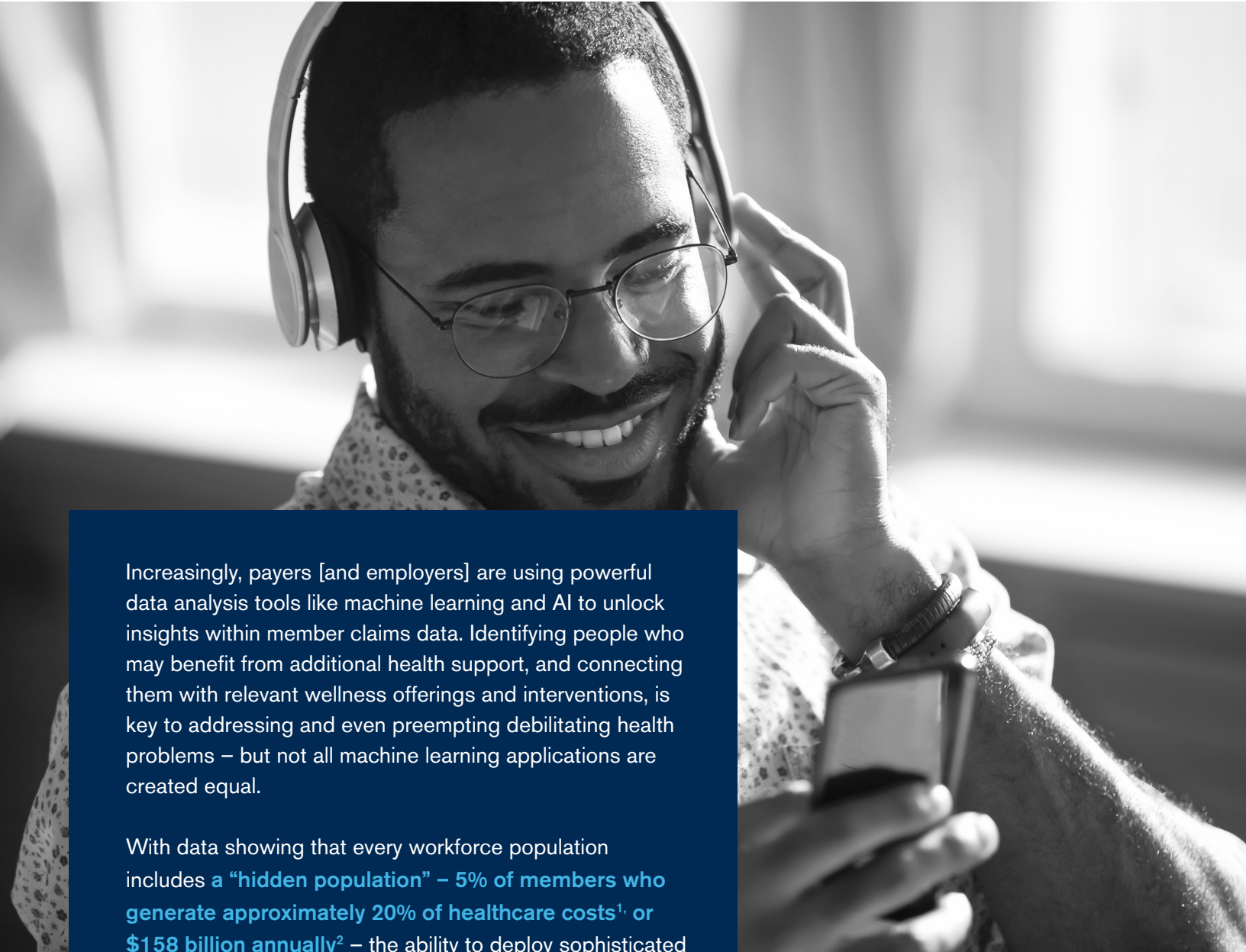# Leveraging data science to capture the unengaged.

Increasingly, payers [and employers] are using powerful data analysis tools like machine learning and AI to unlock insights within member claims data. Identifying people who may benefit from additional health support, and connecting them with relevant wellness offerings and interventions, is key to addressing and even preempting debilitating health problems – but not all machine learning applications are created equal.

