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## THE ROLE OF eRx IN LOWERING PHYSICIAN DRUG EXPENSES

Las Vegas Physicians Group and MCO Parent Save Nearly \$5 Million Annually  
Through eRx-Driven Increase in Generic Utilization and Script-Refill Efficiencies

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### SUMMARY

#### CAN eRx BOOST MCO'S GENERIC FILL RATES?

Managed care organizations (MCOs) strive to deliver viable health benefits programs at a price employers and patients can afford. In recent years, however, that mission has been challenged by the rising cost of prescription (Rx) drugs. Even as the double-digit Rx price hikes of the late 1990s have slowed, drug price increases remain significant with pharmacy dollars accounting for nearly one-fourth of overall healthcare spending increases.<sup>1</sup>

To get a handle on spiraling pharmacy costs, more MCO's are turning to generic substitution programs, which aim to increase the total percentage of lower-cost generic drugs prescribed and filled. Unfortunately, many generics programs have met with limited success, as physicians resist being weaned from their old prescription patterns and preferred medications.

Electronic prescribing (eRx) offers a more direct path to physician compliance on generics utilization. Surveys of physician groups that use eRx applications indicate that the technology can change physicians' generic prescribing habits by putting formulary information directly into their hands at the point of care, providing automated alerts whenever generic alternatives are available. Electronic prescribing also offers significant clinical value by giving physicians access to clinical decision support, including a system that checks for inconsistency in dosage, allergies or interactions with existing drugs, or duplicate therapies.

This paper examines a successful eRx program at Southwest Medical Associates (SMA) of Las Vegas, the largest multi-specialty physician group in Nevada with 235-physicians and 650,000 annual outpatient visits. SMA, which is a subsidiary of Nevada's largest MCO, publicly-traded Sierra Health Services (SHS), hoped eRx would help its physicians better identify opportunities to prescribe generic drugs as alternatives to more costly brand name medications. Doing so would help reduce the group's pharmacy benefit costs.

After three years of using the *TouchWorks Rx+*<sup>TM</sup> ePrescribing solution from Allscripts, by December 2005 SMA's generic fill rate (GFR) had achieved a 4.8% lead over a controlled group of physicians in other SHS network groups that do not use electronic prescribing. Because every one point increase in GFR equals a cost savings to the organization of 1.5%, SMA's increased generic utilization saves \$4.75 million each year, or 7.2% of its 2005 drug spend of \$66 million. TouchWorks, which is a full electronic health record (EHR), also greatly streamlines the process of approving prescription refills, in the process creating indirect financial savings to SMA of \$208,640 a year through increased nurse productivity.

Taken together, TouchWorks' positive financial impact of \$4.96 million annually has netted SMA a reduction in costs of \$5.17 per prescription on average. SMA's solution also has increased formulary compliance for the group's physicians, and enhanced patient safety. Thanks largely to its eRx initiative, SMA now has a generic utilization rate of 73.2%, one of the highest rates in the country.

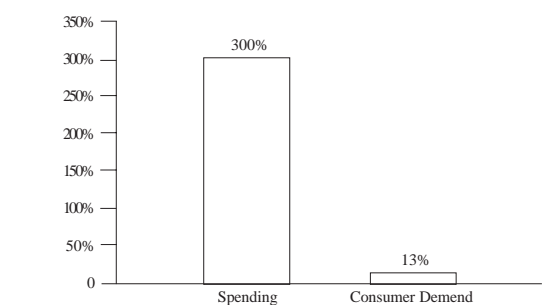
### BACKGROUND

#### GENERICS: THE \$20 BILLION GORILLA

It is estimated that Americans spent close to \$200 billion on prescription drugs in 2005, nearly twice the amount they spent in 2000 and four times the total for 1990.<sup>3</sup> That 300% increase in spending over the last 15 years cannot be accounted for by consumer demand, which the National Center for Health Statistics says has increased by only about 13% since 1988, after correcting for population growth (Figure 1).<sup>4</sup>

MCOs and pharmacy benefits managers (PBMs) have sought to counter rising pharmaceutical prices using three basic tools - generics, specialty pharmacy and mail-order. Of the three, higher generic utilization holds by far the greatest promise for cutting costs.

