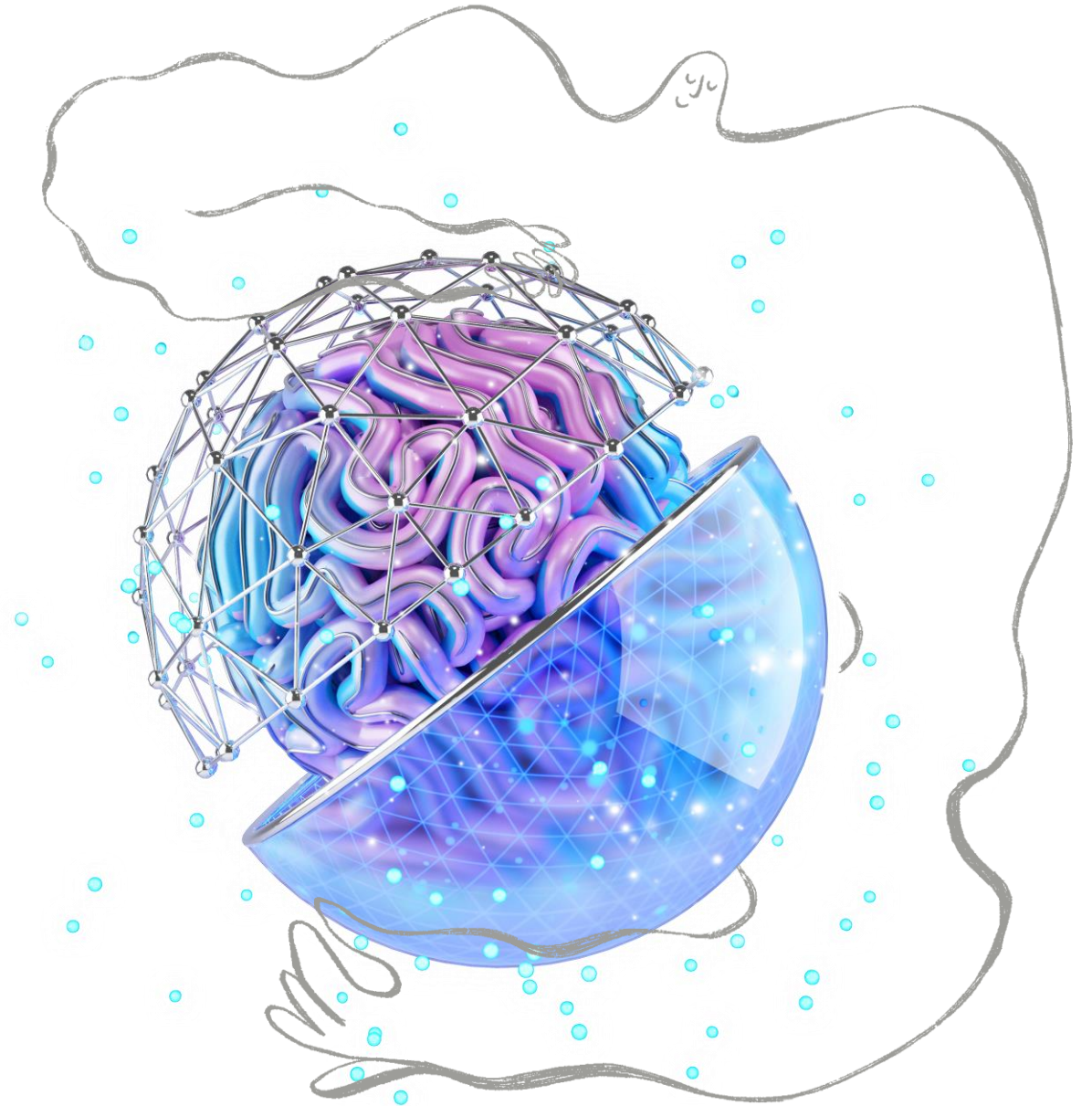**Deloitte.**
Digital

August 2022

Phygital Patient of the Future

How digital will shape
the next generation patient

The era of accelerated digitalisation is over
What comes next in the post-COVID times?

Almost no other area in healthcare offers so much potential for increasing process efficiency, for improving medical quality as well as patient safety, and finally, for achieving sustainable economic success, as digitalisation.

The COVID-19 pandemic has turned the health care system upside down and forced healthcare providers to rapid digitalisation. Digital health has become the buzzword of the pandemic and we witnessed many healthcare providers introducing the **newest technologies and digitalizing processes to optimize and improve healthcare delivery**. Self-service tools, Internet of Things or remote patient monitoring have reached an unprecedented level of adoption. Telemedicine was no longer an option, but an urgent need to overcome problems with face-to-face contact. Launching new forms of contact took days, instead of months. For many healthcare providers that time was a test of their ability to quickly respond to change.

However, **the phase of accelerated patients' digitalisation is long gone**. The hype around COVID-19 impact on the society's digitalisation made us think about **the long-term impact of the pandemic on the usage of digital tools by patients**. Healthcare providers moved rapidly to deploy digital technologies, but will the investment meet the expected demand?

To investigate the impact of COVID-19 on people's wellbeing and healthcare behaviours and preferences, we conducted **a study on 11 markets in Europe.**

Our research allowed us to define two post-pandemic patient personas, representing their healthcare and digital behaviours: Traditional Patient, occasionally using digital channels – up to 4 applications (comprising 49% of the society), and Phygital Patient – a digital heavy user, but also prone to use traditional channels (comprising 15% of the society).

Despite the significant share of Traditional Patients, we can expect that the **patients' behaviour will evolve towards Phygital Patient** in the future. Phygital is a mix of two words - physical and digital, representing the convergence of physical and digital perspective.

The report presents **key characteristics of the Phygital Patients**, reflecting their behavioural patterns, specific needs and barriers in taking care of their health, thus representing guidance for the healthcare providers on how to win their love and engagement. The insights shed a light on whether the COVID-19 changes will be temporary or enduring to support healthcare providers in the right investment decisions for unlocking digital health potential.

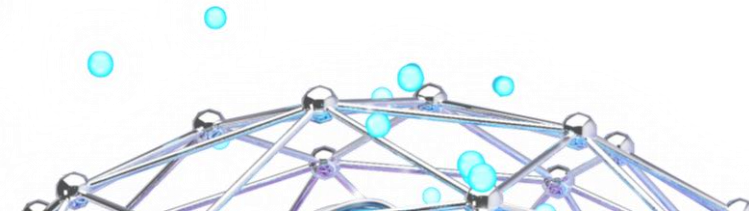**Krzysztof Wilk**
Partner
Life Sciences & Health Care
Leader PL

Paweł Kuśmierowski
Partner Associate
Life Sciences & Health Care
Consulting Leader PL

Ibo Teuber
Partner
Health Care Consulting Leader DE

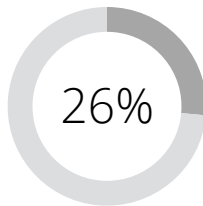**Thibault Ducarme**
Partner
Life Sciences & Health Care
Leader FR

Key findings from the study

How Phygital Patient outpaces Traditional Patient?
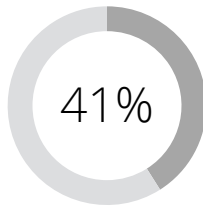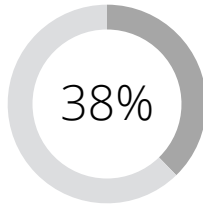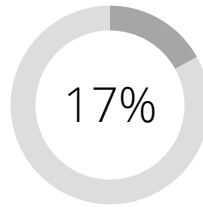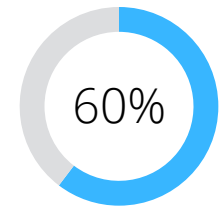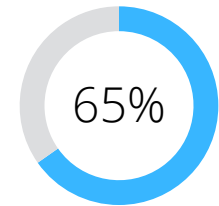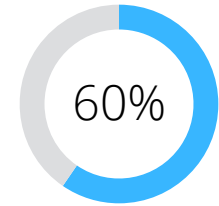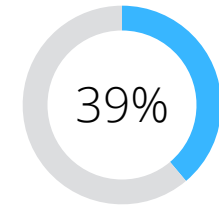
TRADITIONAL PATIENT		PHYGITAL PATIENT
17%	Preference towards **virtual doctors' appointments**	39%
38%	**Trust in Big Tech** companies to share medical records	60%
41%	Taking care of **mental health**	65%
26%	Usage of **applications and devices for chronic disease** tracking	60%

Phygital Patient
of the future

Five key characteristics that define the future patient archetype
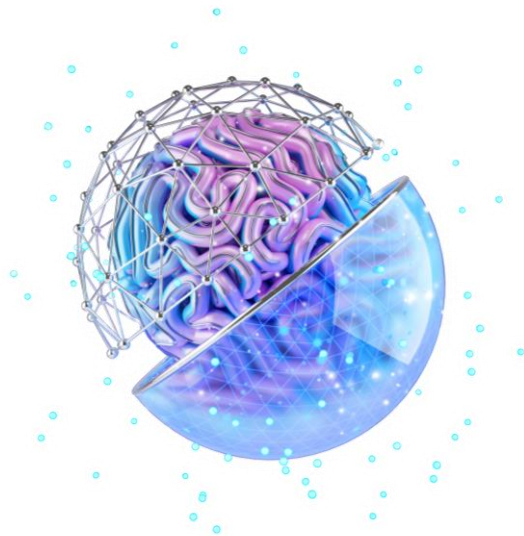
01.

Phygital Patient uses digital solutions to take care of health but is conservative when it comes to the diagnosis stage

Phygital Patient is most eager to use digital channels before and after the appointment (35% and 31% respectively), thus these stages have the highest potential for digitalisation. Patients clearly favour being consulted and examined in person: 65% of all respondents declared that they prefer physical doctors and medical professionals' appointments and 61% of them want to be diagnosed personally.

02.

For Phygital Patient the main driver to share medical data is concern for their health, followed by financial incentives

The most important factor for Phygital Patients to share their medical records with mobile applications is the reduction of risk related to serious diseases in the future (49%). Financial benefits are also an effective incentive, as discounts on private and public health care insurance (stated by 42% and 41% of respondents) are commonly praised.

03.

Phygital Patient manages their health more actively when encouraged by digital solutions

The most important motivator for all respondents to be more caring about their health is convenient access to healthcare professionals (declared by 41%). However, for Phygital Patients digital factors play a more significant role – among the most powerful motivators were one app aggregating multiple functionalities (51%), having a wearable (47%), and doctors examining medical data from the app (45%).

04.

Phygital Patient equally takes care of their mental health as their physical health

Phygital Patient not only takes care of their physical health but is also concerned about mental-related problems – 65% of them indicate mental health as a meaningful aspect of their routine, which is 1.6x more than in the case of Traditional Patients. Phygital Patients intuitively care for mental health by performing activities that prevent mental-related problems, such as maintaining relationships (91%), finding time to relax (79%) or pursuing a stress-free lifestyle (46%).

05.

Phygital Patient with chronic diseases is open to digital solutions, but is often not aware of them

Half of the surveyed Europeans suffer from chronic diseases, with a higher share of the chronically ill among Phygital Patients, who are better diagnosed than Traditional Patients. Phygital Patients are also more likely to use any app/device for monitoring or managing chronic disease (60%), compared to the Traditional Patients (26%). However, as the main barriers to the usage of digital solutions, Phygital Patients indicate a lack of awareness of such solutions (39%) and their low availability (36%).

PATIENTS LIVE IN A CONNECTED WORLD

P A S T → **N O W**

Physical facilities

Desktop

Applications

Call centres

Wearables

Physical facilities
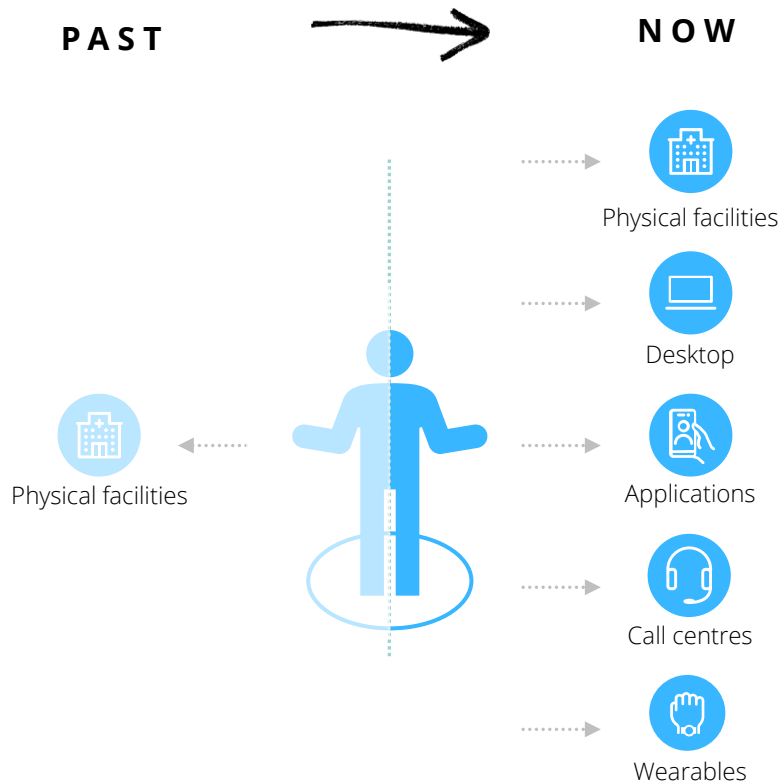
The **Phygital Patient of the future** expects a consistent experience across all available channels that synergise and complement each other

It is no longer enough to provide top-notch in-person care. Employing multiple touch points across traditional and digital channels has become a new standard in the healthcare industry.

