



NGHS Uses AI to Translate and Populate 93% of Prescription Renewal Data in Their Epic EHR

Replaces Sig-Mapping Tables and Manual Entry, Saving Time and Reducing Patient Safety Risks



Northeast Georgia
Health System

Gainseville, GA

4 Hospitals

799 Beds

1,200+ Medical Staff

EHR: Epic

Fuzion by DrFirstSM

The solutions named here are now included in Fuzion by DrFirst, a comprehensive healthcare technology platform powered by clinical-grade AI.

Northeast Georgia Health System (NGHS) is a non-profit community health system anchored by four Northeast Georgia Medical Center (NGMC) hospital campuses: NGMC Gainesville, NGMC Braselton, NGMC Barrow, and NGMC Lumpkin. A medical staff of more than 800 physicians representing over 60 specialties provides care for a half-million unique patients across the region every year.

The Challenge

NGHS receives more than 2,000 prescription renewal requests per day, requiring clinicians and staff to collectively spend hours on a manual process of entering prescription data from the pharmacy system into the correct fields in the electronic health record (EHR) system. That's because the EHR receives renewal requests with specific prescription instructions, such as medication dosage, route, and frequency (known as "sigs"), that don't match the health system's nomenclature (for example, "by mouth" versus "oral"). A single sig, such as "Take 1 tablet by mouth daily," could be represented more than 800 different ways.¹

To address this issue, some EHRs enable creation of a mapping table, which allows sigs that have a perfect match in the table to be imported into the patient record automatically. Unfortunately, keeping that table up to date is a time-intensive, manual process for the IT department. And despite the significant time and effort NGHS staff spent managing and maintaining their sig-mapping table, only 38% of sigs were populating automatically into appropriate fields in their Epic EHR, leaving 1,300 per day with incomplete sigs requiring at least partial manual entry.

"Our IT team worked with our pharmacists to try to improve our match rate and import more sig data automatically in our Epic EHR," said Earl Turner, Informatics Analyst at NGHS. "Using a sig-mapping utility report, we found that we would improve our match rate by only 3% at a time even if we spent hundreds of additional hours to catch the one or two specific sigs that weren't being translated. This is an inefficient use of time for very little gain, and the table would still need to be monitored regularly as medications change."

In addition, the sig sent in the renewal request often arrives as a block of text, rather than as data points in discrete fields. This prevents the prescribing system from using the information to trigger safety alerts for drug interactions and allergies, increases the risk of errors when data is keyed in manually, and increases time spent on redundant tasks instead of patient care. And when sigs are not in discrete fields, providers can't use calculators to determine morphine milligram equivalent daily dose (MEDD) as part of the hospital's safety initiatives for prescribing controlled substances.

¹Quality and Variability of Patient Directions in Electronic Prescriptions in the Ambulatory Care Setting, National Library of Medicine 2018

The Solution

NGHS was already using MedHxSM from DrFirst to import the most comprehensive database of medication history within their native Epic workflow. DrFirst's SmartSuiteSM adds another layer of clinical workflow support with patented artificial intelligence (AI) that normalizes sigs into consistent terms, safely infers missing information, and pre-populates drug and sig information within the Epic EHR so clinicians don't need to manually enter medication information.

Based on the health system's success with those solutions, NGHS became an early adopter of SmartRenewalSM, which uses DrFirst's AI to reduce the risk of medication errors by significantly cutting down on the clicks and keystrokes that can cause data entry mistakes and contribute to clinician burnout. The AI transcribes sigs directly into the EHR, eliminating the need to create and maintain a sig-mapping table and removing the requirement for a perfect sig match. It infers clinical meaning and improves its performance over time by learning to translate, structure, and codify medication data with greater speed and efficiency.

"Partnering with DrFirst has been a game-changer for my busy clinical practice," said Jack Cheng, M.D., Physician Informaticist at NGHS. "Now, processing a mountain of electronic renewal requests in an already cluttered inbox can be done in seconds with one click. SmartRenewal has eliminated the frustration of re-entering medication instructions despite seeing they're already there. It makes for a faster and, more importantly, safer process."

Using SmartRenewal to translate sigs and import information into discrete fields, clinicians and staff at NGHS now review renewals for accuracy and completeness and approve requests with minimal or no manual entry. With this important information readily available in their EHR, the need to translate and enter prescriptions in the patient chart is greatly reduced, as is the potential for errors.



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The Results

After implementing SmartRenewal, NGHS saw a 54% improvement in the number of clean sigs imported, resulting in a total of 93% of incoming prescription renewal data either partially or fully populated in the EHR. Using an estimate of three seconds of manual entry per renewal field, the health system's clinicians saved approximately 386,077 clicks in the first four months of using the new process.

"Before partnering with DrFirst, only 38% of our prescription renewals had complete medication details, which meant most electronic renewal requests required staff to enter at least some sig data manually," said Leslie D. McClain, MPA, Director of Clinical Applications, Information Technology Services at NGHS. "Now we're importing complete sig details into Epic for 93% of our patients' medication renewals. That saves significant time and effort for our IT team; it helped clinicians save a combined total of 321 hours during the first four months of using the new process."

With renewal data in discrete fields, providers can use MEDD calculators to calculate total daily dose of opioids and identify patients who may benefit from closer monitoring or other measures to reduce risk of overdose. This is also important to keep the health system in compliance with e-prescribing for controlled substances (EPCS) mandates.

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