FIGURE 1. INCREASE IN RX SPENDING VS. CONSUMER DEMAND (1990 - 2005)



According to a study by Express Scripts, one of the nation's largest PBMs, American consumers could have saved \$20 billion in 2004 by using generic drugs, which is about the amount community hospitals spend each year on uncompensated care for the uninsured. Express Scripts' 2004 Generic Drug Usage Report, released in October 2005, was based on a random sample of about three million people and examined six drug categories used to treat common conditions such as depression, high blood pressure, inflammation, stomach ulcers, and high cholesterol.

The average price of a generic drug was less than one-third that of the average brand name drug in 2004 (\$28.74 vs. \$96.01), according to the National Association of Chain Drug Stores.<sup>5</sup> For each percentage point increase in generic fill rate, plan-sponsor pharmacy spending falls an estimated 1.5%. Consumers also pay a lower co-payment for generic medications, saving, on average, between \$7 and \$30 per prescription, compared to branded medications.<sup>6</sup>

Yet, despite the obvious bottom-line benefits of generics, the Express Scripts study found significant variations in their use across the country. The overall generic fill rate in 2004 varied from a low of 41% in New Jersey, to a high of 56% in Oregon, Massachusetts and New Mexico (Nevada's average rate was a middle-of-the-road 51%).

#### PHYSICIANS AND GENERICS

Physicians have clear incentives to prescribe branded medications even when a generic alternative is available. In 2004, physicians received more than one billion branded drug samples, three for every person in the U.S., valued at nearly \$16 billion, an 18% increase over 2003, according to data from IMS Health, Fairfield, CN. By contrast, makers of low-priced generic drugs rarely provide samples to doctors because of the expense and lack of sales forces.

MCOs and PBMs have responded by trying to educate physicians about the benefits of generics and by providing fiscal incentives for their use. Many send letters encouraging physicians to prescribe generic drugs or the drugs on the formulary, or alert physicians when they prescribe drugs not

indicated for a patient's diagnosis. Some offer fiscal rewards to physicians for complying with pharmacy benefit rules, or produce report cards based on drug utilization review of a doctor's prescribing patterns measured against their peers.

Taken together, physician education and generic prescription incentives have generally failed to encourage significant, long lasting changes in the generic fill rate of most physician practices.

#### eRx: THE STRAIGHT PATH TO A HIGHER GENERIC FILL RATE

Electronic prescribing has evolved from its infancy as a crude formulary reminder device to a powerful suite of solutions. Most eRx solutions include drug interaction and allergy checking, formulary reminders, dosage recommendations specific to the patient and their disease state, and direct connectivity to pharmacies for near-instantaneous transmission of prescriptions or refill authorization. Along the way, the technology has improved both the bottom line and patient care.

Study after study has proven eRx's ability to solve the pharmacy expense problem:

- Medco Health Solutions found that physicians using eRx increased their generic substitution rates by more than 15 percent, their generic dispensing rates by more than 8 percent, and formulary compliance by 3.4 percent within the first six months of implementation.<sup>7</sup> Medco, one of the nation's largest PBMs, reported that eRx saved the physicians money, too. The technology led to an overall 42 percent reduction in the number of pharmacy calls to the physicians' offices related to formulary compliance and a 30 percent reduction in calls related to prescription illegibility, compared to physicians not using the technology.
- A study published in the *Journal of Managed Care Pharmacy* found that primary care physicians using eRx were able to reduce their prescription drug costs by 5.3 percent over a one-year period.<sup>8</sup> The study found that e-prescribing led to a reduction in costs of \$2.57 on average per prescription compared to a control group. The authors concluded that "the savings on medication cost alone overwhelmed the monthly subscription fee for the electronic prescribing system."
- In the largest study of ambulatory eRx ever, Cap Gemini Ernst & Young in 2000 analyzed nearly 700,000 records from more than 1,200 physicians and found that the *TouchScript*<sup>TM</sup> eRx solution from Allscripts, of Chicago, increased physicians' generic fill rate by nearly 12% (up from 43% to 55.5%). The study also revealed a savings of up to \$3.20 per prescription for physicians using the Allscripts solution.

