



Innovative technologies promise to transform healthcare for payers, providers, and patients with greater convenience, efficiency, and security

Consumers enjoy seamless digital experiences every day of their lives, yet many innovations we take for granted are still missing in healthcare. Both healthcare payments and claims processes are convoluted, confusing, and time-consuming. Nor can consumers feel confident that their patient data is secure. While the rare data breach at a retailer or bank makes headlines, the healthcare industry experiences a major data breach every day.¹ With U.S. healthcare costs expected to rise 5.5% annually,² innovative technologies can help overcome three critical challenges plaguing the healthcare system:

- **Patient Payments** – Facing increased out-of-pocket responsibility for their medical expenses, patients struggle to afford their medical bills—forcing providers to send an average of 3.3 billing statements before receiving payment for an outstanding medical bill.³
- **Fraud, Waste, and Abuse** – Claims that contain errors, lack documentation, or are fraudulent lead to overpayments by payers—and higher healthcare costs for consumers. FWA cost payers in the U.S. an estimated \$240 billion annually.⁴
- **Cybersecurity** – 365 large-scale data breaches were carried out on healthcare systems and portals in 2018¹ and the number of patient records stolen more than doubled in 2019 versus 2018.⁵ And since the COVID-19 pandemic, cyber-crimes have spiked from 1,000 complaints daily to between 3,000 and 4,000.⁶

To better understand how Mastercard is leveraging innovative technologies to address these critical challenges, we talked with Marie Aloisi, Senior Vice President, Mastercard Healthcare Solutions.

Capture more earned patient revenue using predictive analytics

Patients' out-of-pocket medical costs rose 12% in 2018⁷—and 68% of patients with bills of \$500 or less fail to pay off their hospital bills in full.⁸ This directly impacts providers' bottom lines, as tens of billions of dollars in services each year go unpaid. The challenge of getting paid is exacerbated by the limitations of current practice: patients' ability to pay is usually based on a simple credit score. We asked Aloisi how Mastercard technology could help capture more patient revenue. "Predictive analytics can help better understand and segment patients," Aloisi explains. "Unlike one-dimensional credit scores, our multi-dimensional Test & Learn® platform analyzes dozens of factors, such as services received, treatment frequency, average charge per visit, patient payment burden, billing and payment history. From that analysis, we can create billing strategies customized to each patient." A \$4 billion health system in the southeast U.S. used predictive analytics to test if different levels of discounts would motivate patients to pay their balance. The model identified \$25 million the health system could gain in payments, plus \$6 million in additional revenue by targeting financial assistance to the right patients.

1. Data breaches of 500+ records. HIPAA Journal, "Analysis of 2018 Healthcare Data Breaches," Jan 2019.

2. U.S. Centers for Medicare & Medicaid Services, National Health Expenditures, 2018–2027.

3. Becker's Hospital CFO Report, "A new patient engagement model for payment collection," Oct 2017.

4. Low estimates of fraud, abuse, and overreatment in 2011. Donald M. Berwick and Andrew D. Hackbarth, "Eliminating Waste in US Health Care," Journal of American Medical Association, 307, no. 14, Apr 2012.

5. Mastercard NuData Q4 2019.

6. The Hill, "FBI sees spike in cyber crime reports during coronavirus pandemic, Apr 2020.



Reduce fraud, waste, and abuse to help keep claims-related costs down and revenues up

The second challenge facing us: the high proportion of erroneous or fraudulent claims, which cuts into payers' revenues and drives up the cost of healthcare. Compounding the problem is a cumbersome claims process and "pay and chase" tactics—investigating claims after they have already been paid—resulting in a small percentage of these lost dollars ever being recovered.

"What if you could prevent an overpayment before it occurs?" Aloisi asks. Mastercard can detect fraud the moment a claim is received. "Mastercard assesses more than 1 billion payment transactions every day. We use artificial intelligence, machine learning, and other tools to analyze thousands of data points," she explains. "Our AI models have now been trained to identify healthcare claims fraud, prescription abuse, and other challenges," says Aloisi.



Protect the healthcare ecosystem with holistic cybersecurity solutions

Healthcare data is an attractive target for hackers because they can get \$250 on the dark web for each stolen patient record—compared to \$5.40 for a payment card and only 53 cents for a social security number.⁹ Breaches are not only costly—on average, \$429 per stolen record¹⁰—they also damage the reputations of providers and payers. Yet the healthcare industry ranks near the bottom in cybersecurity preparedness, ranking 15th among 17 major U.S. industries.¹¹ We asked Aloisi about Mastercard's approach. "We have been securing personal, commercial, and payment data successfully for decades," says Aloisi. "Mastercard takes a multilayered approach to healthcare data:

- We **secure the payment credentials** of each patient through tokenization
- We **authenticate patients** as they sign in through an app or portal through passive biometrics or active biometrics when the interaction is risky
- We **secure and assess cyber vulnerabilities** of the entire environment at every entry point—patient portals, websites, mobile apps, data warehouses, external partners—to detect cybersecurity threats in real time."



Meet key healthcare challenges with innovative technology and industry expertise

"With Mastercard as a technology partner, healthcare organizations can capture more patient revenue; reduce fraud, waste, and abuse to keep costs down and revenue up; and protect data," said Aloisi. "No other source can do all of these things. Our technology, expertise, and commitment bring unique value to payers, providers, and patients, so the healthcare industry can focus on what matters most—helping people enjoy healthy lives." ■

7. TransUnion Healthcare, "Out-of-Pocket Costs Rising Even as Patients Transition to Lower Cost Settings of Care," Jun 2019.

8. In 2016, TransUnion Healthcare, "Patients May be the New Payers, But Two in Three Do Not Pay Their Hospital Bills in Full," Jun 2017.

9. 2018 Trustwave Global Security Report.

10. IBM Security, Ponemon Institute, Cost of a Data Breach Report, 2019.

11. SecurityScorecard, 2018 Healthcare Cyber Security Report.