In the future, we may expect that the share of Phygital Patients will level up with Traditional Patients[1]. This puts **pressure on the healthcare providers to deliver an effortless omnichannel experience** that satisfies the needs of early adopters and digital laggards.

Selected healthcare providers have already made significant investments in the technology that allow patients to adapt to the virtual reality. Yet many of them still **struggle with how to ensure multichannel consistency** while dealing with legacy and fragmented systems. Building upon the needs, solutions related to providing a single patient view have recently gained a fair amount of attention, hoping to deliver a holistic view of the patient's health history, behaviours, and preferences.

However, not only does technology, but also patients' willingness to share their personal data with the medical services provider play a vital role in the consistent experience. According to our study, **patients have the highest trust in the public and private healthcare entities and laboratories,** with over 75% of respondents feeling confident to share their medical information compared to only 41% and 25% of patients respectively declaring trust for big tech and start-up companies[2]. This shows that healthcare providers are in a perfect position to gather data, but still face the challenge of how to process the data to empower a delivery model that balances virtual and in-person care.

1. Traditional Patient – uses up to 4 mobile apps dedicated to wellbeing and/or healthcare and performs from 4 to 8 activities when taking care of health. Phygital Patient – uses 5 and/or more mobile apps dedicated to wellbeing/healthcare) and performs from 4 to 11 activities when taking care of health.
2. Responses to: *How much do you trust each of the following people or organisations to share your healthcare information? Responses of patients who declared that they agree or totally agree with the statement.*

We surveyed customers in **11 European countries** to discover their openness to the use of digital in taking care of their health

We examined adult (18-65 years old) smartphone users in 11 countries in Europe. The goal of the study was to **identify customers' wellbeing and healthcare habits** as well as their current **usage and openness to digital tools** in the future to assess whether modern technology can help people in having a healthier life.

The study results **shed the light on the impact of COVID-19 on people's digital adoption in taking care of their health**, thus providing important information for the healthcare providers about the digital needs, motivations and barriers of patients in the post-pandemic reality.

SWEDEN

POLAND

GERMANY

CZECH REPUBLIC

SLOVAKIA

FRANCE

AUSTRIA

HUNGARY

ROMANIA

PORTUGAL

TURKEY

We have defined **two patient archetypes** based on the level of their self-care and digitalisation

Based on two metrics, namely the level of digitalisation and self-care, **we defined two behavioural patient archetypes** – Traditional and Phygital Patient:
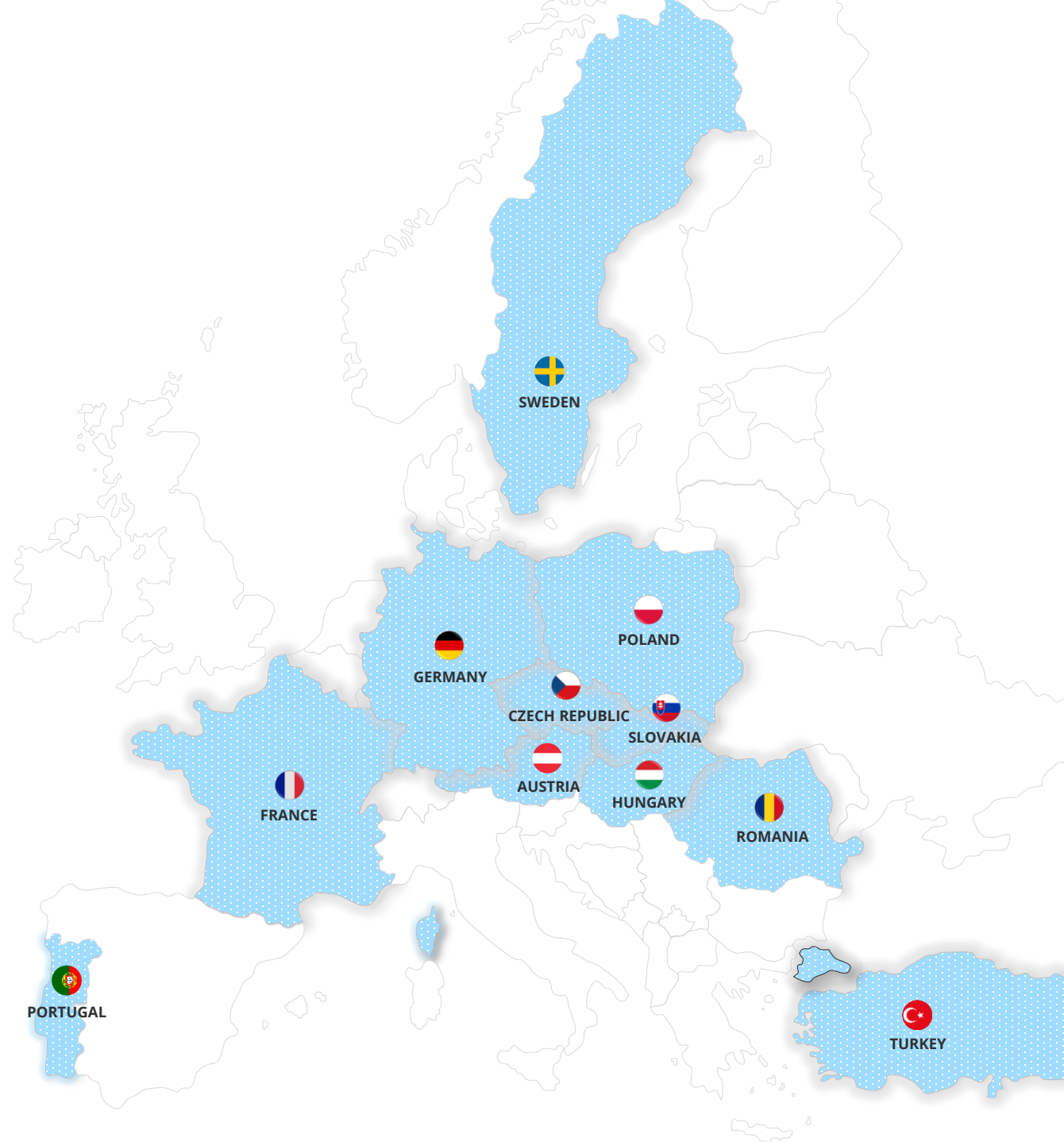
- **Traditional Patient** (comprising 49% of the population) is a person that uses up to 4 mobile apps dedicated to wellbeing and/or healthcare and performs from 4 to 8 activities[1] when taking care of their health.

- **Phygital Patient** (comprising 15% of the population) is a person that uses 5 and more mobile apps dedicated to wellbeing and/or and performs from 4 to 11 activities when taking care of their health.

Traditional Patients constitute the biggest market segment, being the most representative benchmark for the current patient archetype. Phygital Patients combine two segments that are most health-aware and digitalised, being in the avant-garde of the rest of the population. We can expect that **patients will move towards a healthier and more digitalised lifestyle, boosting the share of the Phygital Patients in the future**.

CUSTOMERS' DISTRIBUTION BASED ON THEIR SELF-CARE AND DIGITALISATION LEVELS

Segments are based on responses to questions regarding lifestyle habits and usage of wellbeing and healthcare applications[1]

Self-care level
based on respondents' choices on taking care of their health

High (9-11 activities) — 12%   5%

Moderate (4-8 activities) — 49%   10%

Traditional Patient (49%)

Phygital Patient (15%)

Low (up to 3 activities) — 21%   3%

0

Light users (up to 4 mobile apps used)

Heavy users (5 and more mobile apps used)

Digitalisation level
based on the number of used wellbeing and healthcare mobile applications

Note: *Other segments (in total 36% of population) were excluded from further analysis due to low level of taking care of their health or anticorrelation between self-care level and digitalization level.*

1. Activites concern taking care of health, e.g., following a balanced diet, excercising reguralry, taking care of mental health, avoiding stressful situations.
2. Scales were defined based on the behavioral similarities between the patient segments.

DEMOGRAPHIC CHARACTERISTICS OF TRADITIONAL AND PHYGITAL PATIENT

TRADITIONAL PATIENT   PHYGITAL PATIENT

Gender

	Traditional	Phygital
Women	48%	61%
Men	52%	39%

Age

	Traditional	Phygital
Gen Z (18-26)	14%	20%
Millennials (27-42)	34%	46%
Gen X (43-57)	32%	23%
Baby Boomers (58+)	20%	10%

Employment

	Traditional	Phygital
Small Company[1]	27%	28%
Medium Company	14%	18%
Big Company	24%	30%
Retired	15%	7%
Other[2]	20%	16%

Chronic diseases[3]

	Traditional	Phygital
I have one chronic disease	28%	28%
I have min. two chronic diseases	19%	29%
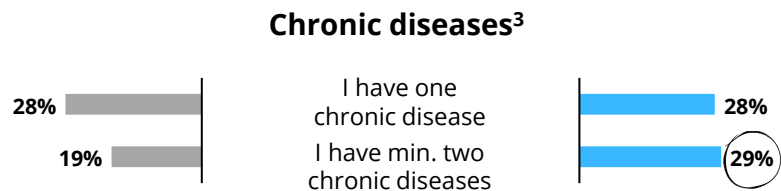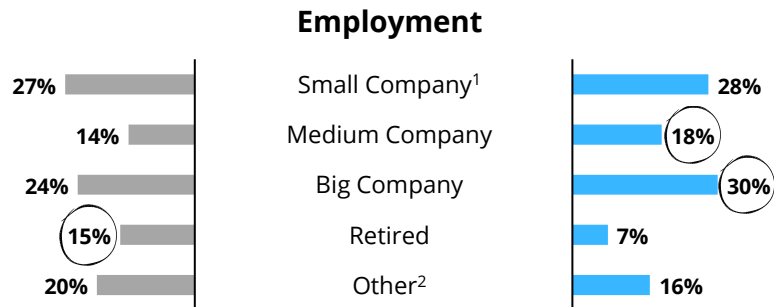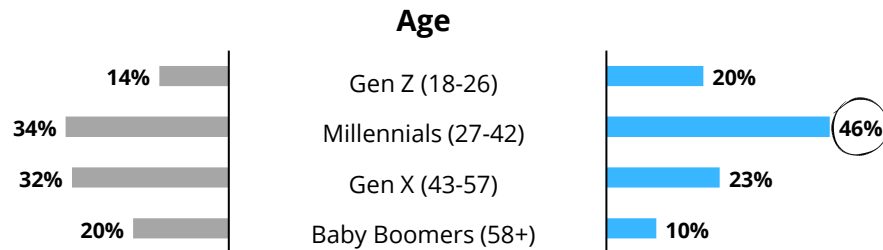
Phygital Patients are mainly women who belong largely to Millennials, work in medium and big companies, and are better diagnosed with chronic diseases

Phygital Patients segment is dominated by women (61%), which may reflect the model of a woman taking care of not only her own but the entire family's health. This translates into a more active use of medical services, thus being more conscious of digital tools supporting looking after health.

Phygital Patients consist largely of Millennials (46%), who are characterised by a relatively high openness to digital solutions, while also being mature enough to have greater consciousness and concern for their own and relatives' health.

Phygital Patients are mostly employees of medium and big companies (48%), where it has become a standard practice to offer private medical packages on preferential terms, which may translate into a higher frequency of using different medical services. On the other hand, twice as many of the retired (15%) belong to Traditional Patients, which reflects a lower digitalisation ratio among the older ones.

Phygital Patients are more aware of suffering from multiple chronic diseases (29%), as thanks to their higher health awareness and more frequent examinations they tend to be better diagnosed than Traditional Patients.

1. Small Company includes self-employed, micro and small companies.
2. Other includes answers: "I take care of a household", "I'm a student", "I'm unemployed".
3. Types of chronic diseases examined in the study are listed in the methodology section.

Patients' adoption of digital wellbeing and healthcare solution is not burdened by digital performance of the country

There is no significant relation between the level of digitisation of a given country and the share of Phygital Patients in the population. This shows that there are different factors that contribute to the patients' willingness to use digital solutions than the general digitalisation level of the society. That said, it can be presumed that **even patients who are not digitally native can be encouraged and motivated to use digital solutions** in the area of wellbeing and healthcare. The biggest share of Phygital Patients is noticed in Turkey, which can be explained by the fact that local healthcare providers (both public and private) encourage the use of digital channels in terms of health services.