Further bolstering support for eRx, a number of high-profile peer-reviewed studies have provided evidence that the technology can deliver a wide array of related benefits such as freeing up pharmacist time spent processing orders, and addressing patient dissatisfaction with the paper prescribing process. Even more impressive, several recent studies suggest that eRx in combination with an EHR can significantly reduce the frequency of medication errors, which result in the mortality of an estimated 7,000 Americans each year.<sup>9</sup> The Center for Information Technology Leadership, for instance, estimates that nationwide adoption of eRx in the outpatient setting could prevent more than two million adverse drug events and 190,000 hospitalizations each year, saving up to \$44 billion annually.<sup>10</sup>

Swayed by the evidence that eRx delivers solid financial and safety benefits to healthcare organizations and patients, the federal government has pushed for its widespread adoption. Michael Leavitt, the Secretary of Health and Human Services, announced in early 2005 proposed regulations that would facilitate the use of electronic prescriptions when the Medicare drug benefit takes effect in 2006. Physician groups that have already begun using eRx in combination with an EHR will have a clear advantage in treating and being reimbursed for care of Medicare patients under the new CMS program.

## THE SOLUTION

### EARLY STEPS TOWARD eRx

SMA began looking for an eRx application for its more than 200 physicians in 2002. Executives at Sierra hoped eRx would help reduce pharmacy expenses by speeding the prescription process, increasing generic utilization and formulary compliance, reducing pharmacy call-backs, and streamlining the refill process. At the same time, SMA executives were looking for a new electronic health record for the practice.

In searching for an eRx solution, SMA selected Allscripts. The company not only had a long record of success with eRx -- its customers generate almost as many prescriptions as the rest of the industry combined -- but its modular, web-based *TouchWorks*<sup>TM</sup> EHR included a full eRx module called *TouchWorks Rx+*<sup>TM</sup> that could be implemented as a stand-alone solution. Allscripts also was closely integrated with IDX<sup>®</sup> Systems Corporation, now part of GE Healthcare, the maker of SMA's Groupcast<sup>®</sup> practice management system. The strategic partnership between the two companies delivers clinical and financial applications that are tightly integrated, enabling customers to streamline billing, improve cash flow, provide detailed financial practice analysis and simplify patient record keeping.

SMA implemented the *TouchWorks Rx+* ePrescribing module as a stand-alone system beginning in February 2003. In the third quarter of that year, the group began to implement the full *TouchWorks* EHR, gradually giving its physicians instant access to each patient's medical chart, including their medication history. The EHR was deployed in every exam room via "thin-client" computers, which are stripped-down machines with little or no application logic that communicate directly with Allscripts' secure, web-based servers. By putting thin clients in every exam room, SMA ensured that *Rx+* and the rest of the EHR would be as ubiquitous as pen and paper.

### PHYSICIAN INCENTIVES ENSURE UTILIZATION

Sierra Medical Associates launched the new eRx system with a highly effective financial incentive program to encourage its adoption by physicians. Long before this, SMA had already begun to base physician bonuses on the entire group's performance against Sierra's pharmacy budget. The more that SMA physicians prescribed generic alternatives to brand name drugs, the larger the group's bonus pool grew. Individual physicians received a higher or lower percentage of the total pool based on their performance against quality and customer service measures.

With the start of the EHR implementation, SMA modified its bonus policy just enough to make a difference. The change mandated that, as of January 2004, only SMA physicians who were 100% *TouchWorks Rx+* compliant would be eligible to receive bonuses (the change applied only to the 180 SMA physicians who prescribe medications; the other 55 MDs are hospitalists and anesthesiologists, who do not write prescriptions). For such a small change, the policy adjustment had a large and swift impact. Within one month, 90% of all prescriptions written at SMA were ePrescriptions. By the end of two months, every last SMA physician was using *Rx+* to prescribe medications electronically. During the same time frame, the practice went from zero ePrescriptions to its current average level of 80,000 electronic scripts per month, making it one of the highest-volume eRx groups in the nation.

### HOW IT WORKS: SIMPLE, STRAIGHTFORWARD

Prior to implementing *Rx+*, SMA physicians wrote all of their prescriptions by hand. They also manually completed an office visit checklist to document all medications prescribed for each patient that was filed in the paper chart. Physicians were provided educational materials to encourage them to prescribe generic drugs whenever appropriate, but there was no systematic way to remind them about particular drug choices at the point of care.

