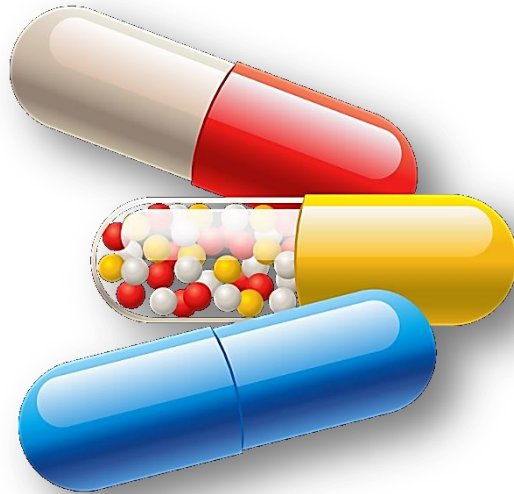


# Lessons Learned from Implementation of healthfinch's Charlie Practice Automation Platform

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*A Case Study*



*Prepared for:*

Carl Bouthillette, MBA  
Senior Program Investment Officer  
California Health Care Foundation  
Oakland, CA

*Prepared by:*

Seth Emont, PhD, MS  
Principal  
White Mountain Research Associates, LLC  
Walpole, NH

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# Lessons Learned from Implementation of healthfinch's Charlie Practice Automation Platform

## EXECUTIVE SUMMARY

In November 2010, the California Health Care Foundation (CHCF) launched the Health Innovation Fund. The Fund was developed to support health care technology and service companies that have the potential to significantly lower the total cost of care or substantially improve access to care for low-income Californians. Eligibility requirements for financial support include the potential for significant impacts on access and/or costs of care, alignment with CHCF's mission, and the potential for scalable and sustainable business models for the innovation. To date, through its Innovation Fund, CHCF has invested about \$10.2 million in promising health care technology companies that seek to improve care access, clinical care management, and patient engagement and communication.



In November 2013, CHCF awarded \$450,000 to healthfinch, a health care technology company based in Madison, Wisconsin. Healthfinch developed a software platform, the Refill Management Application (formerly called Swoop) that automates the prescription refill process. Refilling prescriptions is a time-consuming process that takes primary care providers and their staff away from other important tasks related to direct patient care. The average primary care doctor loses about \$30,000 per year in revenue on prescription refill requests. To address these work inefficiencies, healthfinch's automated prescription refill management platform—now called The Charlie Practice Automation Platform—reduces inconsistent refill orders by applying evidence-based protocols to the request as it enters the electronic medical record. The software also checks for duplicate requests and contraindications using the patient's active medication list before delivering it to a nurse, medical assistant, or physician for approval. Taken as a whole, streamlining work flows across these administrative activities can save health care providers valuable time so they can focus on patient care.

To better understand the potential for implementing this technology among safety-net providers in California, CHCF and healthfinch collaborated with two health centers: Alliance Medical Center (AMC) in Sonoma County and QueensCare Health Centers (QHC) in Los Angeles County. Both health care systems are members of OCHIN and have implemented healthfinch's refill technology through OCHIN's cloud-based Epic platform. The purpose of this case study is to document sites' experiences with

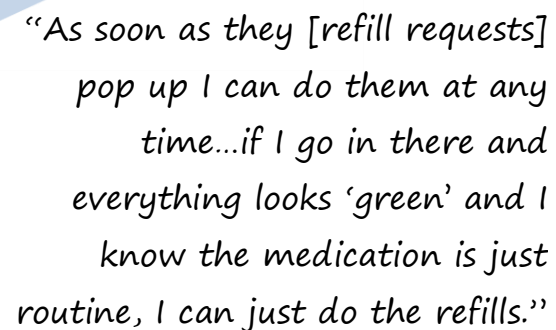
implementing heathfinch's automated prescription management platform ("Charlie"). We documented sites' experiences across two areas: technology adoption and clinical efficiencies resulting from use of the Charlie platform, including clinical efficiency metrics, changes in work flow, feedback from staff on platform implementation, program implementation challenges faced from the perspectives of the pilot sites and vendor, and lessons for the field. The evaluation team interviewed project leads at each site plus the implementation team from healthfinch early on in the implementation of the prescription management platform and at a nine-month follow-up.

Despite a number of challenges faced by the two clinics—particularly around leadership and staff turnover—both sites were quite successful in implementing the Charlie platform. Our evaluation documented pre-to post-implementation improvements across a number of measures encompassing clinical efficiency and self-reported feedback about the Charlie platform. For

Alliance Medical Center, the greatest benefits resulting from implementing Charlie were observed around same day refills and refill requests completed by nonproviders. The nursing staff at AMC is also moving to centralize the work for prescription refills. A recent nursing hire is almost exclusively working on prescription refills at this point, so that other nursing staff are not bogged down

by prescription refills. For QueensCare Health Centers, improvement across the clinical efficiency measures was observed, although the effect was not as strong as for AMC, given the high percentage of delegated prescription refills already in place. Prior to implementation of the healthfinch refill management platform in January 2018, there were no standardized processes in place for the pharmacists to use for prescription refill management. In addition to putting medication protocols in place, the healthfinch team also worked with pharmacists at QHC to put standardized work flows (i.e., to address the manual part of the prescription refill process) in place immediately after the go-live date for the automated refill management platform.

The evaluation also documented large pre- to post-implementation improvements in how staff viewed the various aspects of the refill process, all reflecting the improvement in clinical efficiencies. The largest changes were noted for improvements in prescription refill workloads and turnaround time for prescription refill requests. At follow-up, staff




*"As soon as they [refill requests] pop up I can do them at any time...if I go in there and everything looks 'green' and I know the medication is just routine, I can just do the refills."*

Registered Nurse

also were more satisfied with the new protocols in place and their comfort level with delegating refill requests to pharmacists or nurses. Slightly lower reports of prescription refills and time spent filling prescriptions were self-reported by providers at follow-up, reflecting the offloading of these requests at both sites.

Virtually all staff strongly agreed that the Charlie platform made it easier to do their job so that they could focus on other things, yielded better prescription turnaround times, improved delegation to nonproviders, helped standardize the refill process, and encompassed evidence-based practices in medication monitoring. Staff was asked to rate their overall satisfaction with healthfinch's automated prescription refill platform. A majority (81%) gave Charlie the two highest ratings of "Delighted" and "Pleased".



*"We're actually going through referrals, making sure that [patients] have the appointments for the last 3, 6, 9 months, whatever it is, and making sure that they come back for labs...it keeps us grounded with our patients to help bring them back."*

Clinical Pharmacist

We also presented examples of potential revenue that can be gained through task delegation and missed labs and office visits that might be useful to other safety-net providers. Revenue gains from closing care gaps are possible once this functionality is utilized to its full potential by each of the clinics (as is the potential to improve quality metrics like a1c screening or foot and eye exams for diabetes based on the identified care gaps).

The successes experienced by these two clinics could not be achieved without strong internal leadership, staff commitment to implementing the product, and a willingness to implement evidence-based protocols to streamline medication refill requests, as well as standardized work flows. Our findings are promising and suggest a strong potential for implementing this type of technology among safety-net providers. Finally, we present lessons learned that can be used by other safety net organizations to help leadership and staff better understand the steps, benefits, and challenges of implementing automated prescription refill platforms.

## Lessons Learned from Implementation of healthfinch's Charlie Platform



To better understand the potential for implementing a practice automation platform among safety-net providers in California, the California Health Care Foundation and healthfinch collaborated with two health centers: Alliance Medical Center in Sonoma County and QueensCare Health Centers in Los Angeles County.

1



### What is the Charlie Platform?

Refilling prescriptions is a time-consuming process that takes primary care providers and their staff away from other important tasks related to direct patient care. The software automates the prescription refill process and saves providers time while increasing accuracy. The Platform reduces inconsistent refill orders by applying evidence-based protocols to the request as it enters the electronic medical record.

2



### What we documented...

- ◆ Feedback from staff on implementation of Charlie Practice Automation Platform
- ◆ Clinical efficiency metrics pre- and post-implementation
- ◆ Changes in work flow
- ◆ Challenges faced along the way

3



### We found evidence for...

- ✓ Increases in same day refills
- ✓ Improved delegation of refills to nonproviders
- ✓ Alignment and better decision-making to authorize refills
- ✓ Successful implementation of standardized work flows
- ✓ Closing the refill queue and getting today's work done today
- ✓ Use of medication protocols to help guide refill process
- ✓ High satisfaction among providers using Charlie Platform



4



### What we'd like to see down the road...

Longer-term tracking of metrics so that sustained effects and better value in health care can be demonstrated

Focus on ROI that is more tailored to clinics' needs—for example, around staffing for centralizing prescription refills or projecting revenues based on freed up time among providers

5



### So what?

Our findings are promising and suggest a strong potential for implementing this type of technology among safety-net providers.





# Lessons Learned from Implementation of healthfinch's Charlie Practice Automation Platform

## INTRODUCTION

In November 2010, the California Health Care Foundation (CHCF) launched the [Health Innovation Fund](#). The Fund was developed to support health care technology and service companies that have the potential to significantly lower the total cost of care or substantially improve access to care for low-income Californians. Eligibility requirements for financial support include the potential for significant impacts on access and/or costs of care, alignment with CHCF's mission, and the potential for scalable and sustainable business models for the innovation. To date, through its Innovation Fund CHCF has invested about \$10.2 million in promising health care technology companies that seek to improve care access, clinical care management, and patient engagement and communication.

In November 2013, CHCF awarded \$450,000 to healthfinch, a health care technology company based in Madison, Wisconsin. Healthfinch developed a software platform that automates the prescription refill process. Under California law, nurses and medical assistants can authorize routine prescription refills with physician supervision provided that the prescription is in the patient's chart as a physician-approved standing order, dosage levels remain the same, and the patient is not due for monitoring.



Refilling prescriptions is a time-consuming process that takes primary care providers and their staff away from other important tasks related to direct patient care.

According to healthfinch, the average primary care physician receives fourteen refill requests per day and spends two minutes processing each request. Using an average revenue generation number based on three patient visits per hour, the average primary care doctor loses about \$30,000 per year in revenue on prescription refill requests.<sup>1</sup> A study conducted by healthfinch demonstrated that 95% of surveyed doctors viewed the refill process as burdensome for themselves and 97% indicated that it overloads their staff as well.<sup>2</sup> These statistics reflect a solid research base demonstrating how burdensome the refill process and other routine, administrative tasks can be to care providers. For example, a 2014 study of Sharp Rees-

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<sup>1</sup> healthfinch. Refill requests. What role do they play in a doctor's day? April 2012.