TRADITIONAL AND PHYGITAL PATIENT DISTRIBUTION BY COUNTRY

- Traditional Patient
- Phygital Patient
- ● Country's digital maturity

Country	Traditional Patient	Phygital Patient
Austria	57%	9%
Germany	55%	9%
France	54%	11%
Czech Republic	55%	12%
Hungary	48%	13%
Slovakia	49%	14%
Sweden	55%	14%
Romania	47%	15%
Poland	43%	17%
Portugal	49%	18%
Turkey	32%	39%

Ø **Traditional Patient (49%)**

Ø **Phygital Patient (15%)**
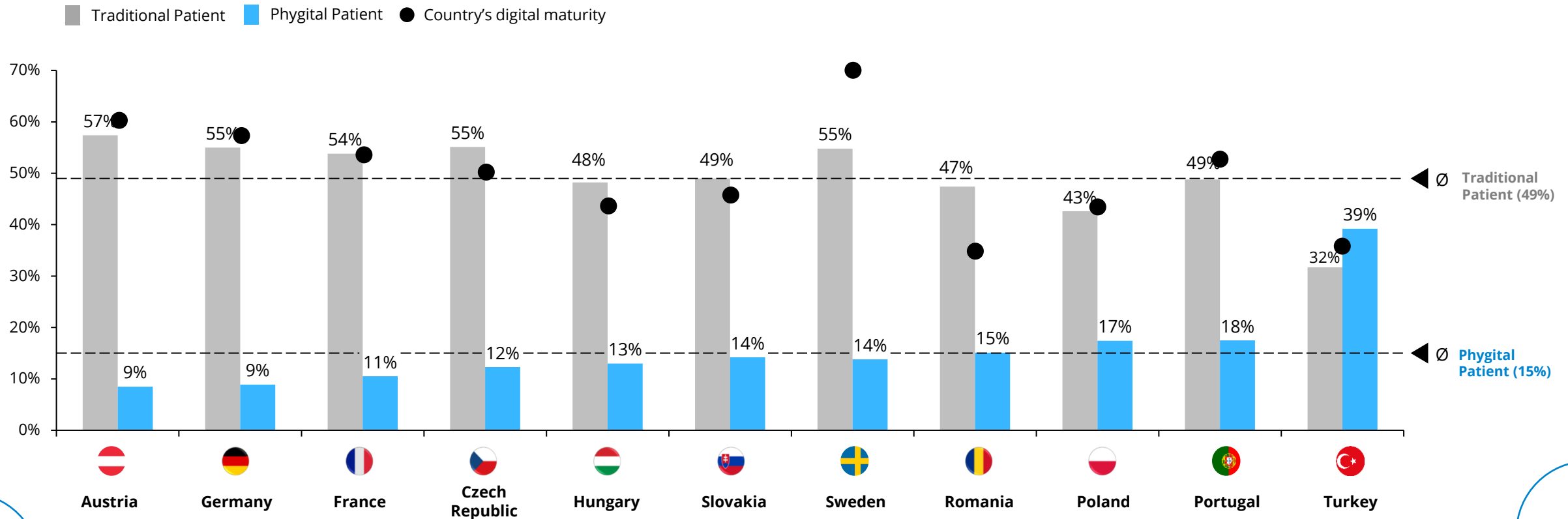
1. Based on Digital Society & Economy Index as of 2021, analysing 4 dimensions: Human capital, Connectivity, Integration of digital technology, Digital public services. Source: European Commission. Data for Turkey in 2021 estimated based on Deloitte analysis.
2. The graph presents only the share of Phygital and Traditional Patient segments, the rest of the patient segments were excluded from the graph.

01.

Phygital Patient uses digital solutions to take care of health but is conservative when it comes to the diagnosis stage
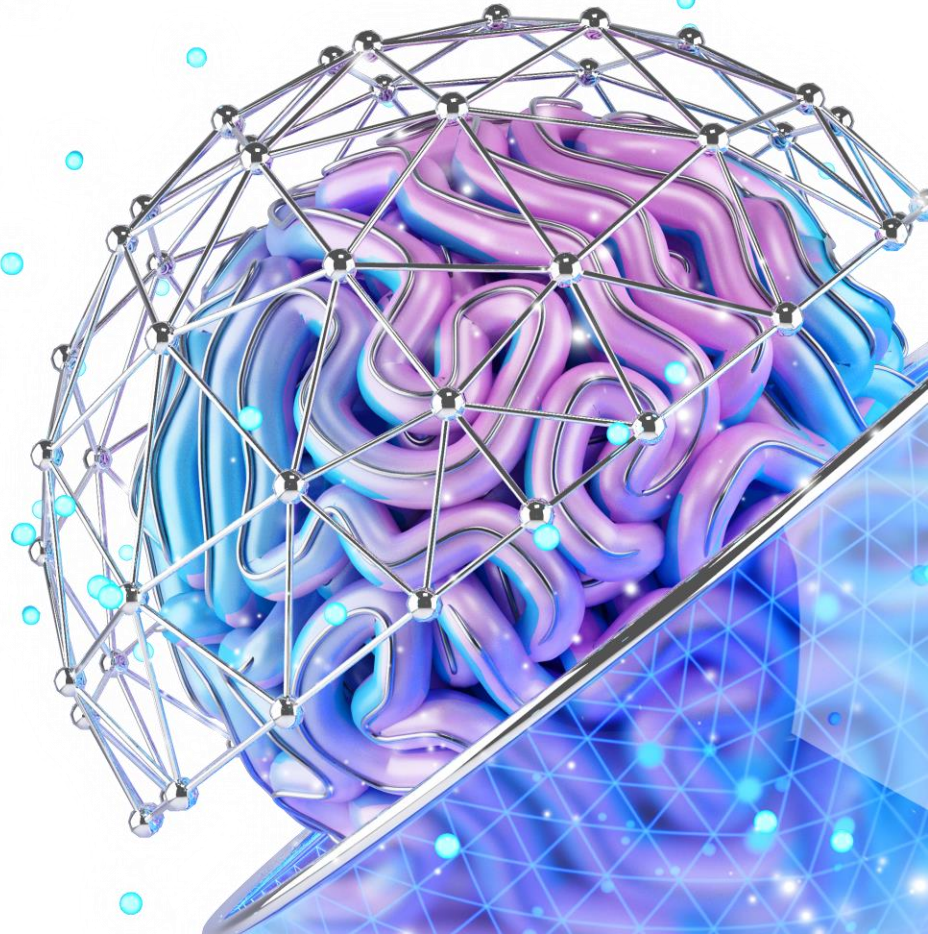
Stages before and after the appointment have the highest potential for digitalisation

Currently, only around a quarter of Phygital Patients mainly use traditional channels before (24%) and after the appointment stage (28%), while **almost half (44%) still prefer traditional channels when it comes to the appointment stage itself**. In the case of Traditional Patients, there is a similar relation with 66% of them preferring traditional channels for having doctor's appointments. When it comes to before and after the appointment stages still nearly a half of Traditional Patients prefer mainly traditional channels (42% and 48% respectively). This proves that activities related to, for example, finding a suitable doctor or facility, making an appointment, or later checking test results and scheduling control visits may have the greatest potential for digitisation.

PATIENTS' PREFERENCES TOWARD TRADITIONAL AND DIGITAL CHANNELS
% of patients declaring the channel they used for the following activities in the last 12 months[1]

Legend:
- I use mainly **traditional** channels
- I equally use **both** channels
- I use mainly **digital** channels
- I haven't performed any activity in the last 12 months

TRADITIONAL PATIENT

Before the appointment[2]

| 42% | 31% | 27% | 20% |

The appointment

| 66% | 24% | 10% | 32% |

After the appointment

| 48% | 30% | 22% | 25% |

PHYGITAL PATIENT

Before the appointment

| 24% | 41% | 35% | 6% |

The appointment

| 44% | 38% | 18% | 17% |

After the appointment

| 28% | 41% | 31% | 8% |
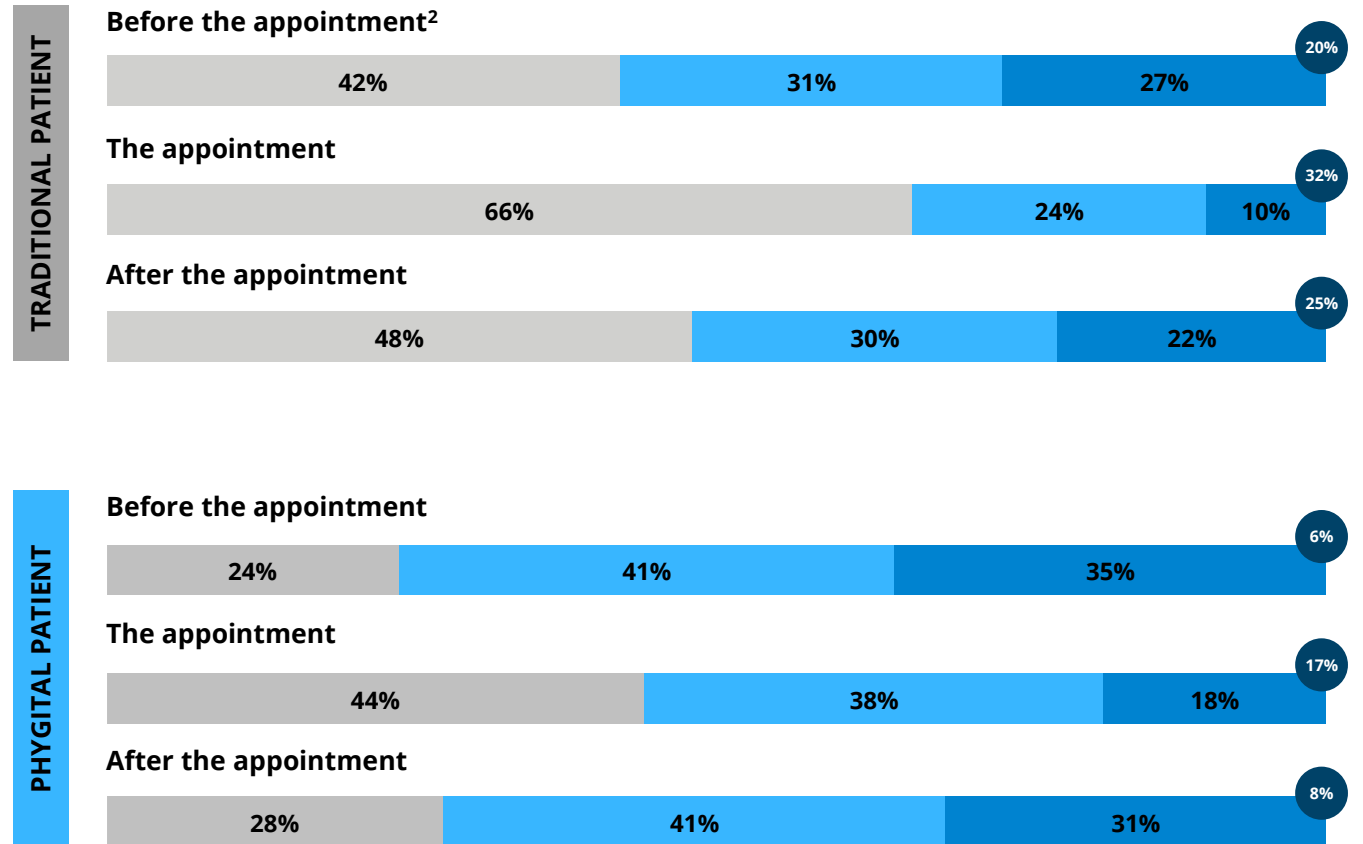
1. Responses to: *Please indicate which of the following activities have you performed in traditional or digital channels in the last 12 months?*
2. *Before the appointment stage – e.g. looking for a suitable medical facility, booking/managing doctor/medical professional appointment; the appointment stage – e.g. showing up for doctor/medical professional appointments, diagnoses for illnesses, diseases and disorders; after the appointment stage – e.g. checking the test/examination results, getting prescriptions.*

Patients are most attached to personal contact when it comes to doctor's appointments and diagnoses

Patients clearly favour **being consulted and examined in person** – regardless of the patient archetype, 65% of them declared that they prefer to have in-person medical visits and 61% of them want to be diagnosed personally.

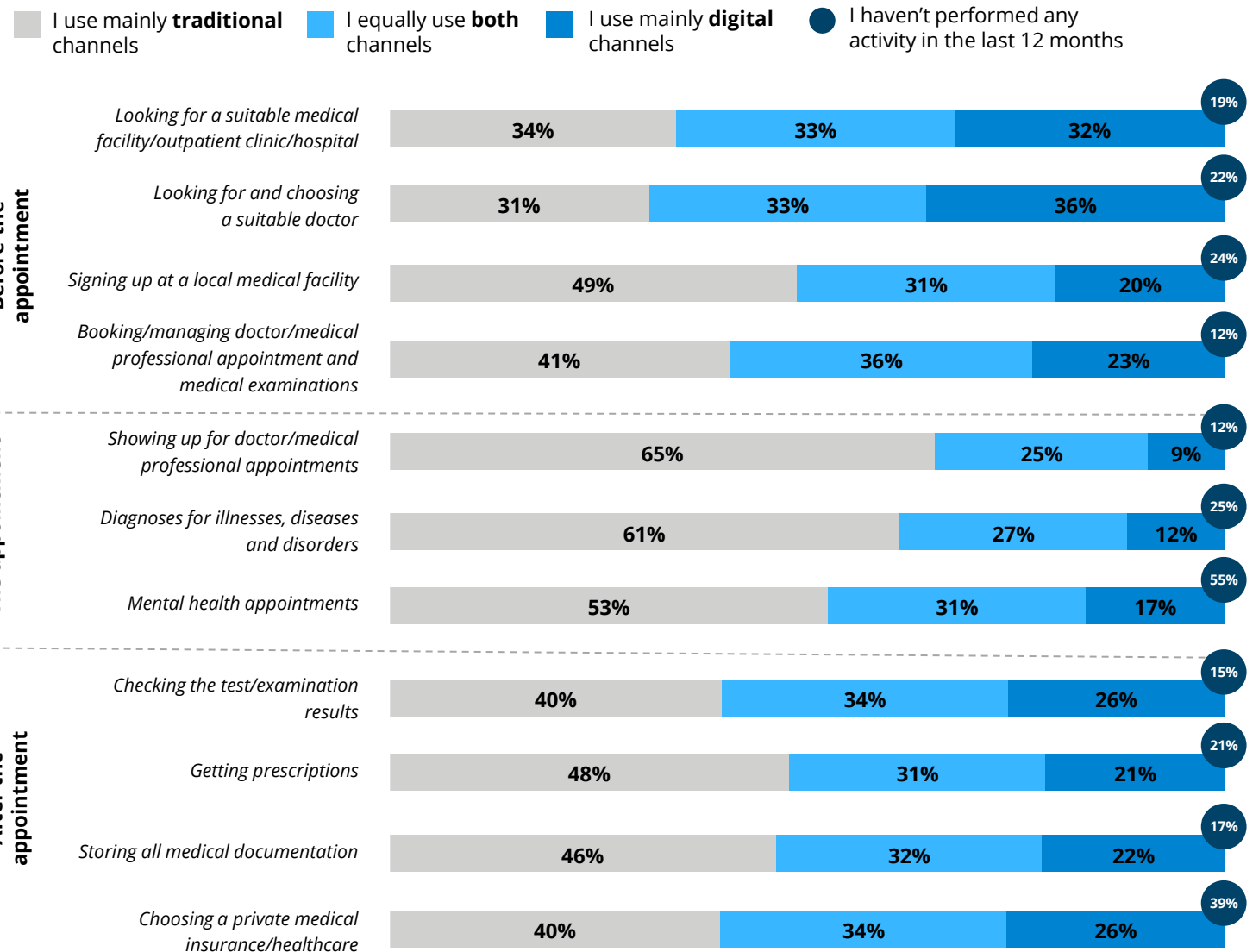We may assume that patients prefer direct contact with specialists **due to a higher trust and a belief that only via personal visit the doctor can make the right diagnosis**. Moreover, people count on handling all doctor's visit-related activities at once when being at a medical facility, e.g. having an appointment, doing necessary examinations, booking follow-up visits and obtaining information from the personnel in case of doubts.