Today, the process is dramatically different. In a typical encounter, the physician enters the patient's name and a di-

agnosis into *TouchWorks* and then chooses from a pop-up menu of available medications. The system automatically notifies the physician of the formulary status to ensure that the chosen medication is covered by the patient's health plan (93% of SMA's patients are insured by Sierra Health Services; the group takes care of more than three-fourths of SHS's patients). Notification is graphic and hard to ignore, enhancing its effectiveness. If the physician selects a medication that complies with the formulary, a green smiley face icon pops up on their screen. If the chosen drug is not on the formulary, they see a red, frowning face and *Rx+* automatically suggests generic substitutions, which must be accepted or manually overridden. The system then checks the selection against the patient's medical record with a 5-step automatic drug utilization review, screening for drug interactions, prior adverse reactions (allergies), duplicate therapies, proper drug dosage and drug-to-health state verification.

The physician then selects strength, dosage and number of refills, and *TouchWorks*' built-in clinical decision support double checks for inconsistency in dosage. Finally, the physician selects the pharmacy from a drop-down menu and sends the prescription with the push of a button. Depending on the pharmacy, the system then emails or faxes the prescription, and the medication is filled and waiting by the time the patient arrives. Because the system is integrated with the EHR, the patient's medical history is automatically updated after each visit, sparing clinical staff the effort of hand-keying the data into the system.

#### SURESCRIPTS CONNECTIVITY

In the past, eRx applications suffered from a lack of connectivity. Because they could not communicate directly with pharmacies and PBMs, which for the most part distrusted the new technology, the early applications were merely isolated databases. They were adopted by a handful of tech-friendly physicians but most practices considered them expensive toys.

Executive Medical Director, Dr. Craig Morrow, says SMA's eRx solution has had a profound impact on the group's physicians. *"After using this system for three years, nobody here would ever hand-write another prescription. SMA practitioners have seen the light and realize that there is a world of difference in quality. Our physicians realize that electronic prescriptions represent a quantum leap forward in healthcare delivery."*

Today, SureScripts' national electronic pharmacy network has transformed the Rx landscape, enabling direct computer-to-computer exchange of new prescription and renewal authorization information between physicians and pharmacists. More than 85% of US pharmacies are SureScripts connected,

and most of the rest plan to implement the technology within the next five years. Through its strategic partnership with SureScripts, Allscripts enables SMA to interface with the national pharmacy network directly through *TouchWorks*.

This seamless interaction is invisible to physicians but its effect is powerful: At the push of a button, the physician's prescription, electronic signature and authorization are sent electronically to the pharmacy of their choice, and return verification is automatically entered into the patient's record. No more illegible handwriting. No more nursing of fax machines, or follow-up phone calls to and from the pharmacy. The whole process is complete in less than a minute, allowing the physician to spend more time with the patient and less time managing details.

## THE BENEFITS

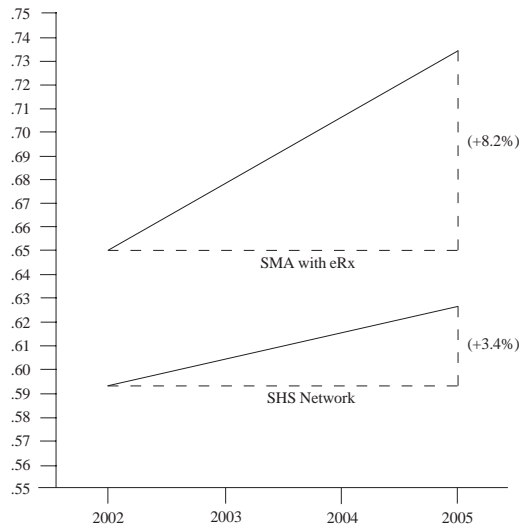
### GENERIC FILL RATE UP 4.8% VS. CONTROL GROUP

By December 2005, nearly three years after SMA first implemented eRx, the group's generic fill rate, already one of the highest in the nation at 65%, had increased 8.2 percentage points to 73.2% of all prescriptions (Figure 2). During the same time period, by contrast, physicians in SHS's network outside of SMA - who lacked access to eRx tools and electronic records - saw their GFR rise by just 3.4 percentage points (from 59.3% to 62.7% of all prescriptions).