<sup>2</sup> <http://www.healthfinch.com/healthfinch-survey-95-of-physicians-find-refill-requests-burdensome/>

Stealy Medical Group's refill/medication therapy management (MTM) service estimated that physicians saved up to thirty minutes per day, amounting to about \$33-\$50 saved per day per physician after the electronic medication refill system was implemented by the medical group.<sup>3</sup> As another example, Kaiser Permanente Northwest's automated medication refill system resulted in an annual savings of \$1.2 million plus a yearly savings of \$480,000, attributed to an increase in the number of prescriptions processed through the automated refill center.<sup>4</sup>

To address these work inefficiencies, healthfinch made enhancements to Swoop and introduced the Refill Management Application, software to automate the prescription refill process and save providers time while increasing accuracy. The Refill Management Application reduces inconsistent refill orders by applying evidence-based protocols to the request as it enters the electronic medical record. The software also checks for dosage changes, duplicate requests, outstanding refill orders, and more before pre-populating the refill order and delivering it to a nurse, medical assistant, or physician for approval. According to healthfinch, providers using the platform can reduce their routine work by as much as 80%, saving them between fifteen and twenty minutes per day for each task.<sup>5</sup>

Following the development of Swoop, healthfinch received \$7.5 million in Series A funding to develop its new practice management platform. According to healthfinch's CEO, Jonathan Baran, the company was interested in strategically moving to an even more robust practice automation platform (now called "Charlie") that could help practitioners streamline other routine, time consuming tasks beyond prescription refill requests, including visit planning work flows and patient communication work flows. The new practice automation platform integrates with a number of electronic medical registries, including Epic, AthenaClinicals, and Allscripts Touchworks. The Visit Planning application preps patients and staff for scheduled visits by reviewing the patient's chart, recommending activities to be completed ahead of the visit, and summarizing this information for the provider to review. The platform is also pre-loaded with over 2,400 evidence-based medication lists and care protocols that enable it to identify gaps in

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<sup>3</sup> Schoenhaus R, Lustig A, Rivas S, Monrreal V, Jr, Westrich KD, et al. (2016). Using an Electronic Medication Refill System to Improve Provider Productivity in an Accountable Care Setting. *Journal of Managed Care & Specialty Pharmacy* 22(3): 204-08.

<sup>4</sup> Modern Medicine Network (2015). Pharmacist Refill Protocol Cuts Costs, Physician Time. *Drug Topics*. Accessed February 19 2018. <http://drugtopics.modernmedicine.com/drug-topics/news/pharmacist-refill-protocol-cuts-costs-physician-time>.

<sup>5</sup> Swooping in to automate prescription refills. (2018). *Modern Healthcare*. Retrieved 18 February 2018 from <http://www.modernhealthcare.com/article/20161126/TRANSFORMATION02/161129946>.



care.<sup>6</sup> In addition to gaining access to these automated streamlining protocols, healthfinch clients also have access to Customer Success Managers, who work with clients from the beginning to train staff on redesigning clinical work flows, guiding them through the technical go-live process, and by providing ongoing support.<sup>7</sup> Taken as a whole, streamlining work flows across these administrative activities can save health care providers valuable time so they can focus on patient care. It is important to note that such benefits have the potential to extend beyond the care team to the patient to improve adherence to medications, screenings, and laboratory tests.

With the support of CHCF, healthfinch hopes to expand operations to California safety-net providers. To better understand the potential for implementing this technology among safety-net providers in California, CHCF and healthfinch are collaborating with two health centers: Alliance Medical Center (AMC) in Sonoma County and QueensCare Health Centers (QHC) in Los Angeles County. AMC is a Federally Qualified Health Center established in 1971 and has clinics in Healdsburg (headquarters) and Windsor, California. AMC's service area reaches north to Geyserville and south to northern Santa Rosa, and in 2016 served more than 12,000 patients of whom 67% were Medicaid/CHIP recipients and 16% were uninsured.<sup>8</sup> QHC is a Federally Qualified Health Center and includes five health centers in LA County: Bresee, Eagle Rock, East 3<sup>rd</sup> Street, Echo Park, and Hollywood Health Centers. In 2016, QHC served over 24,000 patients of whom 65% were Medicaid/CHIP recipients and 27% were uninsured.<sup>9</sup>

Both health care systems are members of OCHIN and have implemented healthfinch's refill platform through OCHIN's cloud-based Epic platform. Oregon-based nonprofit OCHIN is one of the largest and most successful health information and innovation networks. OCHIN installs and centrally hosts Epic and provides training for staff and clinicians at its member sites that use this electronic health record solution.<sup>10</sup> Wisconsin-based Epic is a healthcare software company that offers an integrated suite of healthcare software focused on patient administrative functions, clinical care delivery,

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<sup>6</sup> Source: <https://www.healthfinch.com/our-platform>

<sup>7</sup> Source: <https://www.healthfinch.com/blog/customer-success-manager>

<sup>8</sup> Health Resources & Services Administration. Alliance Medical Center Health Center Profile 2016. Accessed February 22 2018. <https://bphc.hrsa.gov/uds/datacenter.aspx?q=d&bid=092080&state=CA&year=2016>.

<sup>9</sup> Health Resources & Services Administration. QueensCare Health Centers Health Center Profile 2016. Accessed February 22 2018. <https://bphc.hrsa.gov/uds/datacenter.aspx?q=d&bid=0910240&state=CA&year=2016>.

<sup>10</sup> Source: OCHIN.Org. 2018. Ochin.Org. Accessed February 22 2018. <https://ochin.org/>.

laboratory care, and billing.<sup>11</sup> Healthfinch is partnering with OCHIN to integrate its platform into its cloud-based Epic software.

The purpose of this case study is to document sites' experiences with implementing healthfinch's Charlie Practice Automation Platform, including changes in work flow, clinical efficiencies, and program implementation challenges faced from the perspectives of the pilot sites and vendor. Lessons learned can be used by other safety-net organizations to help leadership and staff better understand the steps, benefits, and challenges of implementing automated prescription refill platforms.

## APPROACH

This case study documented the following impacts from implementation of healthfinch's Charlie Practice Automation Platform:

- ◆ ***Experiences with Technology Adoption*** – The evaluator documented pilot sites' experiences with implementing healthfinch's platform, including program successes and challenges faced. In addition to interviewing the project leads and surveying staff, the evaluator interviewed the implementation team from healthfinch to gain that team's perspectives. Along with implementation of healthfinch's platform and automated medication protocols, healthfinch coaches trained staff at both pilot sites on use of the platform and helped staff implement new standardized refill protocols.
- ◆ ***Efficiencies Resulting from Use of healthfinch's Charlie Platform*** – Implementation of healthfinch's platform and the implementation of new standardized protocols and procedures for refill prescriptions enabled us to document work flow efficiencies. Where data are available, we documented the extent to which healthfinch's platform impacted efficiency measures for staff and patients (i.e., same day refills, refills completed by nonproviders, productivity), plus identified gaps in patient care that otherwise would have been missed (i.e., recommended office visits and labs).

## LESSONS LEARNED

In this section, we provide summary results for each site that emerged through our synthesis of baseline and follow-up quantitative and qualitative data obtained from the healthfinch pilot, including insights from both sites and the healthfinch coach. Results

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<sup>11</sup> Source: Epic.com. Accessed February 22 2018. <https://www.epic.com/software>.

were categorized into the themes mentioned above: experiences with technology adoption and resulting clinical efficiencies.

## **Alliance Medical Center**

### *Experiences with Technology Adoption*

Key stakeholders involved in implementation of healthfinch's platform at Alliance Medical Center's two clinics included Carina Gonzalez, MD (former CMO and physician champion for implementation of the platform), Mary Fitzgerald, RN, BS, MPA (Clinical Consultant at Alliance Medical Center), Enrique (Henry) Ramirez (former manager at AMC's Healdsburg location), and Julie Archer (EHR site specialist).

Prior to implementation of the platform in December 2017, two to three nurses were available to work on prescription refills, devoting about one to three hours each day to this task outside of their clinical care responsibilities. Work flow for the nurses was inefficient prior to implementation because of lack of standardization of protocols, the use of paper protocols and manual chart reviews. In addition, Surescripts requests were sent directly to providers' InBaskets, so that nurses had to access each individual provider's InBasket within Epic to process the refills, a time-consuming process. It also was difficult for providers to differentiate between refill requests that were sent back to them by the nurses for review versus those that the nurses had not yet had a chance to address. As with QueensCare Health Centers, healthfinch staff subsequently streamlined this process so that prescription refill requests were sent directly to the nurses' inboxes.

According to Lesley Hobson, RN (Senior Customer Success Manager & Clinical Analyst for healthfinch) and Mary Fitzgerald, staff faced a number of challenges during implementation of Charlie. While the AMC Windsor clinic has held its nursing staff (1FTE LPN) steady throughout implementation of the software, the Healdsburg site experienced physician and staff turnover during the implementation of healthfinch's platform and as of March 2017 (about three months after the go-live date) was short-staffed through loss of nursing staff. So, despite streamlining the work flow around prescription refills, current nursing staff are taking on more responsibilities until a new nurse is recruited.

Dr. Carina Gonzalez, former CMO of AMC and project lead for the healthfinch platform at AMC, developed the original protocols for the platform, including defining the drugs for the protocols and which tests were appropriate based on the medications and diagnosis. The software then decides whether or not the medication fits the protocol and then does a behind-the-scenes check of the last visit or lab test and whether it fits

within the parameters the clinical team decided were appropriate for their population. The clinical team at AMC received training around use of the healthfinch software and medication protocols, but in March 2018 had not yet implemented any standardized protocols to help streamline the manual refill process. Mary Fitzgerald was responsible for managing the majority of the prescription refills in addition to completing clinical tasks until new staff was hired. According to Ms. Fitzgerald, AMC's patient population has many complex conditions, so the clinical team is finding that, even though patients may fit the protocols, a majority are out of compliance with a number of practice guidelines and/or care services. Also, with AMC's access issues and the current provider and nurse staffing challenges, nurses still need to "dig through the chart" to be sure that appropriate labs are ordered or visits are scheduled. However, Ms. Fitzgerald noted that with the last upgrade in March 2017, the healthfinch platform provided more information about the patient and, as she described it, the software platform helps her do a "quick review" of the patient; she was using the platform more as a prompt to do a more robust chart review than probably a regular nurse would do for a typical medication refill.

Another challenge faced by the AMC team is having enough available staff to act on any care gaps that would be flagged by the healthfinch platform. (During early implementation, healthfinch had not yet focused on scheduling or care gap messaging at AMC and, to date, this feature has still not been turned on). For example, if it was discovered that a patient was due for an upcoming office visit while the nurse was requesting a refill, providers need to rely on designated staff at AMC to follow-up with that patient. The care gap function not only identifies overdue labs but also recommends office visits that need to be addressed in the next ninety days. Once the care gaps are identified, a separate encounter can be created within the patient's chart to address these needs. Since many health care clinics already experience access issues for their patients, the healthfinch team expanded this care gap window to ninety days to help improve patient access to appointments. The end result is to improve access to timely care but also is intended to streamline patient visits where possible. It is also conceivable that by closing these care gaps, clinical outcomes—like better control of a1c levels or blood pressure control—could be within reach the longer the healthfinch platform is used to manage the patient population.