PATIENTS' PREFERENCES TOWARD TRADITIONAL AND DIGITAL CHANNELS
% of patients declaring the channel they used for the following activities in the last 12 months[1]

Legend:
- I use mainly **traditional** channels
- I equally use **both** channels
- I use mainly **digital** channels
- I haven't performed any activity in the last 12 months

Before the appointment

Activity	Traditional	Both	Digital	Haven't performed
Looking for a suitable medical facility/outpatient clinic/hospital	34%	33%	32%	19%
Looking for and choosing a suitable doctor	31%	33%	36%	22%
Signing up at a local medical facility	49%	31%	20%	24%
Booking/managing doctor/medical professional appointment and medical examinations	41%	36%	23%	12%

The appointment

Activity	Traditional	Both	Digital	Haven't performed
Showing up for doctor/medical professional appointments	65%	25%	9%	12%
Diagnoses for illnesses, diseases and disorders	61%	27%	12%	25%
Mental health appointments	53%	31%	17%	55%

After the appointment

Activity	Traditional	Both	Digital	Haven't performed
Checking the test/examination results	40%	34%	26%	15%
Getting prescriptions	48%	31%	21%	21%
Storing all medical documentation	46%	32%	22%	17%
Choosing a private medical insurance/healthcare	40%	34%	26%	39%

1. Responses to: *Please indicate which of the following activities have you performed in traditional or digital channels in the last 12 months.*

Despite differences in trust towards apps/wearables, both Traditional and Phygital Patients believe it is the doctor who has the final say in diagnosis
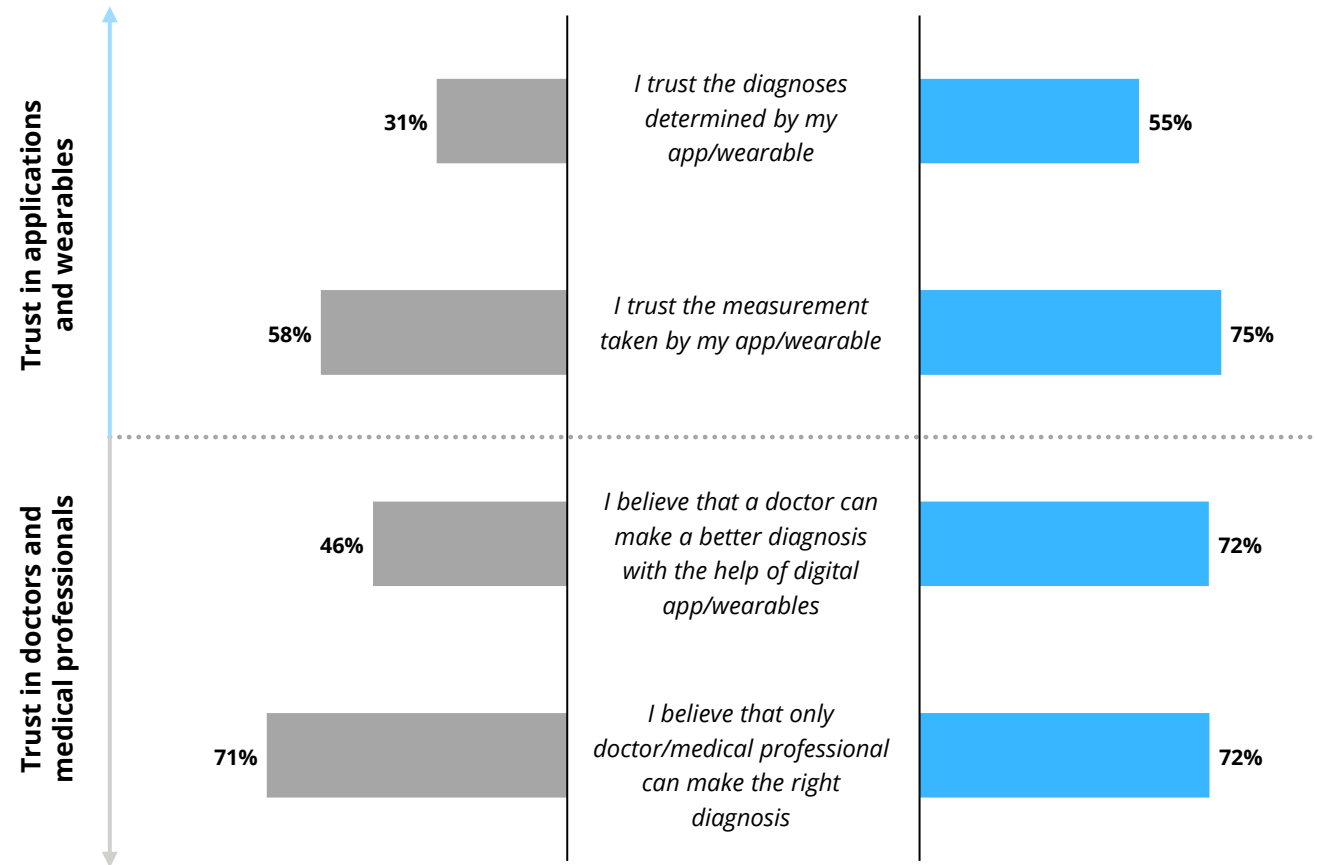
Unlike Traditional Patients, **Phygital Patients are characterised by having significantly greater trust in the health-related applications and wearables** – as many as 55% of Phygital Patients declared that they trust the diagnosis determined by their app/ wearable, which is by 24 p.p. higher than among Traditional Patients. The same relation can be seen in the case of measurements taken by apps and wearables, where as many as 75% of Phygital Patients trust the technology.

However, when it comes to the final diagnosis, both the Traditional Patient (71%) and Phygital Patient (72%) believe that **only a doctor/medical professional can make the right diagnosis.** This indicates that technology can support health prevention and diagnosis but will never fully replace the trust placed in humans.

PATIENTS' TRUST TOWARDS APPS/WEARABLES[1] AND DOCTORS/MEDICAL PROFESSIONALS

% of patients declaring that they agree or totally agree with the statement[2]

| | Traditional Patient | Phygital Patient |

Trust in applications and wearables

	Traditional	Statement	Phygital
	31%	*I trust the diagnoses determined by my app/wearable*	55%
	58%	*I trust the measurement taken by my app/wearable*	75%

Trust in doctors and medical professionals

	Traditional	Statement	Phygital
	46%	*I believe that a doctor can make a better diagnosis with the help of digital app/wearables*	72%
	71%	*I believe that only doctor/medical professional can make the right diagnosis*	72%

1. Wearables – consumer devices that collect information about lifestyle and health, e.g. smartband, smartwatch.
2. Responses to: *Please rate on a scale from 1 to 5 how you agree with the following statements.*

The future of healthcare is omnichannel, not digital-first

Healthcare belongs to one of the few industry sectors where personal contact is not only necessary but even desired. Even digitally advanced Phygital Patients prefer physical contact when it comes to doctor's appointments and diagnosis. The next chapter of **healthcare delivery will not treat virtual health as a separate system**, **but as a part of a broader omnichannel healthcare delivery model that balances virtual and in-person care**, thus providing the best patient experience. Many healthcare providers who went through a digitalisation "big bang", underestimating the value of patient experience management, **now struggle to provide a connected experience across each online and offline channel**. However, with advancements in technology, data analytics, and machine learning, companies are now better equipped to compete in creating experiences that patients will find effortless and engaging.

HOW TO WIN PHYGITAL PATIENT?

Phygital Patients will be looking for a consistent experience across all channels. It is no longer enough to enable patient contact via call centre, email, text, chat, web, or mobile app. They expect that when scheduling an appointment via contact centre their data will be reflected just in time in the mobile app. They expect to see online doctors' schedules in real-time to make a last-minute appointment. That is why **system integrations and common databases are necessary to deliver a 360⁰ customer view** and provide a more personalised approach to patient and value-based care. The key to achieve that is to **build technology assets that will make the omnichannel communication more effective,** such as customer data platforms (CDP), artificial intelligence (AI) and machine learning (ML), which may automate processes that are repeated, complicated, and high-volume in nature, and at the same time may deliver more personalized experience for patients.

CASE STUDY

01. Amazon Care
Amazon believes that combining telemedicine and in-person health care is the best approach

Amazon has launched its Amazon Care telehealth service dedicated to employees nationwide and will open physical clinics in more than 20 cities in 2022. The service was first introduced in 2019 for Amazon employees in Seattle and has since been scaled to all Amazon employees and other companies like Hilton and Whole Foods Market. The company emphasizes that combining telemedicine and in-person services is the best approach because it focuses on providing quality care in a cost-effective manner. Amazon Care offers a consistent customer experience across all available, well-integrated channels. As a result, employers using the system gave it a rating of 4.7/5 stars.

02. LUX MED
LUX MED offers the latest digital solutions to ensure flexibility and convenience

All of LUX MED's patients can remotely make appointments for available dates at any facility in Poland and receive automatic reminders. Moreover, LUX MED offers audio, video and chat-based e-consultations via its app, desktop portal and phone. In addition, patients can monitor their medical history on a timeline, check test results with the doctor's recommendation, receive regular prescriptions and track the course of treatment online. Solutions provided by LUX MED are fully integrated, allowing patients to enjoy flexible, consistent and comprehensive customer experience across all channels.

In order to provide a top-notch patient experience, healthcare companies should focus on filling the technology gaps in the legacy systems. According to Deloitte research, **companies have on average 17 technology applications leveraging customer data and 28 data feeds used for customer insights and engagement**. *This plethora of tools makes it difficult to manage – companies struggle to take action on siloed data to deliver a relevant, real-time and personalised experience that supports business goals. Drawing from the spectacular customer-oriented digital capabilities offered by companies from other businesses, healthcare providers now focus on catching up by trying to adapt use cases from other industries to the healthcare specifics.*

Recent technology developments have made time-to-insights faster, simultaneously making new levels of personalisation and service scalable and cost-effective. *AI and machine learning are tailor-made for designing smooth patient experiences. From chatbots that are there for patients 24/7 to natural language processing tools that let companies understand what patients expect. This digital portfolio expansion is the result of companies' policy to create a digital front door – using technology to improve patients' experiences at every touchpoint in their journey — from finding a doctor, through booking an appointment, to obtaining any needed follow-up care.*

Piotr Ćwikliński, PhD
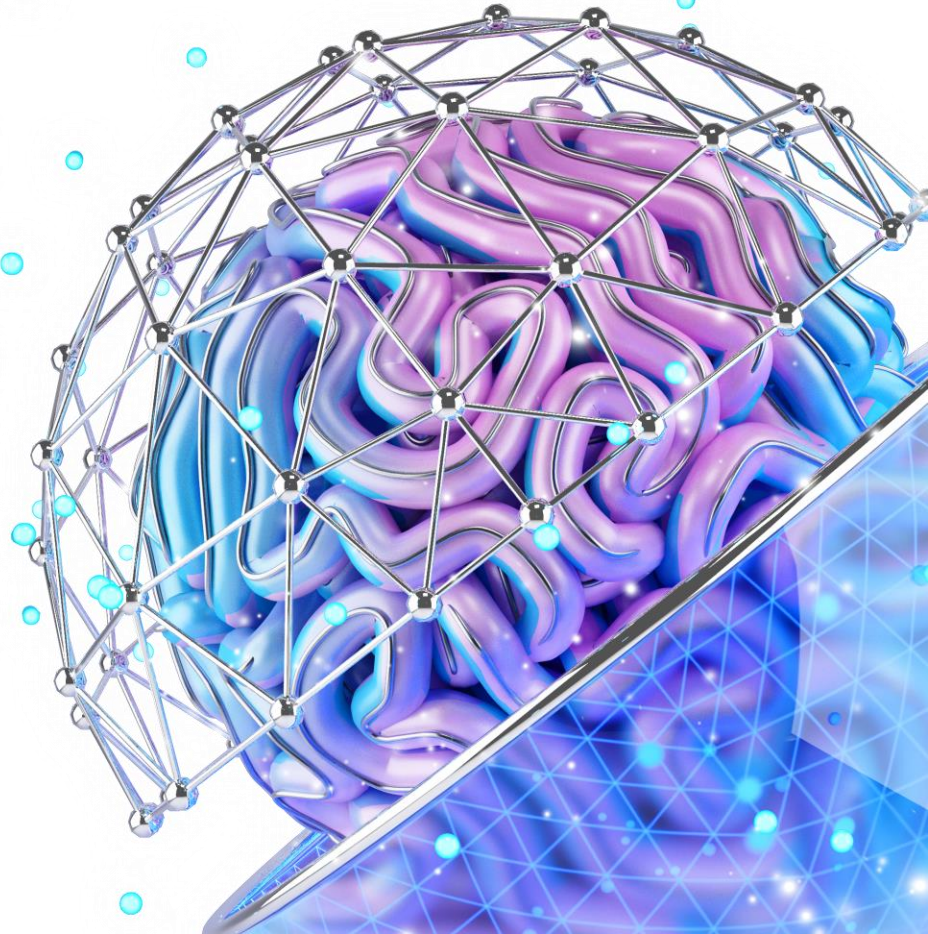
Leader of Deloitte Data Science Central
Europe Centre of Excellence for Life Sciences
& Health Care

02.