All other factors being equal, SHS attributes SMA's 4.8 percentage-point enhanced improvement relative to the network control group to the use of e-prescriptions. (Most medical groups showed some improvement in GFR from 2003-2005 as more generic drugs became available but SMA's improvement is unprecedented.) Because every one-point increase in GFR equals a cost savings to the organization of roughly 1.5%, the 4.8% difference amounts to about \$4.75 million in annual savings attributed to *TouchWorks Rx+*. Put another way, the benefit to SMA of using ePrescribing amounts to 7.2% of the group's 2005 drug spend of \$66 million.

Thanks largely to SMA's eRx initiative, Sierra Health Systems now claims the highest generic utilization rate of any MCO in the country. The network's high generic fill rate benefits patients as well as the bottom line. A 2001 study found that, even with Medicare coverage, 16% of seniors still cannot afford medications.<sup>11</sup> Because low-income patients are more likely to fill a generic prescription than a brand-name script, physicians can encourage therapy plan adherence and improve outcomes by prescribing higher levels of generic drugs.

FIGURE 2. GENERIC FILL-RATE COMPARISON



SMA's Generic Fill Rate Outperformed the Control Group Between 2002 and 2005

### REDUCED STAFF TIME SPENT ON REFILLS

While eRx saves physicians time in the exam room, its most significant time savings comes in the form of reduced pharmacy calls and far quicker medication refills. Prior to implementing Rx+, SMA's refill process followed a typical pattern for paper-based practices:

- Patient calls the pharmacy or physician's office to request a refill
- Patient and pharmacy information is hand recorded
- Patient's chart is pulled
- Nurse or physician reviews information
- Prescription is phoned in or faxed to the pharmacy
- Patient is phoned and notified

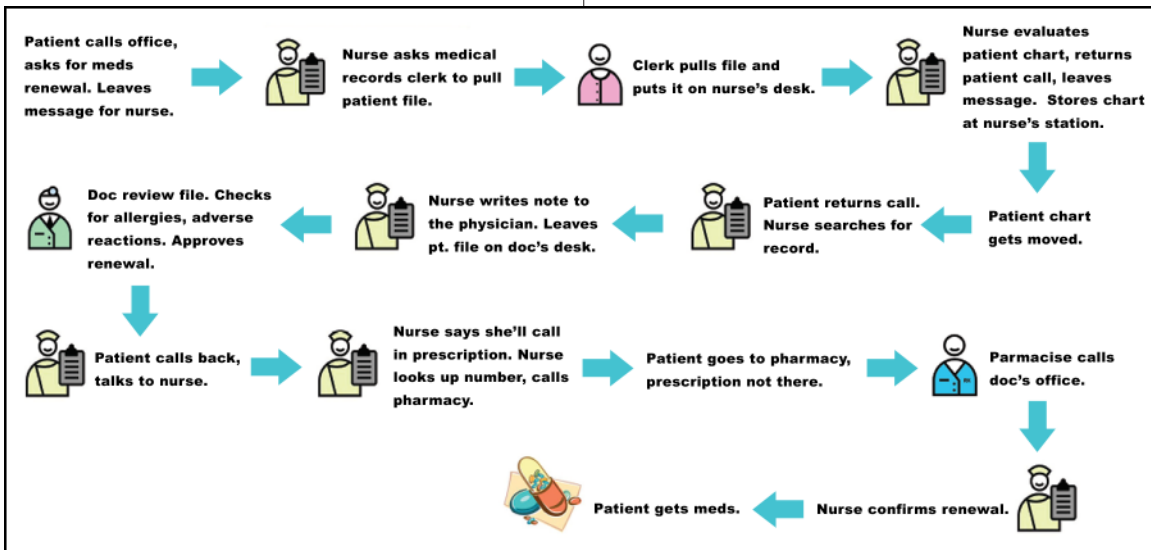
With the new *TouchWorks* enabled renewal process, staff workload is dramatically reduced:

- Patient calls pharmacy requesting a refill
- Pharmacy sends electronic request to physician via nurse
- Nurse (or physician, in the case of a controlled substance) reviews request and approves electronically
- Approval arrives in pharmacy's computer system
- Pharmacy fills script and contacts patient

Several recent studies indicate physician practices reap substantial financial rewards from eRx's refill efficiencies. At the Rhode Island Electronic Prescribing Project, eRx generated time-savings of one hour per nurse per day by streamlining the refill process. A large Lexington, KY practice saved an estimated \$48,000 per year in decreased staff time handling prescription renewals.