Nursing staff also faces work flow challenges that fall outside the boundaries of the healthfinch platform—for example, for approval of new medications from some insurance carriers, such as Partnership HealthPlan, which is the main insurance carrier for most of AMC's managed Medi-Cal patients. If a patient needs a new prescription, the insurance carrier may not initially approve that medication. This could simply be because a different brand is requested, a brand name is requested, or a gel instead of a cream is

requested. So, the nurse needs to verify a change with the provider first. Or, if a provider specifically requests a certain brand or type of medication, nursing staff must FAX a Treatment Authorization Request (TAR) or prior authorization to the insurance carrier, which is an authorization form to approve the medication. Staff also has the option of submitting the request via the [CoverMyMeds](#) website, an online portal used by providers to manage electronic prescription requests. The insurance carrier then either approves the request and sends the authorization to the pharmacy directly or rejects the prescription request and sends it back to the provider. Mary Fitzgerald estimates that such requests take about ten minutes to complete.

Still another challenge to the work flow, which falls outside the borders of the healthfinch platform is that a portion of the prescription refills are FAXed. If a provider is no longer showing up as being active in the system, an eFAX is automatically generated. These refill requests need to be input into the system manually. Each day the clinic receives about ten to fifteen electronic refills and on weekends, another twenty to twenty-five are received, each taking between five and ten minutes to complete. Mary Fitzgerald estimated that each week the clinic receives over fifty FAXed prescription refills and these can be real time chewers. In addition to manual entry, it is also possible that some FAXed requests may be duplicates if electronic versions of the prescription refill have been received. So, these have to be checked against the electronic requests to be sure they haven't already been filled.

The healthfinch team also modified the refill protocol to encourage staff to provide longer refill supply periods to patients. Patients had been typically receiving 30-day courtesy refill supplies if a follow-up visit was overdue, but the new work flow encouraged staff to provide a 90-day courtesy refill or an even longer refill period to give patients a better chance to get an office visit or labs completed. According to Lesley Hobson, the team did this to encourage providers to *"not hold patients hostage with their refills"* and give patients enough medication to last until they're due for a visit based on the refill protocol. Prior studies have documented that extending this medication supply period can result in better patient adherence to their medications and clinical outcomes<sup>12,13,14</sup>; this can be especially true for patient populations that

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<sup>12</sup> Amin K, Farley JF, Maciejewski ML, Domino ME. Effect of Medicaid policy changes on medication adherence: Differences by baseline adherence. J Manag Care Spec Pharm. 2017; 23(3): 337-45.

<sup>13</sup> Batal HA, Krantz MJ, Dale RA, Mehler PS, Steiner JF. Impact of prescription size on statin adherence and cholesterol levels. BMC Health Services Research 2007; 7: 175.

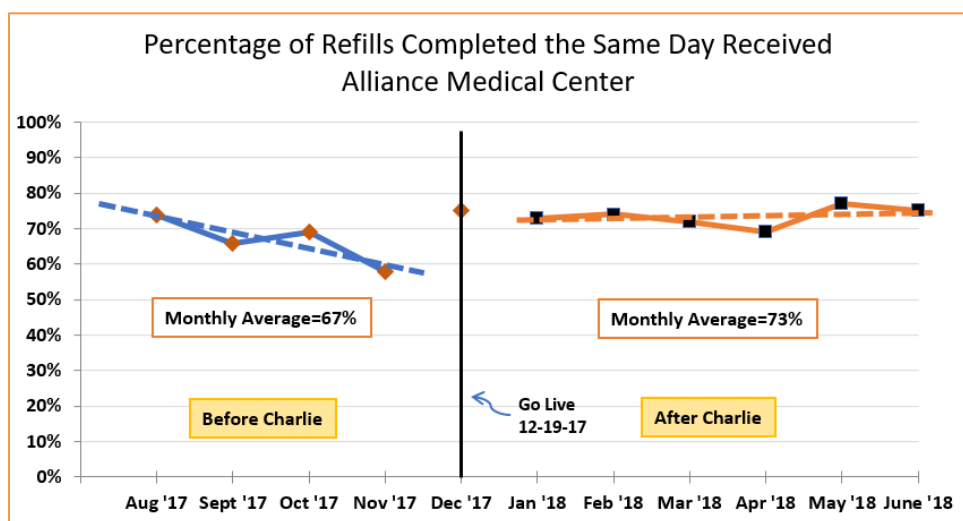
<sup>14</sup> Miani C, Martin A, Exley J, et al. Clinical effectiveness and cost-effectiveness of issuing longer versus shorter duration (3-month vs. 28-day) prescriptions in patients with chronic conditions: systematic review and economic modelling. Southampton (UK): NIHR Journals Library; 2017 Dec.

already experience poor medication compliance and poor clinical outcomes resulting from chronic illness. But, during implementation of the healthfinch platform, nursing staff were hesitant to use this protocol, and instead felt more comfortable reviewing patients for refills on a case-by-case basis.

### *Clinical Efficiencies Resulting from Use of Charlie Platform*

Despite the challenges with staffing faced pre- and post-implementation, the short-term results for AMC have been impressive. The greatest benefits resulting from implementing Charlie were observed around same day refills and refill requests completed by nonproviders. Before Charlie was implemented, an average of 67% of refill requests were

completed the same day compared to 73% post-implementation. As shown in the chart, the percentage of same day refills declined over the 4-month pre-implementation



period compared to a gradual increase in the five months following implementation of Charlie. As one nurse noted, *"As soon as they pop up I can do them at any time...if I go in there and everything looks green and I know the medication is just routine I can just do the refills."*

Another benefit realized from the automated platform is the improvement in the number/percentage of refills completed by nonproviders. The chart shows an increase in the percentage of refills completed by nonproviders over the 6-month period following implementation of Charlie compared to a gradual decline in refills completed before implementation of Charlie.<sup>15</sup>

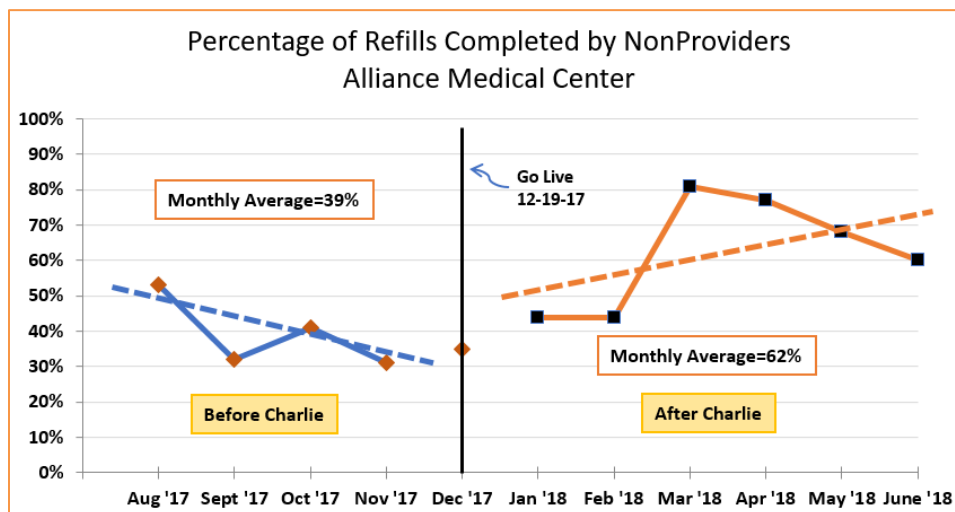
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(Health Technology Assessment, No. 21.78.) Available from:  
<https://www.ncbi.nlm.nih.gov/books/NBK470095/> doi: 10.3310/hta21780.

<sup>15</sup> Results for number of refills completed by nonproviders are similar to the results shown in the chart for percentage of refills.



The decline in refills prior to implementation of Charlie is likely due to: (1) nurses rarely utilizing the protocol in place since it did not cover a lot of medications; and (2) the protocol was a paper document, which had to be accessed to review requirements for all of the medications. The automated protocols put into place helped streamline this process to make it easier for nurses to refill the medications. As one provider noted,



*"[healthfinch] is a very user-friendly, easy system...it is certainly making our workload a lot easier." As shown in the chart, there is also a large jump in the percentage of refills completed by nonproviders between February*

and March 2018. This is likely due to the fact that one or two nurses left AMC shortly after go-live with Charlie and providers were completing their own refills. However, there were more nursing staff available to complete the refills by the end of March and staff was able to sustain the refill process after this point and even close the refill queue at the end of each day.

The nursing staff at AMC is also moving to centralize the work for prescription refills. A recent nursing hire is almost exclusively working on prescription refills at this point, so that other nursing staff are not bogged down by this task. The productivity and delegation chart below illustrates this shift in practice and shows that "Staff A" has begun to take on most of the refill requests. Over time, the plan at AMC is to hire staff at the other clinic so that prescription refills are carried out exclusively by two staff members, one at each of the two clinics. The team is also interested in centralizing other functions, such as prior authorization and chart scrubbing for pre-visit planning.

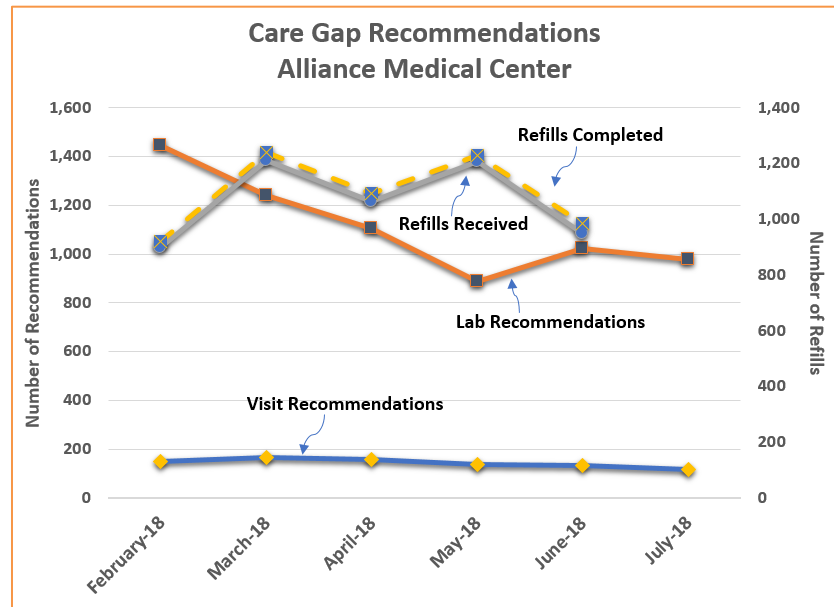
**Productivity and Delegation Chart (partial chart shown for productive staff)**

Before Charlie						Before Charlie Total	After Charlie								After Charlie Total
Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Dec-17		Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18			
Refill users															
STAFF A				1	26	93	120	53	96	153	244	404	378	199	1474
STAFF B								145	77	240	99	274		98	986
STAFF C	226	89	174	120		38	647	6	37	26	160	59			288
STAFF D												98	74	233	405

*Highly productive staff*

As previously described, Charlie's care gap functionality not only identifies overdue labs but also recommends visits that need to be addressed in the next ninety days. Although this function was active in the background beginning January 26, 2018 for both demonstration sites, neither site had direct access to this function until recently

(QueensCare received access in early July 2018), so we could not report on its effectiveness. With that said, staff at healthfinch provided us with background care gap data for both sites for the 6-month period following the go-live date. As shown in the chart, the Charlie platform was successful at flagging recommendations for overdue or upcoming labs and office visits. Staff



at AMC acknowledge the backlog in lab requests, but face challenges in overcoming overdue labs given their shortage in staff. Ideally, as Mary Fitzgerald noted, *"If I had the resource for that I'd love it. As soon as you see the care gap, whoever is doing the refill would just put in a lab order or call the patient and get the labs done."* Realistically, Mary notes that it will *"take us six months to wrap our arms around this."* AMC would like to eventually hire staff for care coordination (either Medical Assistants or LPNs) with a focus on patient outreach and scheduling for office or lab visits identified through the Charlie platform, so that staff can stay on top of flagged care gaps. The care gap functionality has great potential over time to streamline visits and improve the backlog on overdue labs—and improve quality care metrics.