For Phygital Patient the main driver to share medical data is concern for their health, followed by financial incentives
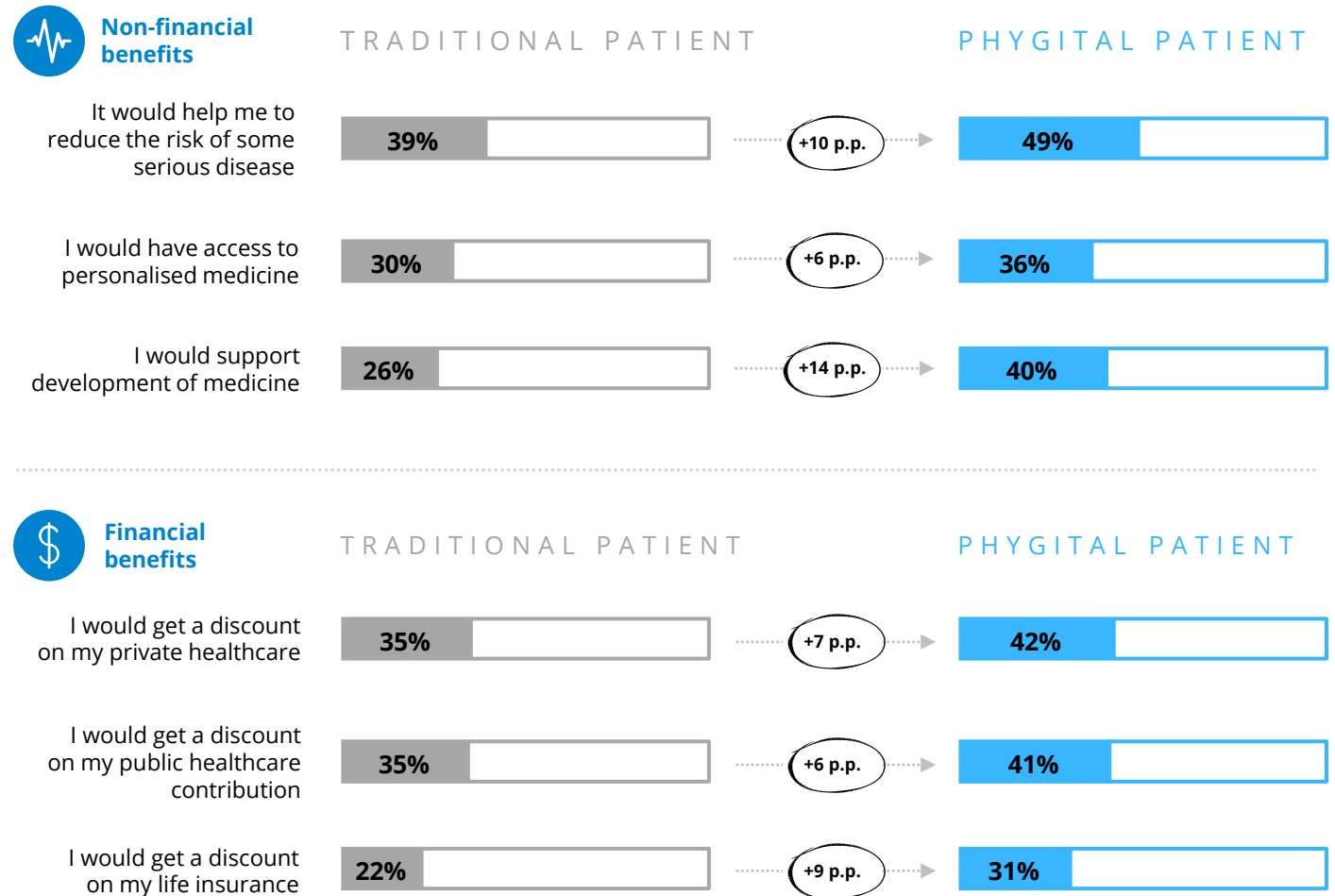
The most important motivator for patients to share their medical data with mobile applications is a concern for their health, followed by financial benefits

Regardless of the incentives, **Phygital Patients are much more likely to share medical data with a mobile application**. As the most important benefit of doing so, **Phygital Patients indicated the possibility of reducing risk of serious illnesses (49%),** which was visibly less important to the average of Traditional Patient (39%). Phygital Patients also show **a greater sense of contribution to the development of new medicines** (declared by +14 p.p. more Phygital than Traditional Patients), which may indicate their higher awareness of the effects of such support.

Financial benefits also make an effective incentive, where among the most promising factors patients stated the **opportunity to receive discounts on private and public health care** (indicated by on avg. 42% of Phygital Patients and 35% of Traditional Patients).

PATIENTS' MOTIVATORS FOR SHARING THEIR MEDICAL DATA WITH MOBILE APPS

Top3 non-financial and financial benefits among respondents[1]

Non-financial benefits

	TRADITIONAL PATIENT		PHYGITAL PATIENT
It would help me to reduce the risk of some serious disease	39%	+10 p.p.	49%
I would have access to personalised medicine	30%	+6 p.p.	36%
I would support development of medicine	26%	+14 p.p.	40%

Financial benefits

	TRADITIONAL PATIENT		PHYGITAL PATIENT
I would get a discount on my private healthcare	35%	+7 p.p.	42%
I would get a discount on my public healthcare contribution	35%	+6 p.p.	41%
I would get a discount on my life insurance	22%	+9 p.p.	31%

1. Responses to: *Would you be willing to share your medical data with a mobile app (e.g. examinations results, genetic code) in exchange for benefits?*

High level of trust towards healthcare providers puts them on a privileged position against technology companies

One rule always holds true across all the responses analysed – **Phygital Patients are more willing to share their medical data** with both health incumbents and technology companies. Their openness and willingness to use new digital solutions make **Phygital Patients the most prospective segment for testing innovative ideas**.
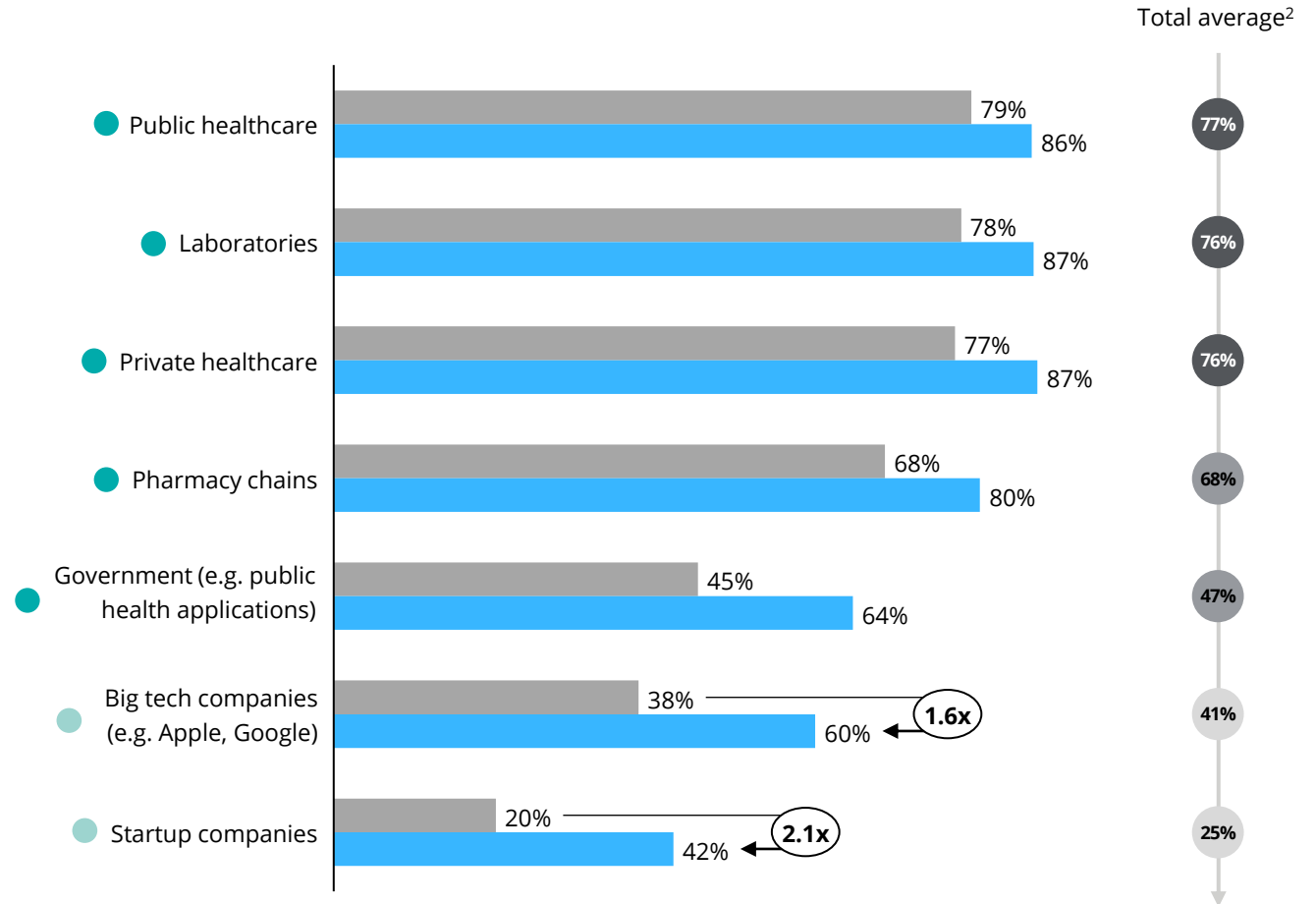
The most trusted entities among all respondents are **public healthcare (77%), followed by laboratories (76%) and private healthcare (76%).**

The least trusted entities that simultaneously displayed the largest gap between Phygital Patients and Traditional Patients are **big tech companies (60% vs. 38%) and start-up companies (42% vs. 20%).** The battle for customer trust in their case will be crucial but not easy, and the question is if they compete against one another or begin to cooperate.

PATIENTS' CONFIDENCE IN SHARING MEDICAL INFORMATION

% of patients who declared that they trust to some extent or fully trust in a given organisation[1]

Traditional Patient Phygital Patient ● Incumbents ● Technology disruptors

Total average[2]

Public healthcare — 79% / 86% — **77%**

Laboratories — 78% / 87% — **76%**

Private healthcare — 77% / 87% — **76%**

Pharmacy chains — 68% / 80% — **68%**

Government (e.g. public health applications) — 45% / 64% — **47%**

Big tech companies (e.g. Apple, Google) — 38% / 60% (1.6x) — **41%**

Startup companies — 20% / 42% (2.1x) — **25%**

1. Responses to: *How much do you trust each of the following organisations to share your healthcare information (e.g., medical records, medical exam results)? where 1 – I don't trust at all, 5 – I fully trust.*
2. Total average for all respondents.

Healthcare providers are in a favourable position to leverage data-driven solutions

With the spread of digitalisation, people became more concerned about their data privacy, especially as the pandemic restrictions forced them into expanding their digital footprints. The good news for healthcare incumbents is that both **Traditional and Phygital Patients have a high level of trust in them.** Being in this very privileged position, **healthcare providers can leverage data to deliver value for patients,** ranging from the personalisation of communication, better adjustment of offered services to the patient's need to the use of data-driven algorithms assisting doctors in making an accurate diagnosis and treatment. Getting patients' trust is still a challenge for the technology companies, however, they are ahead of incumbents when it comes to advanced data-processing know-how (e.g. software, skilled staff) and use cases on how to take advantage of them.

HOW TO WIN PHYGITAL PATIENT?

Healthcare providers already have high levels of patient trust and databases that could change the way we look at medicine. Advanced data analytics could allow to **avoid preventable diseases, reduce treatment costs and improve the general quality of life.** The use of big data may be revolutionary in improving health and satisfaction of Phygital Patients, which can be a major motivating factor for them to share their medical data. Among the spectrum of use cases, we may consider i.a. personalised reminders of periodical health check-ups and examinations, real-time alerting of doctors about patients' condition, improved drug prescription processes or better availability of the medical personnel thanks to predictions of increased care periods. Last but not least, **big data techniques may support the development of new medicines, therapies and other health innovations** for the benefit of the entire society.

CASE STUDY

01. NIMIS
NIMIS revolutionises the delivery of diagnostic imaging services in Ireland

NIMIS project might be Ireland's most successful deployment of a National Healthcare IT System. As of 2021, there are 46k+ active users, 30 m studies held on archive, with over 7k additional studies added each day. All public hospitals using NIMIS are connected on a single imaging platform where doctors can access historical data, consult cases and recommend treatments. The system architecture enables hospitals to reduce costs and provide the highest standard of patient safety, as well as improve the quality of service for patients, healthcare professionals and radiology staff.

02. Walmart & Health at Scale
Walmart introduced personalisation of health care services for their employees

In January 2022, Walmart announced a partnership with Health at Scale, aimed at providing personalised recommendations to its employees and their families in choosing a perfect doctor. Leveraging a platform based on machine learning and artificial intelligence, recommendations are modelled to take account of differences in provider outcomes and thousands of health and non-health-related factors. This initiative is a major part of Walmart's commitment to customising services and treatments to individual needs in healthcare, thus helping associates and their family members find great doctors who consistently deliver the best value and quality care in their community.

"The data-driven approach is now on the agenda of many companies, and it presents very strong growth potential in their long-term strategies. Already there are examples of AI-, ML-, and NPL-based[1] models that can match content and recommend actions better than humans. Pressure from patients on personalised services, driven by their experiences from other industries, will **push healthcare providers to catch up with leaders in this area, such as Netflix or Spotify.** Now imagine that in the coming years similarly working algorithms that are capable of capturing patterns unnoticeable to humans and process unimaginable amounts of medical data, will help doctors make more accurate diagnoses and tailor treatments.