With data showing that every workforce population includes a "hidden population" – 5% of members who generate approximately 20% of healthcare costs[1,] or $158 billion annually[2] – the ability to deploy sophisticated data science to both identify and engage these individuals is a crucial business and public health advantage.
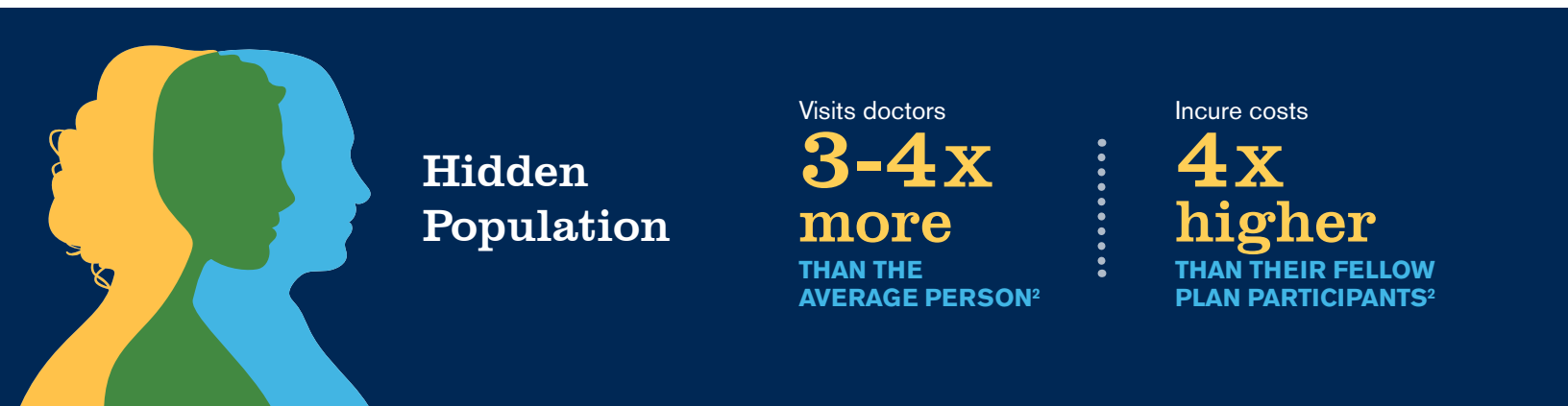
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Using machine learning to identify patterns that inform health guidance needs.

Millions of Americans manage multiple chronic health concerns – and many are among the "hidden population" utilizing healthcare at a high rate and high cost, without seeing their health improve. **This population tends to visit doctors and clinics 3-4 times more than the average person[2], and incur, on average, costs that are about four times higher than their fellow plan participants[2].**

Knowing that these individuals may have conditions that require frequent care like diabetes, high cholesterol, or depression – and even connecting them with wellness programs intended to support each condition -- is not enough to move the needle on their overall health.

Sophisticated algorithms, AI, machine learning, and data science make it possible to engage this hidden population with precision to help improve their health without adding cost to the system.

More traditional health and wellness offerings often address only one condition and may require members to self-identify a health need -- such as lack of exercise, or sleep -- that they may not be aware of or informed about. That's where machine learning can play a significant role. Wellness programs that leverage claims data associations to identify comorbidity patterns can enable stakeholders to engage members and employees proactively.

Hidden Population

Visits doctors
3-4x more
THAN THE AVERAGE PERSON[2]

Incure costs
### 4x higher
THAN THEIR FELLOW PLAN PARTICIPANTS[2]

Learning from detailed data.

Individuals utilizing the health system at a high rate are a highly heterogeneous group, making it difficult to both identify and then, engage them. But, we can use the data clues hiding in plain sight to engage them.

Claims themselves are incredibly detailed -- and, unfortunately, you can't use a single ICD-10 code to

uncover individuals that are utilizing the health system at a high rate. However, by creating and utilizing models that assess data on multiple facets including comorbidities, frequency of care, and treatment outcomes/plans, payers and employers can better understand what this population needs, and provide them with life-changing, personalized support. According to The 2020 Chronic

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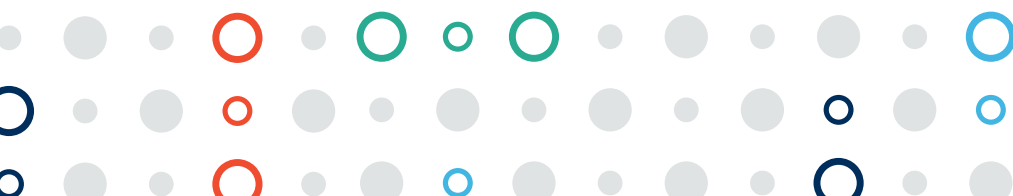
Care Action Index, 56% of healthcare providers see their patients with multiple chronic conditions at least bi-monthly, yet 76% of people with multiple chronic conditions report their health hasn't improved in the past year, compared with just 12% of people with no chronic conditions. **Further, a study found that out-of-pocket spending rose as the number of chronic conditions increased, with the largest increase occurring between zero and one condition (92% increase), and between two and multiple conditions (79% increase)[3].** Utilizing claims to uncover these individuals holds the power to not only improve health outcomes but lower costs to the individual and the payer as well.