Moving forward, healthfinch staff is planning on reviewing a number of these work flow challenges and other new platform functionalities with AMC staff. Despite facing a number of challenges, AMC staff is benefiting from early successes from the software, including the use of automated medication protocols, the generation of more detailed information about patients, and the automated relay of prescriptions into a pool so they can be easily accessed by the nurses—all resulting in a streamlined work flow. As Mary Fitzgerald candidly noted, *"If every one of our patients had their treatment right on schedule and all of the tests that were supposed to be done per the protocol were done right on schedule, healthfinch would be a dream."*

## QueensCare Health Centers

### *Experiences with Technology Adoption*

Key stakeholders involved in implementation of healthfinch's automated refill platform at QueensCare Health Centers (QHC) included Marina Snitman, PharmD (Director of Pharmacy), Lisa Hanson, (EMR Site Specialist), and Moe Aung, MD (Physician Champion at QueensCare Family Clinic Eagle Rock). Similar to AMC, since healthfinch staff began this process, the implementation team noted a number of changes in leadership at QHC, which has impacted implementation of the platform, including changes in QHC's COO and medical director.

Two primary goals of implementing the healthfinch platform for staff at QHC were to improve efficiencies around the refill process and to identify gaps in care. Unlike AMC, where nurses manage the refill process, a more traditional model that is observed at other primary care centers, QHC has a team of 3.2FTE clinical pharmacists responsible for prescription refill management, with heavier staffing of pharmacists early in the week. However, QHC's clinical pharmacists also spend their time seeing patients in the pharmacy, so better management of prescription refills could free up their time to focus on other clinical tasks. QHC's clinical pharmacists block about four hours each day managing prescriptions and among other tasks spend the rest of their day seeing anywhere from twelve to sixteen patients in the pharmacy. Prior to implementation of the healthfinch refill management platform in January 2018, there were no standardized processes in place for the pharmacists to use for prescription management (possibly due to QHC's numerous changes in leadership).

In April 2016, California passed a law that expanded pharmacists' scope of practice to include, among other provisions, providing clinical advice to patients. California pharmacists also can "mandate tests to monitor and maintain the efficacy and toxicity of drug therapies for patients with comorbidities, such as diabetes, hypertension, and hyperlipidemia."<sup>16</sup> QHC providers experience challenges in helping patients gain better control over their chronic illnesses and utilize their pharmacists to help their patients meet their disease management goals. So, just like providers, pharmacists see patients for office visits, write progress notes, and develop care plans for patients that detail medications, dietary recommendations, and when they need to come back to be re-

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<sup>16</sup> Pharmacy Times (2018). Could Prescribing Become a Daily Duty for Pharmacists? Pharmacytimes.com. Retrieved 19 March 2018, from <http://www.pharmacytimes.com/contributor/shelby-leheny-pharmd-candidate-2017/2016/05/could-prescribing-become-a-daily-duty-for-pharmacists>

tested. Clinical pharmacists conduct blood pressure monitoring and diabetes consults with their patients and make adjustments to their medications to get patients closer to achieving their disease management goals. For some patients, pharmacists provide consults every two weeks. However, clinical pharmacists are not reimbursed for the care they provide to their patients.

According to Lesley Hobson, sometimes pharmacists are put in an awkward position, if for example, their recommendations for medication management are not in agreement with the physician's recommendations. Similarly, each pharmacist uses his/her own discretion when completing refills and identifying gaps in care. The healthfinch team found that what one pharmacist would do in a specific situation would differ from what another pharmacist would do in the same situation. So, the implementation team recognized that putting guidelines or protocols in place was a viable solution to standardizing recommendations around medication management, but also gives the pharmacist discretion around making adjustments to a patient's medication.

As a whole, QHC may begin to see improvements in their patients' disease management goals and, as a result, receive incentives for meeting their quality measures through various performance improvement initiatives. In addition, patients directly receive the added benefits of better management over their chronic illnesses potentially resulting from greater adherence to their medication, more frequent adjustments to medications when necessary, and greater attention to detailing care plans.

To help streamline the refill request process, the healthfinch team worked with QHC (as they also did with AMC staff) to add medication protocols to Epic. In total, there were 190 medication protocols consisting of 1,233 medications imported into Epic in January 2018, which would cover the vast majority of requests received by the QHC pharmacy. As a point of comparison, typically about twenty medication protocols are built into Epic.

The sample medication protocols below show how the green checks and red Xs are displayed in Epic for the pharmacists. Red Xs represent any patient alerts that are flagged by the automated prescription refill platform. These need to be resolved before the prescription refill request can be completed (i.e., turned into green checks). For example, these could represent contraindications to a new prescription or even a duplicate medication. One might expect the red Xs to increase in the short-term and then gradually decrease over time and be replaced by green checks as the population is better managed. The eye and foot exams and urine microalbumin shown the sample below are quality metrics that most clinics track for their diabetic population. According to Lesley Hobson, while overdue quality metrics requirements would not necessarily

## Sample Medication Protocols

**Rx METFORMIN HCL 1,000 MG TABLET**  
Will file in chart as: metFORMIN (GLUCOPHAGE) 1,000 mg tablet  
take 1 tablet by mouth twice a day with meals  
Disp: 180 Tab (Pharmacy requested 180)  
Refills: 1  
Class: e-Prescribing Start: 5/15/2018  
For: Controlled type 2 diabetes mellitus without complication, without long-term current use of insulin (HCC)  
Originally ordered: 1 year ago by [REDACTED]  
Last refill: 4/20/2018

**Endocrinology: Diabetes - Biguanides Failed**  
5/15 9:32 AM

- ✗ HBA1C in normal range and within last 360 days
- ✗ Microalbumin within last 360 days
- ✗ GFR (CrCl) estimated in normal range and within last 360 days
- ✓ Valid encounter within last 6 months
- ✓ Diabetic Eye Exam up-to-date per Health Maintenance
- ✓ Diabetic Foot Exam up-to-date per Health Maintenance

Protocol Details

**Rx sitagliptin (JANUVIA) 100 mg tablet**  
Take 1 Tab by mouth once daily  
Disp: 90 Tab [View order history](#) Refills: 1  
Class: e-Prescribing Start: 5/21/2018  
For: Uncontrolled type 2 diabetes mellitus without complication, without long-term current use of insulin (HCC)  
Originally ordered: 2 years ago [REDACTED]

**Endocrinology: Diabetes - Incretin Enhancers Failed**  
5/21 10:38 AM

- ✗ Diabetic Eye Exam up-to-date per Health Maintenance
- ✗ Diabetic Foot Exam up-to-date per Health Maintenance
- ✗ HBA1C in normal range and within last 360 days
- ✗ Microalbumin within last 360 days
- ✓ Valid encounter within last 6 months
- ✓ Cr in normal range and within last 360 days

Protocol Details

prevent the patient from getting a refill, the information is useful for the pharmacists, especially if the patient will be coming in for an appointment. Pharmacists can try to take the appropriate steps to get those items completed at that time, like putting a notation that they are due on the appointment notes. These are the type of workflows that healthfinch coaches will continue to implement and monitor with the clinics around care gaps.

In addition to putting medication protocols in place, the healthfinch team also worked with pharmacists to put standardized work flows (i.e., to address the manual part of the prescription refill process) in place immediately after the go-live date for the automated refill management platform. According to Ms. Hobson of healthfinch, the pharmacy team had not used standardized work flows in the past. As part of this process, Ms. Hobson shadowed the pharmacists to better understand their approach to refills and documented vastly different approaches to processes used among pharmacists. Following this activity, the healthfinch team trained the pharmacists, reviewed new work flows with the pharmacists, and then put the work flows in place. Some of these work flow adjustments included expanding the supply of medications to patients. Just like the work flow change that AMC had made, QHC pharmacists were in the habit of providing a 90-day supply with no refills and then have patients request a refill at the end of ninety days (similarly, patients at AMC are prompted by providers to return for a follow-up visit in three months).

Based on the new protocol, staff changed the work flow to expand the medication supply. So, for example, if a patient was just seen by a provider and was taking a

medication with a requirement for an office visit every twelve months, pharmacists were encouraged to provide a 12-month medication supply instead of a 3-month supply, since this would still fall within protocol (and as long as pharmacists were comfortable with the office visit intervals). As another example, if a patient was overdue for an office visit, pharmacists would typically provide a 30-day medication supply. However, not all patients at QHC are able to schedule an office visit within the next thirty days, particularly if it's a routine visit. So, the healthfinch team encouraged the QHC pharmacy team to align the courtesy refill with the patient's active status and modify this protocol to include longer refill periods.

According to Lesley Hobson, expanding the medication supply is a good strategy for two reasons: First, given the clinic's high no-show rate, a smaller medication supply is likely not a sufficient incentive to get a patient to return for an office visit, even after his medication supply runs out. And, second, when a patient finally does come back for an office visit, it's also likely that his blood pressure or blood sugar level will be out of control if he exhausts his medication supply. On the other hand, according to Marina Snitman, Director of Pharmacy at QHC, providing a larger supply of medication may reinforce the notion that a patient may choose to skip a scheduled visit. The pharmacy staff will likely have to monitor this to determine the best approach and may need to modify this based on the clinical outcomes of their patients. However, as described earlier in this report, prior studies have documented that extending the medication supply period can result in better patient adherence to their medications and clinical outcomes.