Healthcare representatives are highly trusted by patients when it comes to sharing medical data. This solid base combined with technology solutions available on the market can be used to meet, or even exceed, the expectations of the most demanding patients. As **the healthcare industry is at the beginning of this journey, we may expect that there are many opportunities for exploiting the combination of data and technology,** therefore starting down the path today could be a significant competitive advantage tomorrow.

Jan Michalski
Partner
Deloitte Digital CE Leader

1. AI – Artificial intelligence, ML – Machine Learning, NPL – Natural Language Processing.

03.

Phygital Patient manages their health more actively when encouraged by digital solutions
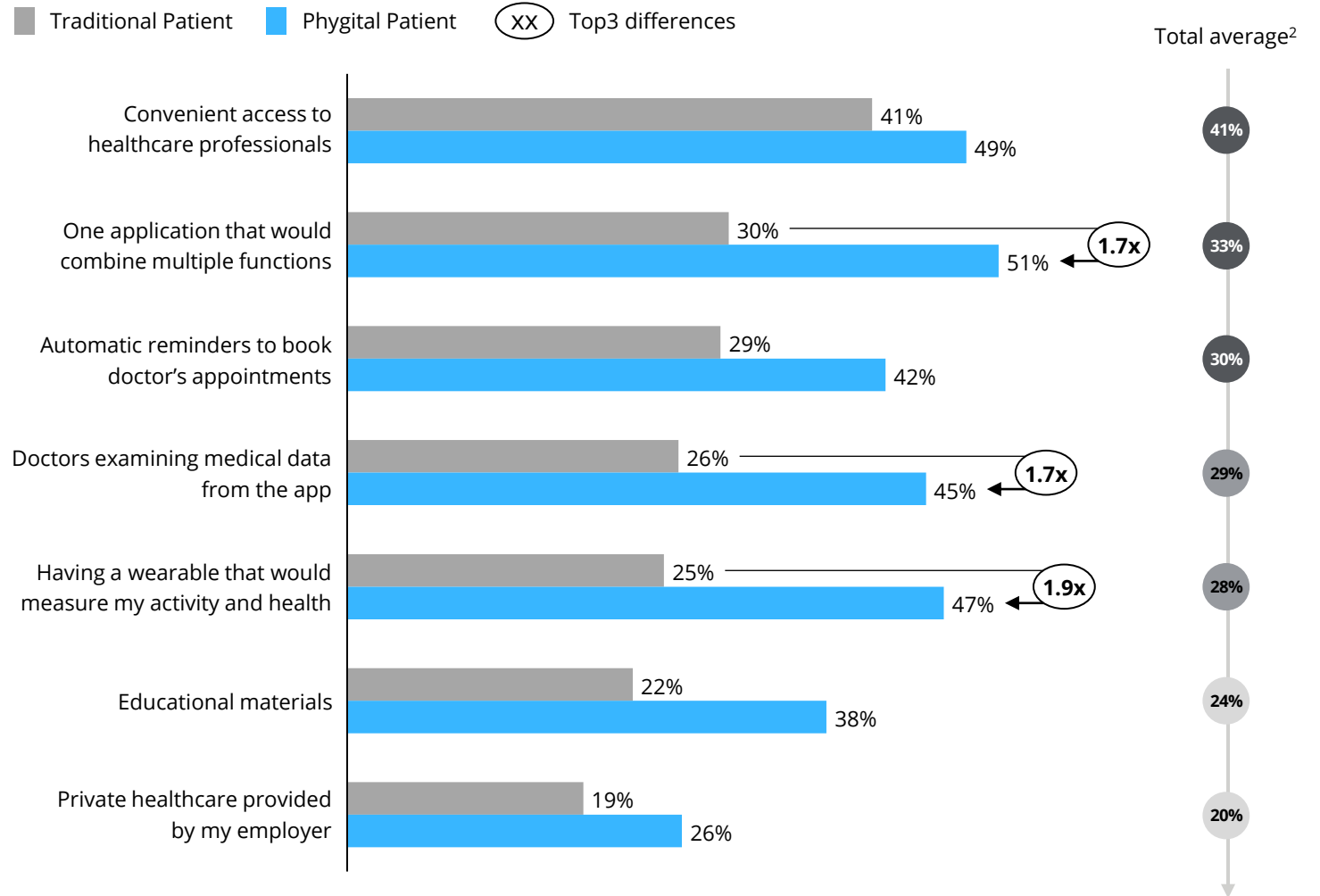
For more than a half of Phygital Patients one app aggregating multiple wellbeing & health-related functionalities would motivate them to manage their health more actively

The most important motivator for all patients is **convenient access to healthcare professionals –** as declared by 41% of respondents. This became the most significant factor for the Traditional Patients as well (again 41% of respondents).

Top3 differences between the two groups can be observed in the answers related to the use of digital solutions. The biggest gap concerns **having a wearable, which was over 1.9x more important to Phygital Patients** who tend to be more tech-savvy. The following motivators with the biggest differences between Phygital Patient and Traditional Patient were aggregation of multiple functionalities within a single app (51% vs. 30%) and doctors examining medical data from the app (45% vs. 26%). It means that **digital have significantly higher impact on the future patient** when it comes to taking care of their health.

TOP7 MOTIVATORS FOR PATIENTS TO MANAGE THEIR WELLBEING & HEALTH MORE ACTIVELY
% of patients declaring the most significant factors for them[1]

Legend:
- ■ Traditional Patient
- ■ Phygital Patient
- (XX) Top3 differences

Total average[2]

Motivator	Traditional Patient	Phygital Patient	Top3 difference	Total average
Convenient access to healthcare professionals	41%	49%		41%
One application that would combine multiple functions	30%	51%	1.7x	33%
Automatic reminders to book doctor's appointments	29%	42%		30%
Doctors examining medical data from the app	26%	45%	1.7x	29%
Having a wearable that would measure my activity and health	25%	47%	1.9x	28%
Educational materials	22%	38%		24%
Private healthcare provided by my employer	19%	26%		20%

1. Responses to: *Which of the following factors would motivate you the most to take a more active role in managing your wellbeing and health?*
2. Total average for all respondents.

Digital solutions may boost Phygital Patient self-care level and reduce the cost of risk

Phygital Patients are already caring about their health; however, their motivation level still could benefit from a little boost. As our study shows, **digital solutions**, such as multi-function apps or wearables tracking their physical parameters on a daily basis, rank among **the most powerful self-care incentives for Phygital Patients**. Building upon those insights, digital solutions may support healthcare providers to foster a role-model behaviour among patients. However, **not only patients will benefit from them, but also healthcare providers thanks to lower insurance risk costs**, as higher patient eagerness in prevention reduces the probability of developing serious diseases. By making users committed, companies make them feel safe to share more health data and can act upon them by fostering proper habits and preventing health problems.

HOW TO WIN PHYGITAL PATIENT?

With the shift from mass to value-based care comes a new generation of healthcare consumers – Phygital Patients – who proactively engage in their own health. The challenge for healthcare companies is to support these goals and further encourage a healthier way of living. This may include simple solutions allowing for more convenient and easy access to healthcare professionals, or more advanced ones that go beyond the standard patient journey focused on their daily care. There are already examples of **digital wellbeing platforms aimed at boosting user engagement,** being launched by insurers for policy owners or corporates for their employees. Especially for insurers, these tools are designed to help them struggle with customer engagement, but at the same time **gain insights into risk and lifestyle factors, health metrics, or disease progression.**

CASE STUDY

01. **Aetna**
Attain is a wellbeing app created by Aetna, aiming to help users build healthy habits

Attain allows users to earn points by taking healthy actions or syncing their fitness data with Apple Watch and achieving their activity goals. The weekly goals differ between the users, as they are automatically adjusted based on their performance. Earned points can be later exchanged for gift cards and eligible plan members can earn an Apple Watch by using points to pay it off over 24 months. When the monthly goal is not met, the user has to cover a missed payment from his pocket. According to Aetna and Apple, 90% of program participants reported a health benefit from using the app & watch.

02. **Tictrac**
Tictrac is a connected platform that engages people in their health through aggregated data

Tictrac's health and wellbeing platform has been designed to seamlessly fit into a user's daily lifestyle. It uses behavioural science to identify trigger points where additional motivation may be required and provides engaging content to keep users inspired. So far, it has established partnerships with the world's leading healthcare and insurance providers, including Aviva, Allianz and Prudential. Lately, Puma PE has sold its stake in Tictrac to a Canadian healthcare platform Dialogue Health Technologies Inc. in a GDP 35 m deal, achieving a 38% rate of return in two years after making its investment in 2020.

"

*More than a half of Phygital Patients would be interested in apps offering multiple aggregated functionalities. No wonder, as a push toward one-app one-job solutions from different industries made us feel overwhelmed by the amount of them. However, **we are already witnessing the rise of digital ecosystems, which aim to deliver new value, ensure an integrated experience, and enhance engagement**. The digital healthcare ecosystem with a full range of health and well-being services is flourishing and we expect many healthcare providers to follow this path. It is a matter of time when Phygital Patients will be able to make virtual appointments with doctors, buy medicines & supplements through virtual pharmacies, check their health status digitally and use artificial intelligence (AI) tools as part of an end-to-end experience.*

*We want to create opportunities for patients to care about their physical and mental health in order to get in front of potential diseases, and make them conscious about a healthy approach to life. **We help building such ecosystems by combining medical applications, wearables, well-being and health services, and at the same time delivering an exceptional user experience**. We know how we will provide generic paths for all patients, regardless of their diseases, and we tailor them to specific therapeutic areas, by taking advantage of the complex healthcare ecosystem. We enable our clients to win the greatest possible trust of Phygital Patients.*

Ibo Teuber
Partner
Health Care Consulting Leader DE

04.

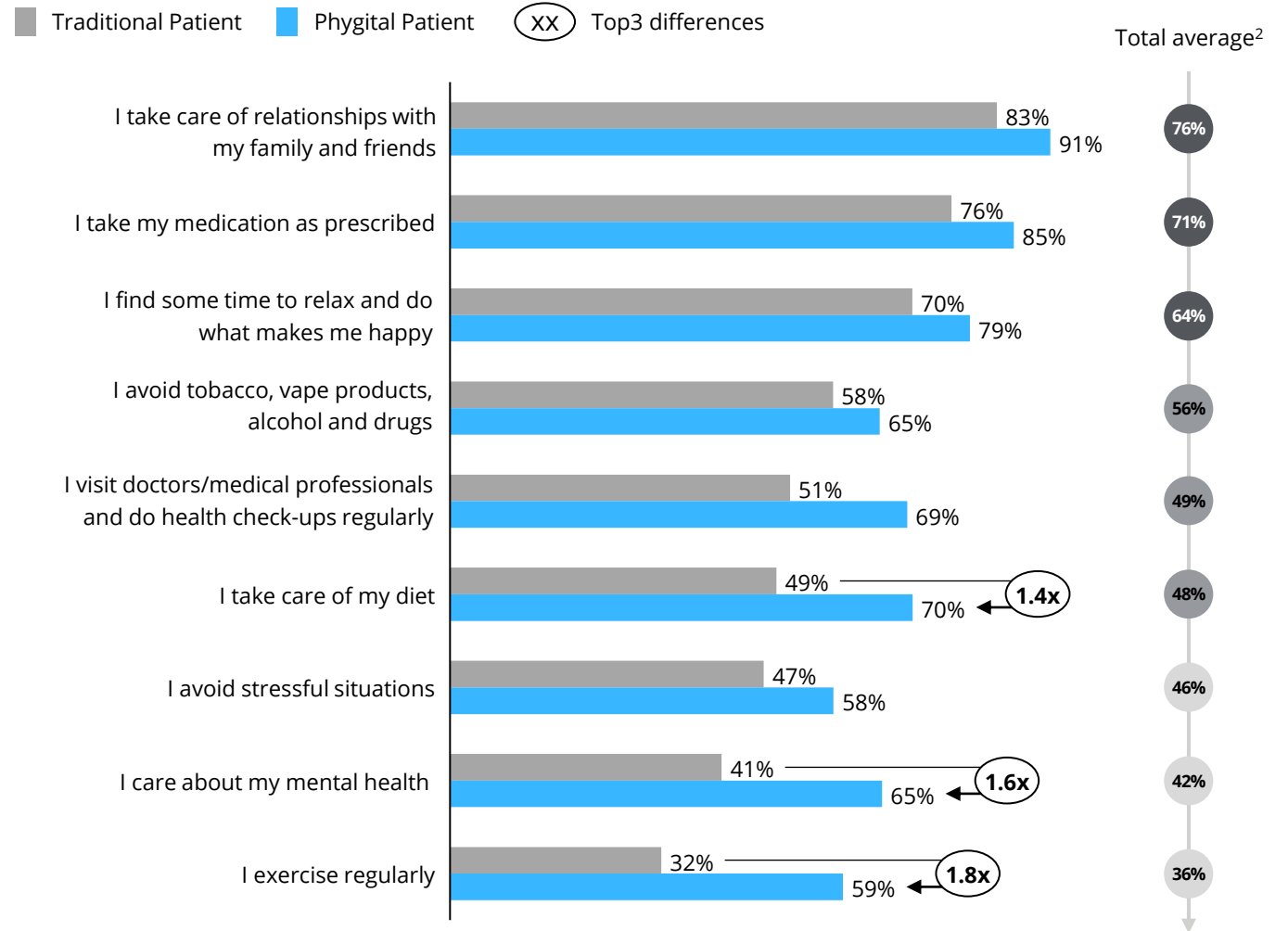**Phygital Patient equally takes care of their mental health as their physical health**

Phygital Patients pay more attention to health prevention, taking better care about their diet, physical and mental health

When asked about self-care, Phygital Patients outpace Traditional Patients in every category, which shows their higher degree of consciousness in terms of prevention. This is particularly visible when it comes to regular exercises (1.8x higher score than for Traditional Patients), taking care of their mental health (1.6x difference) or diet (1.4x).