The numbers for SMA are more impressive. Every month, SMA's prescribing physicians receive an average of 9,500 electronic requests for script refills. Nurse interviews and time-motion studies reveal that, by handling refill requests electronically rather than over the phone, SMA has reduced its daily total nursing time spent on refill requests for each physician by 93%, from 5 minutes per phone call to just 20 seconds per electronic request. Spread over one year, that amounts to 8,867 hours in cumulative nursing-time savings, time that can now be spent more productively on revenue-generating patient services. Calculated at an average wage of \$23.53 per hour for Las Vegas nurses<sup>12</sup>, the indirect savings to SMA amounts to \$208,640 per year in increased staff productivity.

"The time savings from electronic renewal of prescriptions is phenomenal," said Dr. Morrow. "Some pharmacies have reported instances where we have approved their elec-



tronic refill requests within a matter of seconds. That can happen if the doctor or nurse is working their tasks in the EHR when the refill request arrives. After a quick glance at the medication list to confirm that the requested prescription is accurate and appropriate, the refill request can be immediately granted."

#### STAFF PRODUCTIVITY GAINS FROM ELECTRONIC PRESCRIPTION REFILLS

- 9500 e-scripts/month
- Previously: 5 minutes per refill-request phone call
- Currently: 20 seconds per electronic request
- Time Savings: 4 minutes, 40 seconds/request
- Dollar Savings\*: \$17,449.85/month = \$209,398/year in increased staff productivity

\* (280 seconds time-savings/request x 9500 requests/month = 739 hours/month = 8,867 hours/year x \$23.53/hr/nurse = \$208,640)

#### POTENTIAL FOR MEDICAL ERRORS REDUCED

More than one in five Americans reported that they or a family member had experienced a medical or prescription drug error in 2001.<sup>13</sup> Of the 16 percent reporting a medication error, over one-fifth said the error turned out to be a very serious problem. Fortunately, eRx has been proven to help prevent medication errors. To name just one study, patients with hyperlipidemia involved in a program designed to create a seamless flow of information among patients, pharmacists and physicians using eRx technology had a medication compliance rate of 90 percent compared to a 50 percent benchmark.<sup>14</sup>

Physicians are convinced that the system's clinical decision support and automatic drug utilization review prevents medical errors that would previously have slipped by unnoticed. Michael Coleman, the group's Chief Operating Officer, says there is little doubt that *Rx+* has made dramatic improvements in patient safety. "We're certain that we've seen error issues go down but we have not been able to collect good data on that because we have no benchmark measuring what occurred prior to e-prescribing," Coleman says. "The happy and sad faces in *TouchWorks* give instant feedback to doctors, and there are adverse reaction and allergy warnings built into the system. Those two things alone have made a huge difference in reducing errors."

## CONCLUSION

Spiraling drug costs continue to pose a significant challenge for MCOs striving to provide health benefits programs at a price employers and patients can afford. By improving generic utilization rates, MCOs and physician groups can hold the line against price hikes and help reduce pharmacy benefit expenses. In this effort, eRx is their most powerful tool.

By using eRx, Southwest Medical Associates and Sierra Health Services documented savings of \$4.75 million per year from higher generic fill rates, and another \$208,640 in indirect savings from reductions in staff time devoted to prescription refills. Their experience is further proof that, with the right eRx application, physicians can both improve the bottom line and enhance patient care. A key lesson for other MCOs and physician practices is that a group's total generic fill rate can be significantly improved by tying ePrescription adherence to financial incentives – even to the point of barring non-compliant clinicians from participation in incentive programs.

SMA's program has proven so successful that Sierra Health Services has decided to adopt it statewide. In October 2005, the MCO, along with Allscripts and the Clark County Medical Society, announced an initiative to provide *TouchWorks Rx+* to all 5,000 of Nevada's practicing physicians. The program will be the nation's first statewide eRx network and a new testing ground for the effectiveness of eRx. Allscripts expects other states will soon follow Nevada's lead and adopt eRx to enhance patient safety and reduce healthcare costs for their citizens.

## AUTHOR BIOGRAPHIES

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