While the QHC pharmacists have a robust set of protocols in place and have been happy with them, they continue to review their current set of protocols and make additional adjustments as needed. The healthfinch team checks in with the pharmacists weekly to be sure the protocols are working as designed and exactly where the staff would like them to be. The real benefit for QHC (and for AMC, as well) is that they are able to customize these protocols. On a side note, healthfinch also provided OCHIN with import specifications for the medication protocols so that they did not have to be built out manually. This saved OCHIN and the sites substantial time in implementing these protocols. According to Anne Baldwin, Director of EMR Integrations at healthfinch, typically these protocols can take up to 10 hours each to build and test.

The healthfinch team also made other changes to the pharmacy team's work flow to improve overall efficiency. Similar to what the healthfinch staff observed with AMC, Surescripts requests at QHC were sent directly to providers' InBaskets, so that pharmacists had to access each individual provider's InBasket within Epic and route those requests back to the clinical pharmacy pool. And, similar to the experiences of



providers at AMC, it also was difficult for providers to differentiate between refill requests that were sent back to them by the pharmacists for review versus those that the pharmacists had not yet had a chance to address. Healthfinch staff worked with OCHIN staff to redirect Surescripts requests to the pharmacy pool instead of to providers' InBaskets to streamline this process.

To help clinical pharmacists improve their prescription management efficiency, the healthfinch team also observed that the pharmacists were not making the best use of the functionality of Epic's

InBasket tools. For example, Epic provides digital access to a patient's medication list and progress notes. However, pharmacists got into the habit of reviewing the patient's chart, which is a time-consuming process. The pharmacists have been trained on the InBasket tools by healthfinch staff so that they no longer need to go into the patient's chart to complete their review. According to Lesley Hobson, although this was an "uncomfortable" work flow change for the pharmacists at first, they have since felt that they are able to move

through the refills more efficiently this way, but still access patients' charts as needed.

*"I like the fact that the healthfinch platform introduces standardized protocols. I have pharmacists who have been doing this for a year and pharmacists who have been doing this for 10 years. So each has a different comfort level in terms of approving a refill: One might approve a month's worth of medication, another might approve a week's worth and a third might deny it. Having them work off the same protocol and be on the same page will help streamline and standardize our refill process."*

Marina Snitman, PharmD  
Director of Pharmacy  
QueensCare Health Centers

### *Clinical Efficiencies Resulting from Use of Charlie Platform*

Just like with AMC, improvement across the clinical efficiency measures was observed, although the effect was not as strong. Before Charlie was implemented, an average of 73% of refill requests were completed the same day compared to 76% post-implementation. As shown in the chart, the percentage of same day refills gradually increased from pre- to post-Charlie implementation.

There was actually a slight dip in the number/percentage of refills completed by nonproviders, dropping from 84% before Charlie was implemented to 78% after Charlie was implemented. However, it's important to note that the percentage is more than twice that reported for AMC at baseline (39%). In addition, the chart also shows a gradual upward trend both pre- and post-implementation.<sup>17</sup>

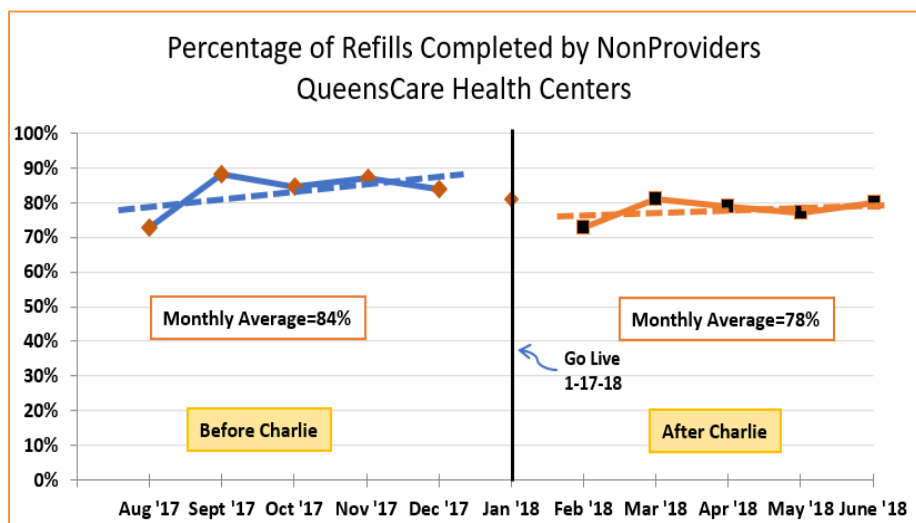
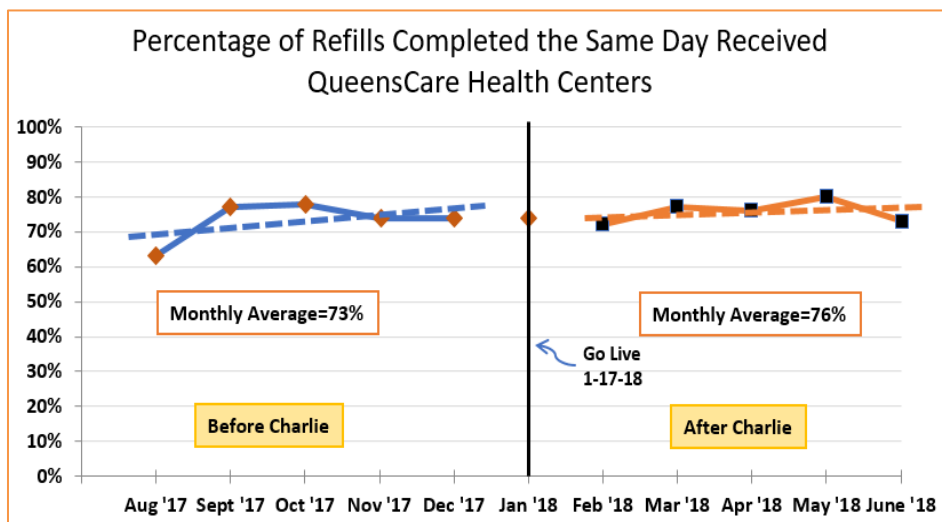
According to Lesley Hobson, this short-term drop post-implementation may have been due to the absence of a protocol in place initially for the clinical pharmacists. Because clinical pharmacists have prescribing

privileges and do not necessarily have to follow a protocol as strictly as a nurse or pharmacy tech would, decisions were made based initially on the individual pharmacist's discretion. However, when the team began diving into the protocols and discussing the risks of some of the medications, such as antipsychotics or even medications on the

culp of being a controlled substance (e.g., gabapentin), some of the pharmacists began routing the refill requests back to the providers, resulting in the lower nonprovider refill percentages shown in the chart.

However, over time, this percentage

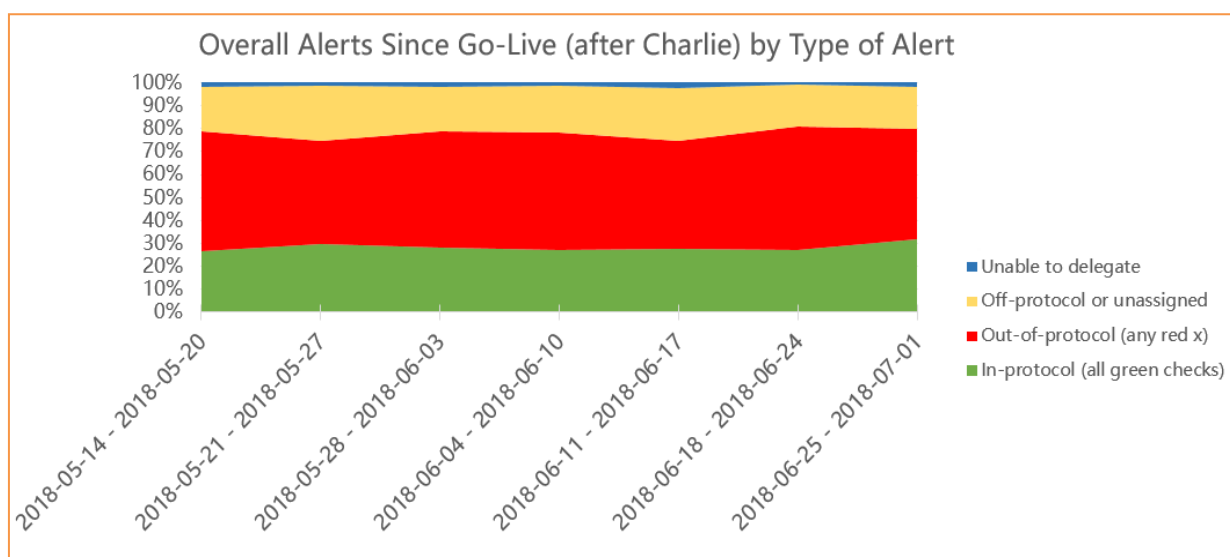
began to increase again. It's important to note that there may not be much room for more improvement with this measure for QHC for two reasons: First, given the high



<sup>17</sup> Results for number of refills completed by nonproviders are similar to the results shown in the chart for percentage of refills.

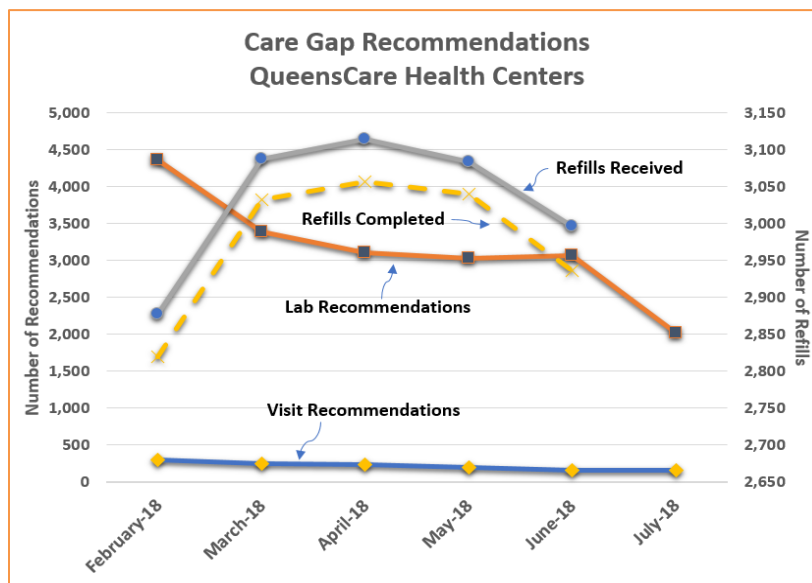
baseline delegation percentages already in place, this site focused more on implementing a standardized protocol to enable pharmacists to work in alignment. Second, the fact that clinical pharmacists still send back controlled substances refill requests to providers consistently also would stabilize this percentage over time. According to Ms. Hobson, it's not unusual for 15-20% of refill requests to fall into the controlled substances category.

The chart below illustrates, over a 7-week sample period, the types of alerts that are flagged by Charlie that are either in or out of protocol for QHC. While the protocols for QueensCare and Alliance are very similar, Alliance's protocols are a bit more conservative regarding which requests need to be routed back to providers for refills. As a result, there are more medications in-protocol at QueensCare and providers are more comfortable delegating these requests to the clinical pharmacists. For QueensCare, 28% of its refills are in-protocol compared to only 17% for Alliance (data for Alliance is not shown).