Pandemic-induced social isolation has **increased the significance of mental health**, which is noticed among Phygital Patients – **as much as 65% of them indicate care for their mental health** and perform activities that prevent mental-related problems, such as maintaining meaningful relationships (91%), finding time to relax (79%) or pursuing a stress-free lifestyle (46%).

PATIENTS' WAYS TO TAKE CARE OF THEIR HEALTH

% of patients who declared that they agree or totally agree with the statement[1]

Legend: ■ Traditional Patient ■ Phygital Patient ◯ XX Top3 differences

Total average[2]

Statement	Traditional	Phygital	Top3	Total average
I take care of relationships with my family and friends	83%	91%		76%
I take my medication as prescribed	76%	85%		71%
I find some time to relax and do what makes me happy	70%	79%		64%
I avoid tobacco, vape products, alcohol and drugs	58%	65%		56%
I visit doctors/medical professionals and do health check-ups regularly	51%	69%		49%
I take care of my diet	49%	70%	1.4x	48%
I avoid stressful situations	47%	58%		46%
I care about my mental health	41%	65%	1.6x	42%
I exercise regularly	32%	59%	1.8x	36%

1. Responses to: *How do you take care of your health? On the scale from 1 to 5, how do you agree with the following statements, where 1 – I completely disagree, 5 – I completely agree.*
2. Total average for all respondents.

Mental wellbeing may build Phygital Patient's engagement, but mental health will win their love

COVID-19 pandemic triggered the rise of anxiety and depression by 25% worldwide, driven by social isolation, fear of infection, concerns and deaths of loved ones or financial worries[1]. At the same time, we noticed **growing care for mental health reflected by the rising popularisation of digital mindfulness solutions** supporting people to reduce stress and anxiety. Only during the pandemic, leaders in this field, such as Calm or Headspace, generated on avg. a 30% increase in customer spending in 2021 compared to 2020[2]. Already 65% of Phygital Patients indicate mental health as an important aspect of their wellbeing and we may expect that demand for such solutions will rise over time – **driving interest not only in alleviating exhaustion of everyday life but also curing more serious diseases.**

HOW TO WIN PHYGITAL PATIENT?

Digital solutions dedicated to mental wellbeing and health are generally not widely adopted among traditional healthcare providers yet. However, **these solutions might be a great tool to win patients' engagement and love**. The borders between players in the healthcare sector are blurring as we see more and more healthcare providers expand beyond the core services. Mental wellbeing features, such as relaxing music, meditation or bedtime stories, may build patient engagement on a daily basis, but mental health features, such as teleconsultations or real-life chats with psychologists and psychiatrists, may gain appreciation of those who are really in need. **These solutions might be applicable both for individuals and for companies fighting employee burnout.** By offering such applications companies may encourage employees to achieve and maintain healthy lifestyle habits, at the same time keeping them connected in a world of remote work.

1. Source: World Health Organization. Data after the first year of pandemic.
2. Source: The company's financial statements. The average results for both companies: Calm (+28%), Headspace (+32%).

CASE STUDY

01.

KRY
Kry to roll-out digital mental health service across Europe

Kry created an internet cognitive behavioural therapy (ICBT) programme for mental health issues. The ICBT service is already available in Sweden and the company has plans for international expansion. The mobile app can be used to treat conditions such as depression, anxiety, stress, insomnia, parental connections and for chronic disease management for hypertension, diabetes and blood pressure. The platform connects clinicals that can speak over 30 languages and has been already involved in over 200 m patient interactions.

02.

Mindpax
Mindpax is a digital therapeutics tool company helping to manage patient's mental disorders

Mindpax applies a bracelet on the patient's wrist to collect long-term data including activity, sleep, mood, medication and psychosocial factors to gain a comprehensive view of the user's health metrics. The wearable is integrated with a mobile application where data are transmitted and sent to a secure database to help psychiatrist decide on a treatment method based on continuous monitoring of a patient. The company received EUR 1.3 m in financing for future development.

"

Technology has opened a new chapter in the approach to mental wellbeing and mental health treatment options. There is an increasing number of digital solutions dedicated to the prevention of mental health disorders from companies like Calm, Headspace and Meditopia. While these example players focus on prevention, more comprehensive applications digitalising relationships with psychologists and psychiatrists are now also more widely used, representing a major evolution in care interactions. Currently, **patients are more prone to use digital channels when it comes to doctor's appointments** *which is a simpler, more affordable and faster way of treatment.*

Innovative solutions sometimes come ahead of existing legislation, and regulatory bodies are still working on how to approach digital health solutions. We can however observe encouraging shifts due to the success of applications like Deprexis – a certificated application available on prescription intended for treatment of chronic depression.
The demand for mental health services and treatment options will continue to increase, and digital solutions, including mobile applications, are an effective tool to support current scarce resources*. Clinically certificated and technically integrated with HIS systems solutions will gradually become more trusted and used by patients and health systems.*

Thibault Ducarme
Partner
Life Sciences and Health Care

05.

Phygital Patient with chronic diseases is open to digital solutions, but is often not aware of them
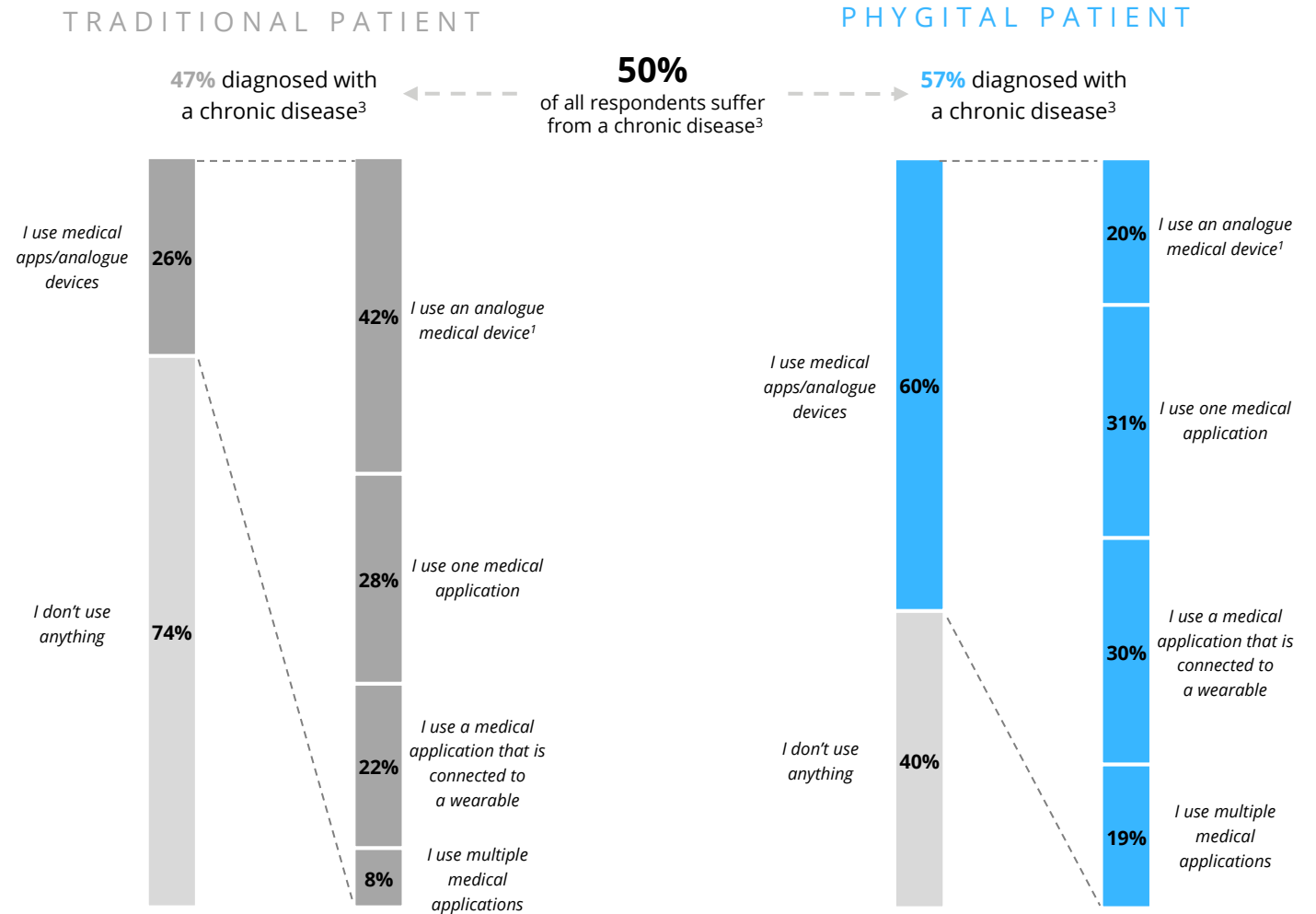
Phygital Patients are more than 2x more inclined to use apps and devices to track their health condition than Traditional Patients

Half of the surveyed Europeans suffer from chronic diseases, with **Phygital Patients being above the average**. But once diagnosed, this group is far **more likely to use any app/device specialised for monitoring or managing chronic diseases (60%).** The higher share of Phygital Patients with at least one chronic disease (57%) can be affected by the higher level of self-care, which leads to more frequent routine medical examinations, thus being more often diagnosed in early stages than others.

The biggest gap between Phygital and Traditional Patients occurs with regard to analogue devices, with twice as many Traditional Patients using them to track chronic disease-related parameters. On the other hand, **nearly 1/5 of Phygital Patients already use multiple medical apps,** compared to only 8% of Traditional Patients.

PATIENTS' USAGE OF MOBILE APPS/DEVICES[1] TRACKING THEIR CHRONIC DISEASES

% of patients declaring usage of health-related apps/devices[2]

TRADITIONAL PATIENT

PHYGITAL PATIENT

50% of all respondents suffer from a chronic disease[3]

47% diagnosed with a chronic disease[3]

57% diagnosed with a chronic disease[3]

Traditional Patient
- I use medical apps/analogue devices — 26%
- I don't use anything — 74%
- I use an analogue medical device[1] — 42%
- I use one medical application — 28%
- I use a medical application that is connected to a wearable — 22%
- I use multiple medical applications — 8%

Phygital Patient
- I use medical apps/analogue devices — 60%
- I don't use anything — 40%
- I use an analogue medical device[1] — 20%
- I use one medical application — 31%
- I use a medical application that is connected to a wearable — 30%
- I use multiple medical applications — 19%

1. Analogue medical device – medical equipment that is not connected to any application and can be used at home.
2. Responses to: *Do you use any health apps / medical devices to track your health condition related to your chronic disease?*
3. One or more chronic diseases. Types of chronic diseases examined in the study are listed in the methodology section.
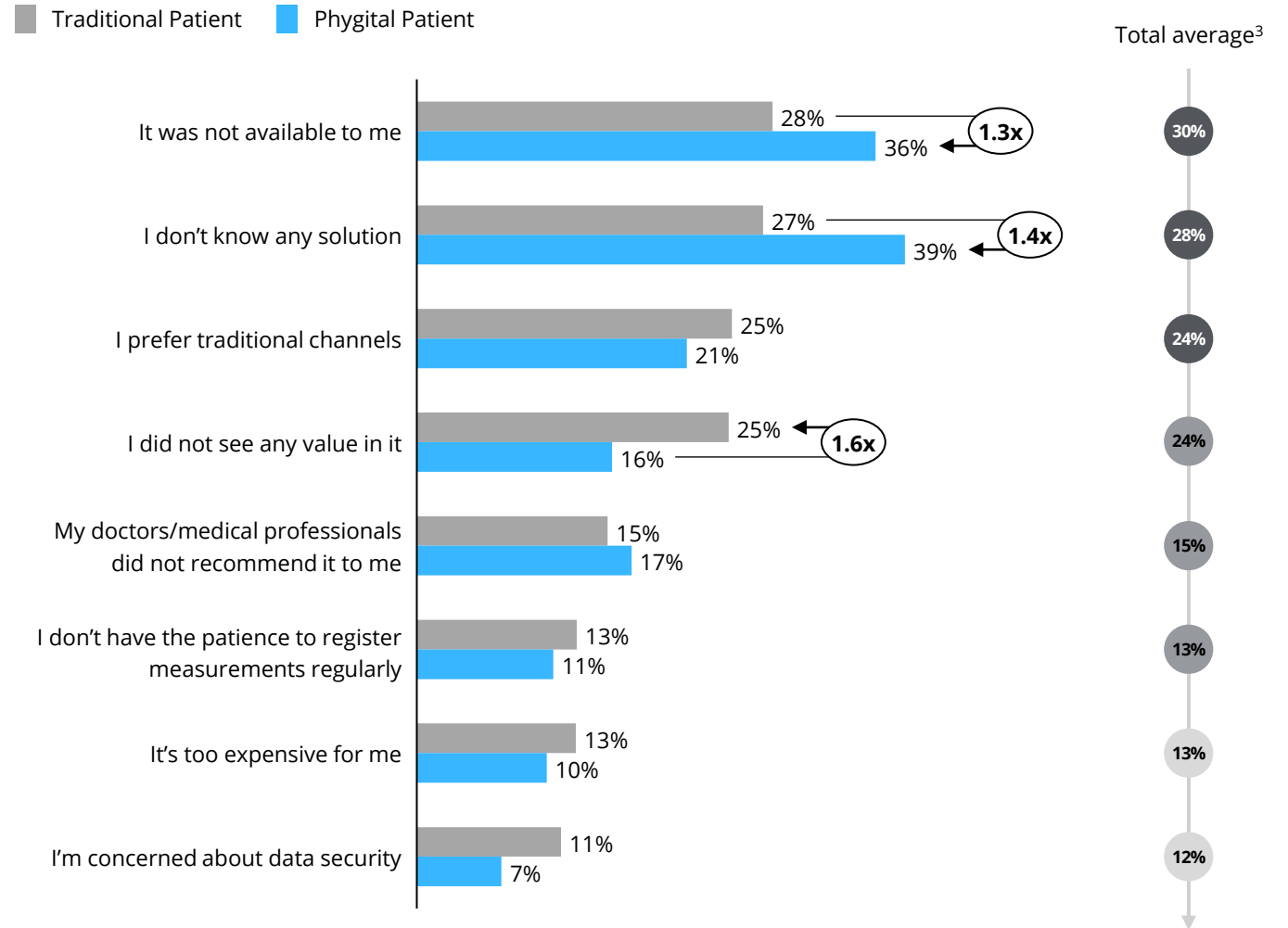
The biggest barriers to using chronic disease tracking solutions relate to their low availability and lack of patients' awareness