56%

OF HEALTHCARE PROVIDERS
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2 OR MORE CHRONIC CONDITIONS
AT LEAST BI-MONTHLY

76%

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THE PAST YEAR

Machine learning technology must be paired with personalized, human support to drive lasting change.

Data science is a critical tool but it is not the solution. Importantly, it's not just the algorithm that makes a difference -- it's the human connection that can make a real impact in health outcomes, and machine learning can improve this connection.

Because machine learning grows more fine-tuned with every new data set it's exposed to, including data on participant experience which includes their engagement and interactions within a wellness program alongside claims data is critical. This enables the model to learn, in the most literal sense, what works for one person may not work for another, and vice versa.

It is critical that when people with complex health concerns are identified, health and wellness offerings engage these specific individuals with tailored support, leveraging the data-driven insights we discussed earlier. This includes personalized health guidance on medication, nutrition, fitness, and other factors impacting wellness like sleep and mental health that are proven to make a difference in individual outcomes, and in costs.
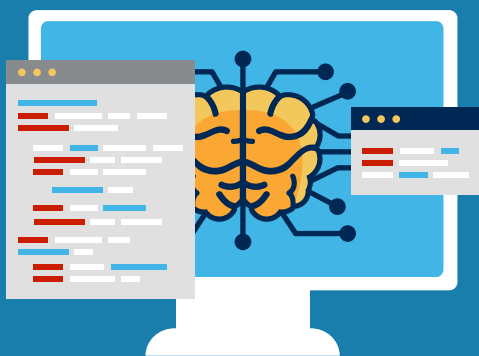
...machine learning grows more fine-tuned with every new data set it's exposed to, including data on participant experience alongside claims data...

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Using technology to keep individuals engaged.

Within this model, data analysis and artificial intelligence can easily make a person's head spin. It's really what we do with the information and technology at our fingertips that makes all the difference – and that's where the human connection comes in.

The Chronic Care Action Index found that exercise (51%), eating healthier (40%) and getting more sleep (38%) were the changes people most wanted to make in relation to their health – but found most difficult to make. Also, nearly one-third of respondents (29%) cited motivation as a barrier to following their doctor's guidance. In order to support these changes and provide motivation, a personalized relationship must be developed. The top factors for "an ideal health care experience" in the Deloitte 2020 Survey of US Health Care Consumers were doctors who listen to/care about them, doctors who don't rush, and clear communication[4].

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To provide this desired support and achieve high participation rates, health and wellness offerings must provide solutions that are available where and when individuals need them. Whether via video chat, text, phone, or otherwise, programs need to utilize methods that are easy and accessible. Regardless of how individuals engage, if it fits into their lifestyle, they will likely engage at a higher rate and as a result, see continued growth towards their health and wellness goals.

Technology like machine learning, AI and sophisticated algorithms allow payers and employers to see a bigger picture and unlock the ability to provide personalized and accessible guidance that will bring forward the best in health and wellness offerings.

Changes people most wanted to make to their health

38%
MORE SLEEP

51%
EXERCISE

40%
HEALTHIER EATING

29%
CITED MOTIVATION AS A BARRIER TO FOLLOWING DOCTOR'S GUIDANCE

Learn more at MOBEforlife.com

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SOURCES:

1 Based on 180MM Americans receiving insurance through their employer as of 12/31/18.
https://www.census.gov/content/dam/Census/library/visualizations/2019/demo/p60-267/Figure_1.pdf

2 MOBE data on file, March 2020. https://www.MOBEforlife.com

3 Paez KA, Zhao L, Hwang W. Rising out-of-pocket spending for chronic conditions: a ten-year trend. Health Aff (Millwood). 2009;28(1):15–25. doi:28/1/15. 10.1377/hlthaff.28.1.15.

4 Based on the Deloitte 2020 Survey of US Health Care Consumers, August 13, 2020. https://www2.deloitte.com/us/en/insights/industry/health-care/consumer-health-trends.html#:~:text=A%20trusted%20clinician%20relationship%20remains,t%20rush%2C%20and%20clear%20communication.