As described earlier in this report, the care gap function identifies overdue labs but also recommends office visits that need to be addressed in the next ninety days. Although this functionality was active in the background beginning January 26, 2018 for both demonstration sites, only QHC received direct access to this function in early July 2018. As we reported above for AMC, staff at heathfinch also provided us with background care gap data for QHC for the period following the go-live date. The chart below shows care gap data for QHC. Just like with AMC, the platform was successful at flagging recommendations for overdue or upcoming labs and office visits.

Moving forward, healthfinch's care gap functionality has the potential to help pharmacists streamline their work and can save them time from manually scanning a



a medical chart as they weigh additional information from a patient's medical record—for example, facilitating the pharmacist's decisions around scheduling the next lab test or office visit. As with AMC, the follow-through of scheduling follow-up visits or lab work identified through healthfinch's care gap functionality software is a time-consuming process for the pharmacist. In the

current work flow at QHC, after identifying any care gaps, pharmacists enter the lab order and, if patients need to be rescheduled for a visit, the order is manually forwarded to front office staff to contact the patient. A simple refill can therefore take 10 minutes to complete by the time a pharmacist completes all of these steps. As a result, just like the AMC pilot site, the Director of Pharmacy at QHC is seeking approval to hire additional staff to complete the scheduling work and focus on the patient outreach that comes with the refill protocol. All in all, the pharmacy team hopes these changes will streamline their work flow and minimize administrative tasks, so that they can spend more time with patient care and, perhaps, see more patients.

## CROSS-SITE LESSONS LEARNED

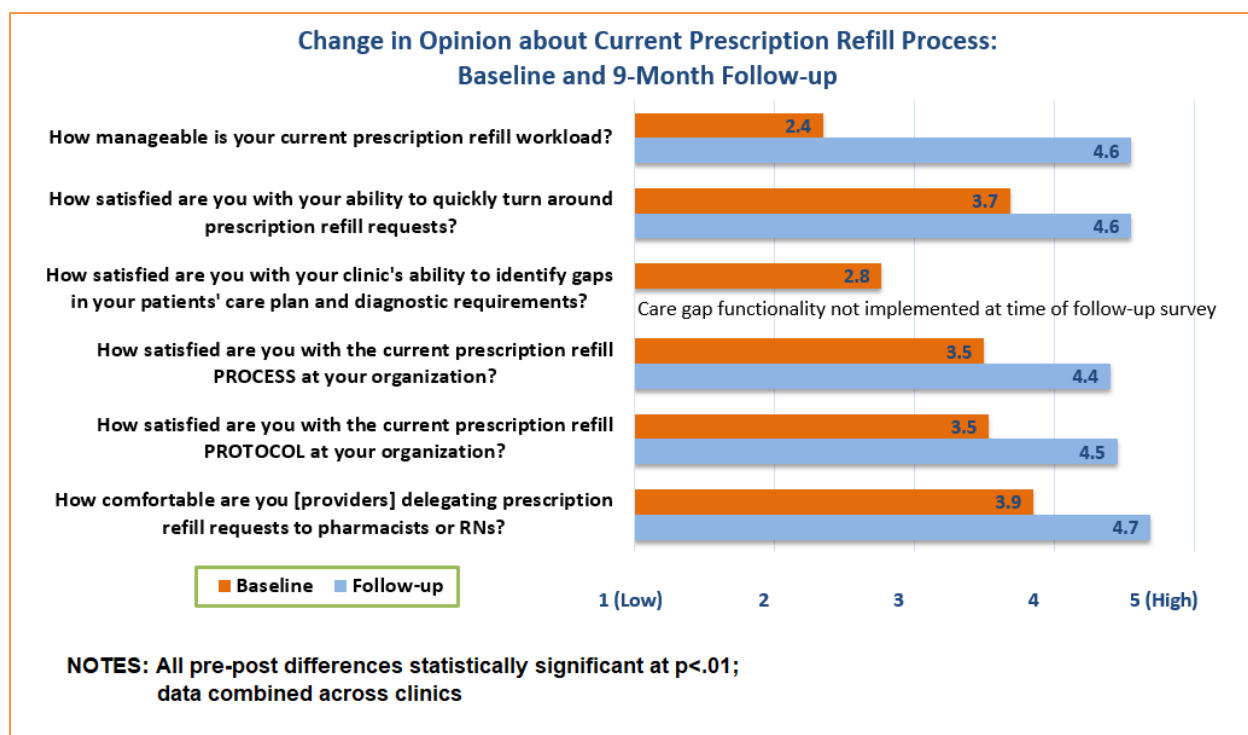
In this section, we provide results from the feedback survey, selected return on investment (ROI) measures provided by healthfinch staff, and cross-site lessons for the field, which can be used by other safety net organizations to help leadership and staff better understand the steps, benefits, and challenges of implementing automated prescription refill platforms.

### Staff Feedback on Use of Charlie Platform

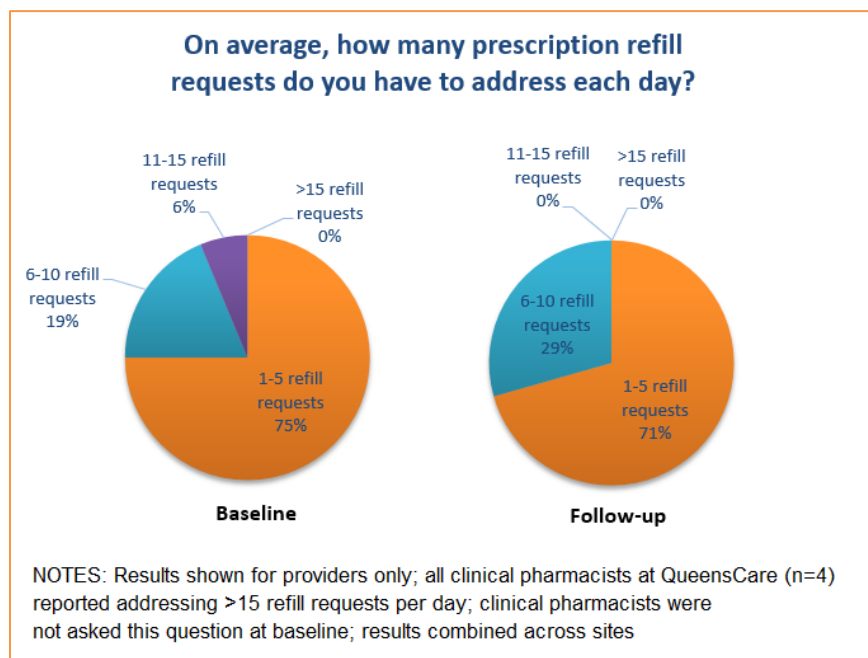
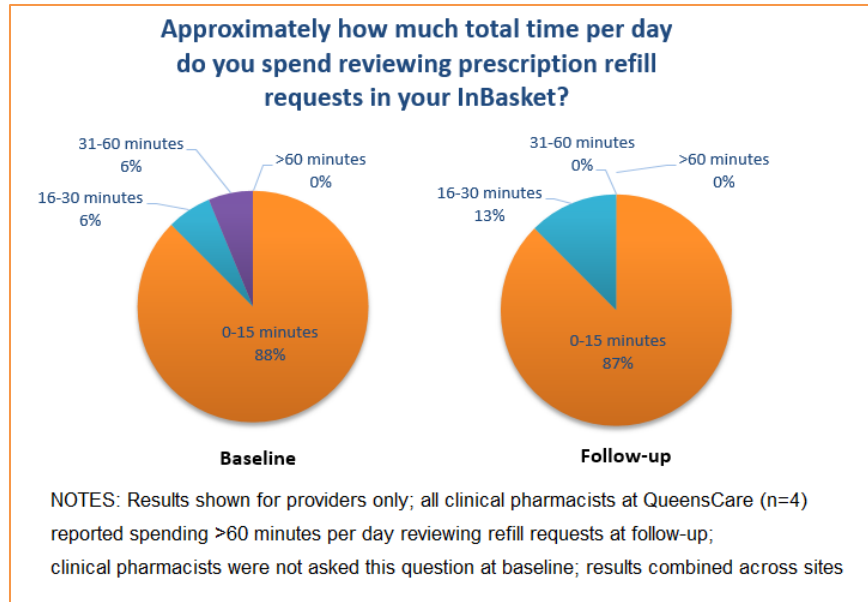
The findings from the staff feedback survey were positive and reflect the positive findings from the quantitative and qualitative data across sites. The baseline survey was

administered in Oct/Nov 2017 to seventeen staff at QueensCare Health Centers (QHC) and to three staff at Alliance Medical Center (AMC); the follow-up survey was administered in July 2018 to eighteen staff at QHC and one staff at AMC. One provider at AMC declined to take the follow-up survey. Results were combined across the two sites.

We asked staff their opinion about a number of issues related to their prescription refill process before and after implementation of Charlie. The chart below shows large and statistically significant improvements in how staff viewed the various aspects of the refill process, all reflecting the clinical efficiencies described earlier in this report. The largest



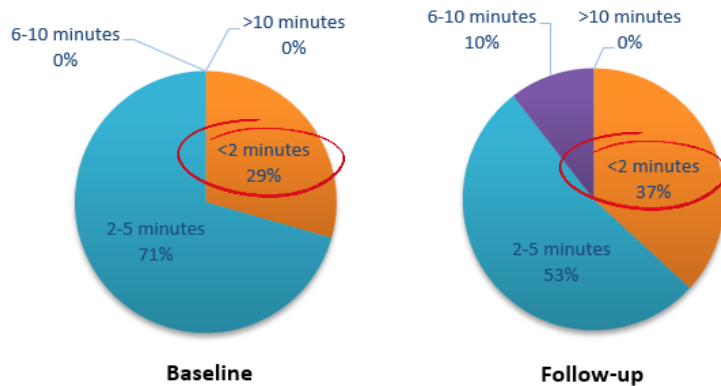
changes were noted for improvements in prescription refill workloads and turnaround time for prescription refill requests. At follow-up, staff also were more satisfied with the new protocols in place and their comfort level with delegating refill requests to pharmacists or nurses. Slightly lower reports of prescription refills and time spent filling prescriptions were self-reported by providers at follow-up (see charts below), reflecting the offloading of these requests at both sites.



Also in line with the clinical efficiency data, staff self-reported improvements in time spent authorizing prescription refill requests, most likely as a result of the medication protocols put into place. As a result of these automated and standardized protocols, staff also self-reported spending less of their off-time addressing prescription refill requests (see charts below).