The most significant barriers to using chronic disease tracking solutions for all respondents are related to their **low availability (30%) and lack of awareness of any type of such solution (28%).**

What may seem counter-intuitive is that these factors are chosen by Phygital Patients far more often than by Traditional Patients – 39% of Phygital Patients chose lack of awareness and 36% lack of availability. On the other hand, **1/4 of Traditional Patients indicated that they preferred traditional channels or did not see value** in applications and devices they knew (1.6x higher result than among Phygital Patients). This means that Phygital Patients are more willing to use such solutions, but the **supply does not meet the demand of the target group yet.**

PATIENTS' BARRIERS TO USING MOBILE APPS/DEVICES DEDICATED TO MONITORING CHRONIC DISEASES[1]

Top8 factors influencing patients' decision to not use any apps/devices for tracking chronic diseases[2]

■ Traditional Patient   ■ Phygital Patient

Total average[3]

Barrier	Traditional Patient	Phygital Patient		Total average
It was not available to me	28%	36%	1.3x	30%
I don't know any solution	27%	39%	1.4x	28%
I prefer traditional channels	25%	21%		24%
I did not see any value in it	25%	16%	1.6x	24%
My doctors/medical professionals did not recommend it to me	15%	17%		15%
I don't have the patience to register measurements regularly	13%	11%		13%
It's too expensive for me	13%	10%		13%
I'm concerned about data security	11%	7%		12%

1. Responses to: *Why do you not use any apps / device?*
2. Types of chronic diseases examined in the study are listed in the methodology section.
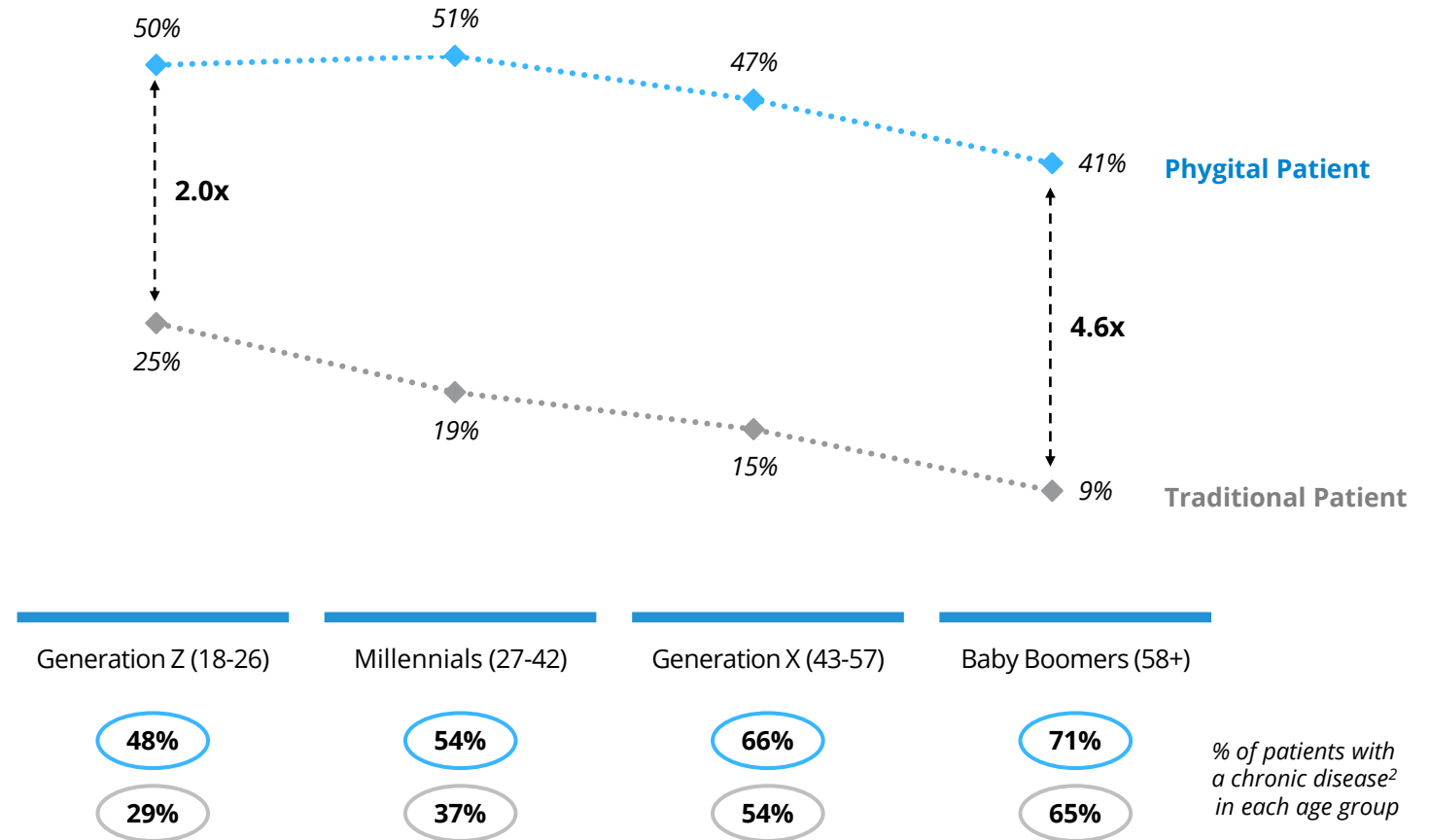3. Total average for all respondents.

Phygital Baby Boomers represent a nearly 5x bigger group than Traditional Baby Boomers when it comes to using digital solutions for chronic diseases

The usage of specialized digital solutions for chronic diseases falls with age. However, in this case the segment of young Traditional Patients also constitutes quite a significant group – **a quarter of Traditional Gen Z patients are keen on using technology to monitor their chronic diseases,** compared to only every tenth Baby Boomer.

The share of Phygital Patients using such solutions remains on a similar level, ranging from 50% to 41%. This means that **even the most mature Phygital Patients represent a promising audience for chronic diseases-related digital solutions,** being in need of an innovative approach towards monitoring and treatment.

PATIENTS' USAGE OF HEALTH-RELATED APPS/DEVICES TRACKING THEIR CHRONIC DISEASE

% of patients declaring their usage of at least one health-related application (separately or connected to a wearable)[1]

50% 51% 47% 41% **Phygital Patient**

2.0x

4.6x

25% 19% 15% 9% **Traditional Patient**

Generation Z (18-26)	Millennials (27-42)	Generation X (43-57)	Baby Boomers (58+)
48%	**54%**	**66%**	**71%**
29%	**37%**	**54%**	**65%**

% of patients with a chronic disease[2] in each age group

There is still an untapped niche in chronic diseases management

Chronic diseases are a major burden to patients and the healthcare system alike – according to WHO, 71% of all deaths worldwide are related to them[1]. Innovative digital solutions support patients in tackling their chronic diseases by providing holistic support for the overall management of their illness. However, there is **a discrepancy between patients' interest and healthcare providers' offer,** as around 30% of patients declare the lack of digital solutions dedicated to their diseases or low awareness of their availability. This creates a potential for companies to **introduce solutions that support patients in continuous chronic disease management**, such as medication reminders, tracking and monitoring of disease-specific vital parametres or education. More advanced data-driven solutions may determine if a patient should visit a doctor sooner than planned, potentially preventing an emergency room visit or an unfortunate event.

HOW TO WIN PHYGITAL PATIENT?

Innovative companies already realise the value of digital to address unmet Phygital Patient needs in terms of remote chronic disease management. One of the trending topics in this area is **digital therapeutics, which has the potential to enhance traditional treatments, help prevent medical disorders and offer entirely new alternatives to medication treatment**. They collect health data in a real-time time, providing doctors with in-depth insights into patient's condition. A growing number of start-ups and established technology companies are engaging in innovative applications, leveraging life sciences with the latest technology developments. For pharmaceutical and med-tech companies, **digital therapeutics is a chance to diversify their portfolios with a relatively low capital investment**, compared to the R&D expenditures connected with the development of medications or medical devices. The range of indications addressed by digital therapeutics is constantly evolving and they are being developed to support those suffering from chronic diseases.

1. Source: World Health Organization. Data as of 2019.

CASE STUDY

01. **Fresenius Medical Care**
Fresenius Medical Care uses virtual reality to train patients for home dialysis

The company recently developed a new method to train individuals in need of peritoneal dialysis by means of virtual reality (VR). It helps with the decision on whether doing peritoneal dialysis at home is the right move for a patient. It is an example of a global trend, where the customer's treatment is moved from a medical care facility to one's home, contributing to the effectiveness of the treatment. Currently, the company operates over 4k dialysis centres in 50 countries, having access to the data of almost 2 m dialysis patients worldwide.

02. **GlucoActive**
GlucoActive developed a first non-invasive glucometer to help people with diabetes

GlucoActive created GlucoStation, which is the first non-invasive glucometer in the world to undergo clinical trials. This small device enables painless measurement of blood glucose by means of a laser light. The device can be used in medical facilities, pharmacies, public places and at home. The company also offers wearable devices in the form of a band and watch – GlucoFit and GlucoWear. The devices allow measuring glucose levels in real time 24 hours/day. There is no need to replace sensors and measuring strips which makes it easier to use.

"

Phygital Patients benefit from the convergence of health, technology and social interactions that aims at improving healthcare delivery. **This patient group, being highly self-aware and digitalised, is more inclined to testing new healthcare solutions,** *which makes them prominent customers not only for medical service providers. They are the key addressees for the entire wellbeing & health ecosystems, dominated by lifestyle, medical, insurance and technological companies.*

We are entering the times of analogue devices decadence, leaving the scene to digital applications, the Internet of Things (IoT) and big data tools, **opening new opportunities for improvement of the delivery of health care services, including those addressed to patients with chronic diseases***. Predictive analytics applied to patient medical records can identify patients who are not being treated well or are most likely to progress in chronic disease. Digital therapeutics, by applying digitised behaviour change techniques, may prove to be much more effective than traditional pharmaceutical products. But we can see already the evolution of the next generation of chronic disease treatment solutions, such as software as a medical device (SaMD). They integrate and connect all stakeholders in the patient and disease management across the entire treatment journey.*

Digitalisation is indispensable for companies' pursuit of cost-effectiveness and performance improvement. **The rise of Phygital Patients can become a game-changer in the industry and will force implementation of phygitally-friendly ecosystems.**

Paweł Kuśmierowski
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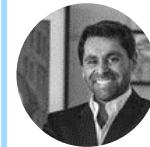
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OBJECTIVE OF THE STUDY

Deloitte's research was aimed at **identifying customers' wellbeing and healthcare habits** and assessing **digital tools adoption potential** in this area to assess whether modern technology can help people have a healthier life.

Customers were questioned about their **current usage and preferences towards health-related technologies**, as well as their needs, motivations and barriers in taking care of their health.

RESEARCH DESIGN

- As input for this study, we conducted a customer survey fielded by an independent research firm. The data quoted in the report are based on a representative sample of **11 000 adult (18-65 years old) smartphone users from 11 countries in Europe.**
- The survey was conducted using **Computer-Assisted Web Interview** (CAWI) method and **took place in Q1 2022.**
- Panellists were selected by means of a **stratified sampling** method and the layers determine the quotas (socio-demographic features).
- The sample structure was selected separately for each country and is **demographically representative** based on the Eurostat data.

DEFINITIONS

Wellbeing – all activities performed to take care of both physical and mental health on a daily basis, allowing e.g. to reach a good physical condition, manage stress and achieve high life satisfaction.

Healthcare – all activities related to diagnosing, treatment and monitoring of a health condition, e.g., doctors/medical professionals' appointments, examinations, treatment of diseases and taking care of chronic diseases (if applicable).

Chronic diseases – types of chronic diseases examined in the study: cardiovascular diseases, chronic respiratory diseases, diabetes, obesity, chronic kidney disease, chronic pain, sexually transmitted diseases, mental illnesses, autoimmune diseases and cancer.

Wearables/devices – devices supporting both wellbeing and healthcare management, such as smartphones, smartwatches as well as smart medical devices which help, among others, track the activity, sugar level or blood pressure.

Traditional Patient – is a person that uses up to 4 mobile applications dedicated to wellbeing and/or healthcare (level of digitalisation: light user) and performs from 4 to 8 activities when taking care of health (level of self-care: moderate). Traditional Patients comprise 49% of the population.

Phygital Patient – is a person that uses 5 and more mobile applications dedicated to wellbeing and/or healthcare (level of digitalisation: heavy user) and performs from 4 to 11 activities when taking care of health (level of self-care: moderate and high). Phygital Patients comprise 15% of the population.
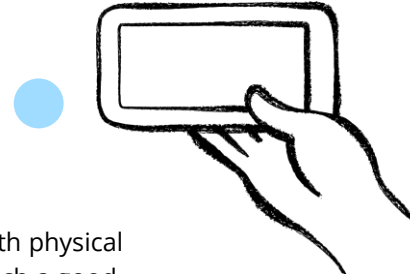
PLACE

SAMPLE
N = 11000
N = 1000 on each market

DATE
Q1 2022

METHOD
CAWI
Computer-Assisted Web Interview

Deloitte. Digital

Thank you.