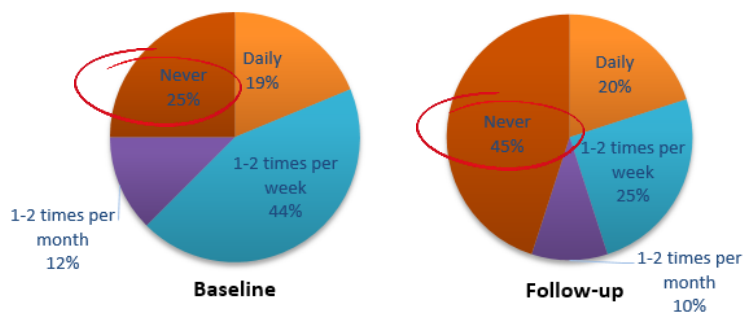


**Approximately how much time do you spend on each prescription refill request to determine if you are going to authorize or deny a prescription refill request?**



NOTES: Results combined across clinics

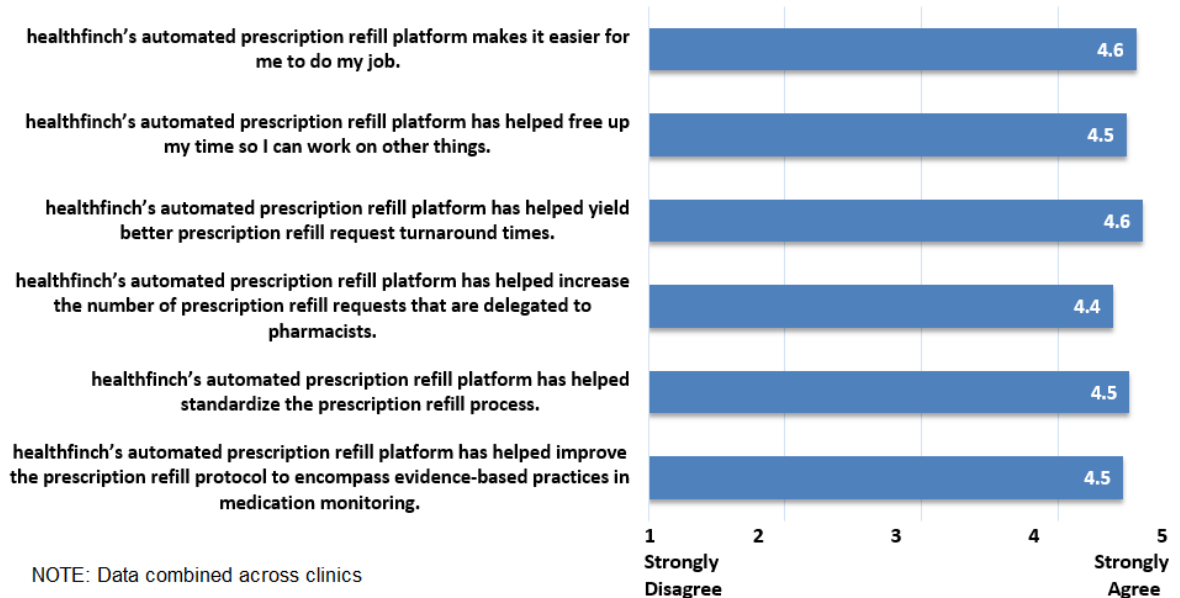
**How often do you have to spend your off-time addressing prescription refill requests?**



NOTES: Results combined across sites

Following implementation of Charlie, we asked staff their opinions about various ways the automated platform has helped streamline their work. Virtually all staff strongly agreed that the Charlie platform made it easier for them to do their job so that they could focus on other things, yielded better prescription turnaround times, improved delegation to nonproviders, helped standardize the refill process, and encompassed evidence-based practices in medication monitoring.

### Opinion about healthfinch's Automated Prescription Refill Platform



Staff was asked to rate their overall satisfaction with healthfinch's automated prescription refill platform. A majority (81%) gave Charlie the two highest ratings of "Delighted" and "Pleased" and 19% were "Mostly Satisfied" with Charlie.

### How would you rate your overall satisfaction with healthfinch's automated prescription refill platform?



NOTE: Data combined across clinics

Finally, we asked clinic staff to provide recommendations for ways to improve the Charlie platform interface. Although the healthfinch coaches regularly connect with the clinics to make adjustments to Charlie, clinic staff continues to find ways to fine tune the way Charlie works. These enhancement requests have been passed along to healthfinch and OCHIN staff and are currently being reviewed by healthfinch's product team (see Appendix for list of enhancement requests).

## *Selected Return on Investment Measures*

The clinical efficiencies detailed in this report can be translated into time savings and potential revenue generated. In this section we report on selected return on investment measures based on data obtained from healthfinch. It's important to note that the measures are based on six months of data following implementation of Charlie. Ideally, utilizing longer-term results (for example, through one year) could provide more stable estimates and account for seasonal effects in prescription refills. Other caveats include the fact that both sites experienced leadership and staff turnover during pre- and post-implementation and the total functionality of Charlie has not yet been used by either site.

The Charlie Platform was successful in delegating prescription refill requests to nonproviders at both clinics. While the overall volume of refill requests was almost three times higher for QHC, the volume of refill requests delegated to nonproviders was higher for AMC. For AMC, there were 390 additional refills completed by nonproviders at post-implementation. If it is assumed conservatively that each refill takes two minutes for a provider to complete (although this could potentially take between three and four minutes), this would save 780 minutes of her time. With the potential for four additional visits per hour and a revenue of \$75 for each visit, this could translate into \$3,900 of potential additional revenue each week or about \$203,000 annually. Similarly, for QHC, there were seventeen additional refills completed by nonproviders at post-implementation. Using the same assumptions that were used for AMC, this would translate into \$170 of potential additional revenue each week or close to \$9,000 annually.

Revenue gains from closing care gaps are also possible once this functionality is utilized to its full potential by each of the clinics (as is the potential to improve quality metrics like a1c screening or foot and eye exams for diabetes based on the identified care gaps). Based on about 30% of prescription refills missing a lab as required by protocol (using historical data), healthfinch staff estimated 228 missing labs on a weekly basis or 11,856 missing labs annually at Alliance. Healthfinch estimates the average revenue at \$25 per missing lab, resulting in \$5,700 in estimated lab revenue each week and about \$296,000 annually. Using the same assumptions for QueensCare, healthfinch estimated much higher revenues given the higher volume of refills at QHC. Missing labs were estimated at 719 per week and 37,888 annually, which translates into about \$18,000 in lab revenue each week and about \$935,000 annually.

In addition to missing labs identified by the care gap functionality, recommended visits are also flagged by the system. Using historical data (i.e., about 8% of prescription refills

missing a visit as required by protocol), healthfinch staff estimated thirty missing visits on a weekly basis or 1,560 visits annually for Alliance. Healthfinch estimates the average revenue at \$75 per visit, resulting in \$2,250 in estimated visit revenue each week and about \$117,000 annually. Using the same assumptions for QueensCare, healthfinch estimated higher revenues given the higher volume of visits at QHC. Missing visits were estimated at 56 per week and 2,912 annually, which translates into about \$4,200 in potential visit revenue each week and about \$218,000 annually.

#### Summary of Potential Annual Revenue Gains for Selected Metrics

Efficiency/Quality Metric	Alliance Medical Center	QueensCare Health Centers
<b>Delegating prescription refill requests to nonproviders</b>	\$203,000	\$9,000
<b>Missed labs</b>	\$296,000	\$935,000
<b>Missed office visits</b>	\$117,000	\$218,000

Data source: Healthfinch staff, personal communication, August 2018

#### *Lessons for the Field*

Despite a number of challenges faced by the two clinics—particularly around leadership and staff turnover—both sites were successful in implementing the Charlie platform. Although each of these sites had different experiences pre- to post-implementation, there are a number of common threads that will be useful to other safety-net organizations that are interested in implementing an automated prescription refill platform:

- ◆ The tailoring aspect of the medication protocols based on provider input actually makes the system smarter and more efficient since the clients help build these medication protocols and this approach can be easily adopted by other health care systems. Over time, this should reduce the need for manual review of patient records, especially those with more routine prescription refills.
- ◆ The coaching offered by healthfinch staff is critical to helping clinic staff standardize and streamline their workflows, so that prescription refills are done more efficiently. This is an extra layer of standardization that healthfinch has added (i.e., over and above medication protocols), which improves clinical efficiency. Having an automated prescription refill system may be necessary but not sufficient by itself to impact overall efficiency, so that layering on

standardized workflow protocols is a critical piece of the whole package and can improve overall efficiency.

- ◆ Healthfinch's Charlie will roll out more efficiently in clinics with a good infrastructure already in place. It goes without saying that delegating refills to nonproviders will only work efficiently if there are enough nonproviders to take on the refill process (nursing and pharmacy staff). Similarly, to make full use of Charlie's functionality, particularly around care gaps, staff such as care coordinators could take the burden off providers by helping to schedule patients for missed or upcoming labs or office visits, greatly reducing the backlog that many clinics experience. Unfortunately, staff turnover is a reality faced by many clinics, so the full benefits of Charlie can be achieved only with a solid infrastructure in place. This is not surprising and applies to implementation of any innovation in a health care delivery system.
- ◆ Many clinics care for medically complex patients, which can push the limits of Charlie's efficiency. According to the providers that we interviewed, manual review of a medically complex patient's chart is still necessary despite the medication protocols that are put into place. However, staff still reported overall efficiencies in using Charlie (and as we found, for example, with Alliance's efficiency metrics) and over time the care gap functionality feature could potentially have a positive impact on this high risk population. As one provider from Alliance noted, *"If everything is green and good to go then you can get those things out in a very short amount of time – it's slower for us because we don't have the provider base and we have the care gaps; we don't have that many patient who are 'clean' (i.e., 'all green checks')."*
- ◆ In our experience in working with health IT startups, those that are data savvy are more likely to be successful, particularly in spreading their solutions to clinics that make decisions to purchase new technology if it can improve the quality of care and increase revenue. Healthfinch clearly understands the importance of this, since their platform focuses on clinical efficiency, their health coaches are well-versed in improving workflow, and the company has dedicated staff to dig into quality metrics for its clients. The company also has been transparent in sharing their impact data with OCHIN, the Foundation, the sites, and the evaluation team. Likewise, clinics will see more of a benefit if there are internal staff who are dedicated to understanding quality improvement and the importance of data in driving decisions to change work flow and subsequently improve quality metrics.

- ◆ Just like any other quality improvement initiative, clinic staff need to be open to and willing to make changes in their work flow, even if it may feel uncomfortable at times. In addition, staff need to continue to fine-tune these work flows and even implement new work flow changes to sustain any gained clinical efficiencies.
- ◆ We were able to document shorter-term successes in efficiency measures and positive staff feedback through this demonstration pilot (i.e., through six months post-implementation). We would recommend that clinics internally commit to longer-term monitoring up to twelve months or longer, if feasible, so that sustained effects and better value in health care—particularly around improvements in clinical efficiency, patient care, and patient quality metrics (e.g., compliance with recommended labs or office visits)—can be demonstrated through health care innovation.
- ◆ Given healthfinch’s internal capacity to monitor and report on clinical efficiency for its clients, we recommend that clinics work with healthfinch’s coaches upfront so that they can better understand return-on-investment measures that might be more tailored to their needs, for example, around staffing requirements for centralizing prescription refills or projecting revenues based upon freed up time among providers.
- ◆ It is no surprise that more successful health care delivery systems are more strategic in cultivating provider champions. Both demonstration sites involved in the healthfinch pilot have physician or nurse champions/leaders who took responsibility for steering implementation of the innovation internally. While this idea is not new and applies to the implementation of virtually any innovation, program, or service, it is critical to successful buy-in, implementation, and sustainability. Safety-net organizations interested in implementing a solution like this should consider creating a leadership team that can guide the innovation through the various steps and challenges to make it a success.

### *Notable Quotes from Staff about Charlie Platform*

*“It can get a little long looking at all the labs and everything that’s listed for a patient, but [Charlie] specifically targets and says, ‘Hey you need to be on the lookout for this’, so it steers us in the right direction.”*  
*(Clinical Pharmacist)*



“With the protocol in place it allows us to get a heads up of what labs/follow-up appointments a patient needs. It gives me [red] Xs and [green] checks, so I know exactly what I’m looking for, which makes the process even faster. Sometimes for some of the lab values for one of the medications I would forget, it gives me a reminder when I’m doing refills.” (Clinical Pharmacist)

“It’s nice to have a reminder to look at certain things, especially if a dosage estimate is needed or you can’t use a certain medication for whatever reason, especially for the meds that we don’t really deal with.” (Clinical Pharmacist)

“As soon as they [refill requests] pop up I can do them at any time...if I go in there and everything looks ‘green’ and I know the medication is just routine, I can just do the refills.” (Registered Nurse)

“I don’t need to spend as much time going through the patients’ meds making sure they have refills. I know that there’s a mechanism in place that if something is missed they’ll be able to get their refill in a timely manner.” (Clinical Pharmacist)

“It’s definitely helpful, but we still open up the chart regularly because there’s still a lot of clinical judgement that is involved, but it speeded up the process a lot.” (Clinical Pharmacist)

“Some of the [refill requests] would go unnoticed, so we would constantly have to follow-up with providers so there was a delay in getting these refills approved. But now that it’s coming into our InBasket, providers are aware to look out in their InBaskets if there’s something in there that needs their attention.” (Clinical Pharmacist)

*“We’re actually going through referrals, making sure that [patients] have the appointments for the last 3, 6, 9 months, whatever it is, and making sure that they come back for labs...it keeps us grounded with our patients to help bring them back.” (Clinical Pharmacist)*

## **CONCLUDING REMARKS**

Refilling prescriptions is a time-consuming process that takes primary care providers and their staff away from other important tasks related to direct patient care. To address these work inefficiencies, healthfinch created The Charlie Practice Automation Platform (formerly Swoop) to automate the prescription refill process and save providers time while increasing accuracy. To better understand the potential for implementing this technology among safety-net providers in California, CHCF and healthfinch collaborated with two health centers: Alliance Medical Center in Sonoma County and QueensCare Health Centers in Los Angeles County. Both health care systems are members of OCHIN and implemented healthfinch’s automated refill technology through OCHIN’s cloud-based Epic platform. Healthfinch partnered with OCHIN to integrate its platform into its cloud-based Epic software.

Our findings are promising and suggest a strong potential for implementing this type of technology among safety-net providers. Despite a number of challenges to implementation faced by each of the two demonstration sites, both clinics were quite successful in implementing the Charlie platform. Our evaluation documented pre-to post-implementation improvements across a number of measures encompassing clinical efficiency and self-reported feedback about the Charlie platform. Although it goes without saying, the successes experienced by these two clinics could not be achieved without strong internal leadership, staff commitment to implementing the product, and a willingness to implement evidence-based protocols to streamline medication refill requests, as well as standardized work flows.

We also presented examples of potential revenue that can be gained through task delegation and missed labs and office visits that might be useful to other safety-net providers. Finally, we presented lessons learned that can be used by other safety net organizations to help leadership and staff better understand the steps, benefits, and challenges of implementing automated prescription refill platforms.

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***White Mountain Research Associates, LLC***

*PO Box 760  
Walpole, NH 03608  
603.904.4141  
sethemont@outlook.com*

## **APPENDIX**

## **Staff Feedback Baseline Survey about healthfinch's Automated Refill Platform (October/November 2017)**

Approximately how much total time per day do you spend reviewing prescription refill requests in your In Basket?

- ☐ 0-15 minutes
- ☐ 15-30 minutes
- ☐ 30-60 minutes
- ☐ >60 minutes

Approximately how much time do you spend on each prescription refill request to determine if you are going to authorize or deny a prescription refill request?

- ☐ 0-1 minutes
- ☐ 2-5 minutes
- ☐ 5-10 minutes
- ☐ >10 minutes

On average, how many prescription refill requests do you have to address each day?

- ☐ 1-5 refill requests
- ☐ 5-10 refill requests
- ☐ 10-15 refill requests
- ☐ >15 refill requests

How often do you have to spend your off-time addressing prescription refill requests?

- ☐ Daily
- ☐ 1-2 times per week
- ☐ 1-2 times per month
- ☐ Never

On a scale of 1-5, how burdensome are prescription refill requests to YOU? (1=MINIMAL burden to 5=VERY burdensome)

On a scale of 1-5, how satisfied are you with your ability to quickly turnaround prescription refill requests for your patients? (1=NOT satisfied to 5=VERY satisfied)

How satisfied are you with your clinic's ability to identify gaps in your patient's care plan and diagnostic requirements? (1=NOT satisfied to 5=VERY satisfied)

On a scale of 1-5, how satisfied are you with the current prescription refill process at your organization? (1=NOT satisfied to 5=VERY satisfied)

On a scale of 1-5, how satisfied are you with the current prescription refill protocol at your organization? (1=NOT satisfied to 5=VERY satisfied)

On a scale of 1-5, how comfortable are you delegating prescription refill requests the pharmacists? (1=NOT comfortable to 5=VERY comfortable)

Do you know who manages the prescription refill protocols at your organization?

- ☐ Yes
- ☐ No

When your organization implements a new process or program, how do you prefer to receive training?

- ☐ In-person training session
- ☐ Teleconference training session
- ☐ Distributed training materials for you to review on your own timeline
- ☐ Other (please explain): \_\_\_\_\_

Our goals with this project are to:

- Increase the efficiency of the prescription refill process to yield better prescription refill request turnaround times, increase the number of prescription refill requests that are delegated to pharmacists, decrease the number of prescription refill requests that are routed to prescribers.
- Improve the Prescription Refill Protocol to encompass evidence-based practices in medication monitoring
- Streamline the Patient Outreach and Scheduling Workflows needed to keep patients in compliance with the Prescription Refill Protocol

Out of the goals listed above, which goal is the most important to you?

Out of the goals listed above, which goal is least important to you?

# healthfinch Refill Management Platform Follow-up Feedback Survey

## April/May 2018

Thank you in advance for providing feedback about your experiences with healthfinch's automated refill management platform. We're interested in your experiences following the launch of healthfinch's automated prescription refill management platform (which happened around January 2018). Your responses will be helpful to other practices that are interested in exploring automation of their prescription refill process. Your participation in this survey is voluntary and your responses will be kept confidential. This survey will take less than 5 minutes to complete. We really appreciate your input!

**What is your position at the health center?**

- ☐ Nurse Practitioner ☐ Pharmacist ☐ Physician

**About how much total time per day do you spend reviewing prescription refill requests in your InBasket?** (check one of the following responses)

- ☐ 15 minutes or less ☐ 31-60 minutes  
☐ 16-30 minutes ☐ More than 60 minutes

**About how much time do you spend on each prescription refill request to determine if you are going to authorize or deny the prescription refill request?** (check one of the following responses)

- ☐ Less than 2 minutes ☐ 6-10 minutes  
☐ 2-5 minutes ☐ More than 10 minutes

**On average, how many prescription refill requests do you have to address each day?** (check one of the following responses)

- ☐ 1-5 refill requests ☐ 11-15 refill requests  
☐ 6-10 refill requests ☐ More than 15 refill requests

**How often do you have to spend your off-time addressing prescription refill requests?** (check one of the following responses)

- ☐ Daily ☐ 1-2 times per month  
☐ 1-2 times per week ☐ Never

**On a scale of 1-5, how manageable is your current prescription refill workload?** (circle one number below)

1 2 3 4 5  
 Not at all manageable Very manageable

**On a scale of 1-5, how satisfied are you with your ability to quickly turnaround prescription refill requests for your patients?** (circle one number below)

1 2 3 4 5  
 Not at all satisfied Very satisfied

**On a scale of 1-5, how satisfied are you with your clinic's ability to identify gaps in your patient's care plan and diagnostic requirements?** (circle one number below)

1 2 3 4 5  
 Not at all satisfied Very satisfied

**On a scale of 1-5, how satisfied are you with the current prescription refill process at your organization?**

(circle one number below)

1 2 3 4 5  
 Not at all satisfied Very satisfied

**On a scale of 1-5, how satisfied are you with the current prescription refill protocol at your organization?**

(circle one number below)

1 2 3 4 5  
 Not at all satisfied Very satisfied

**PHYSICIANS AND NURSE PRACTITIONERS ONLY:** On a scale of 1-5, how comfortable are you delegating prescription refill requests to pharmacists? (circle one number below)

1 2 3 4 5  
 Not at all comfortable Very comfortable

**healthfinch's automated prescription refill platform('s)...**  
 (check one response for each item below)

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
... makes it easier for me to do my job.					
... has helped free up my time so I can work on other things.					
... has helped yield better prescription refill request turnaround times.					
... has helped increase the number of prescription refill requests that are delegated to pharmacists.					
... has helped standardize the prescription refill process.					
... has helped improve the prescription refill protocol to encompass evidence-based practices in medication monitoring.					
... care gap functionality has helped streamline my patients' outstanding or upcoming labs or health screenings					

**How would you rate your overall satisfaction with healthfinch's automated prescription refill platform?** (select one of the following responses by placing an 'X' in the box)

Delighted	Pleased	Mostly Satisfied	Mixed	Mostly Dissatisfied	Unhappy	Terrible

If your level of satisfaction with the prescription refill platform is "Mixed", "Mostly Dissatisfied", "Unhappy", or "Terrible", please tell us why:

**What is the greatest benefit you have gained from using healthfinch's prescription refill platform to date?**



## **Clinic Staff Recommendations for Enhancing the Charlie Platform Interface**

- ❖ Include an alert for drug-to-drug interaction, and /or duplicate drug classes being ordered for the same patient
- ❖ Include alerts on opioids for patients
- ❖ Fix repetitive scrolling for reviewing labs for multiple categories of medications (change the way labs are grouped for multiple medications)
- ❖ Show a trend in lab results (particularly blood pressure)