



# The impact of telehealth and telepharmacy technology on public health service pressure and patient outcomes

Now Healthcare Group 2019



## Foreword

The government's NHS ten-year plan discussion document<sup>1</sup> is clear on the need for the system to evolve if it is to meet the changing requirements of patients. Two of the key enablers of improvement that the government has identified are;

**Primary care** - ensuring that pressure on GPs does not affect their ability to provide the best care, reliance on hospital services is reduced, and that patients are empowered to pro-actively manage their condition

**Digital innovation** - enhancing the efficiency of care delivery and improving the patient experience.

Now Healthcare Group has developed technology to specifically deliver against these enablers. Our app-based technology puts control firmly in the hands of the patient, allowing them to manage their primary care experience and fulfil any resulting prescriptions at their convenience.

This report explores and quantifies the benefits that such an approach to primary care offers to patients, public health services and society as a whole. The ultimate conclusions show that adoption of digital solutions can have a significant positive impact on GP pressure, medicine adherence and medicine wastage.



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<sup>1</sup> [https://www.engage.england.nhs.uk/consultation/developing-the-long-term-plan-for-the-nhs/user\\_uploads/developing-the-long-term-plan-for-the-nhs-v2.pdf](https://www.engage.england.nhs.uk/consultation/developing-the-long-term-plan-for-the-nhs/user_uploads/developing-the-long-term-plan-for-the-nhs-v2.pdf)



## Executive Summary

Now Healthcare Group (NHG) is a UK based telehealth & telepharmacy provider. Its proprietary technology delivers digital GP consultations, app-based processing and delivery of private + NHS prescriptions plus inbuilt medicine adherence functionality.

The results outlined within this report analyse the effectiveness of NHG technology on patient outcomes, medicine adherence and the reduction of pressure on public health services and private employers.



## The key headlines from the research are:

1. Use of telehealth consultations obviated the need for an NHS GP appointment in 56% of cases and a hospital appointment in 3% of cases. Extrapolated across the population as a whole, adoption of the technology could potentially save public health services in England **£7.5bn** annually.
2. Pre-triage through app technology could redirect up to 73% of patients to non-GP consultations (i.e. nurse or pharmacist), reducing pressure on primary care doctors. Successful implementation of such a programme could deliver additional annual savings of **£2.2bn**.
3. Adoption of the technology amongst private employers has prevented 600 days of workplace absence (per 100,000 people), equivalent to an annual productivity benefit across the UK worth **£240m** in value.
4. Usage of adherence technology improved the probability of patients sticking to their medication schedule by **41%**.
5. When patients were given direct control over repeat prescription ordering they only ordered **31%** of total possible items, demonstrating the scope for the technology to reduce over-ordering waste.

# Introduction

Now Healthcare Group is a telehealth provider founded in 2014 and based in the North West of England. The company has designed and built tech solutions to deliver digital access to GP consultations and allow digital ordering of private and NHS prescriptions.

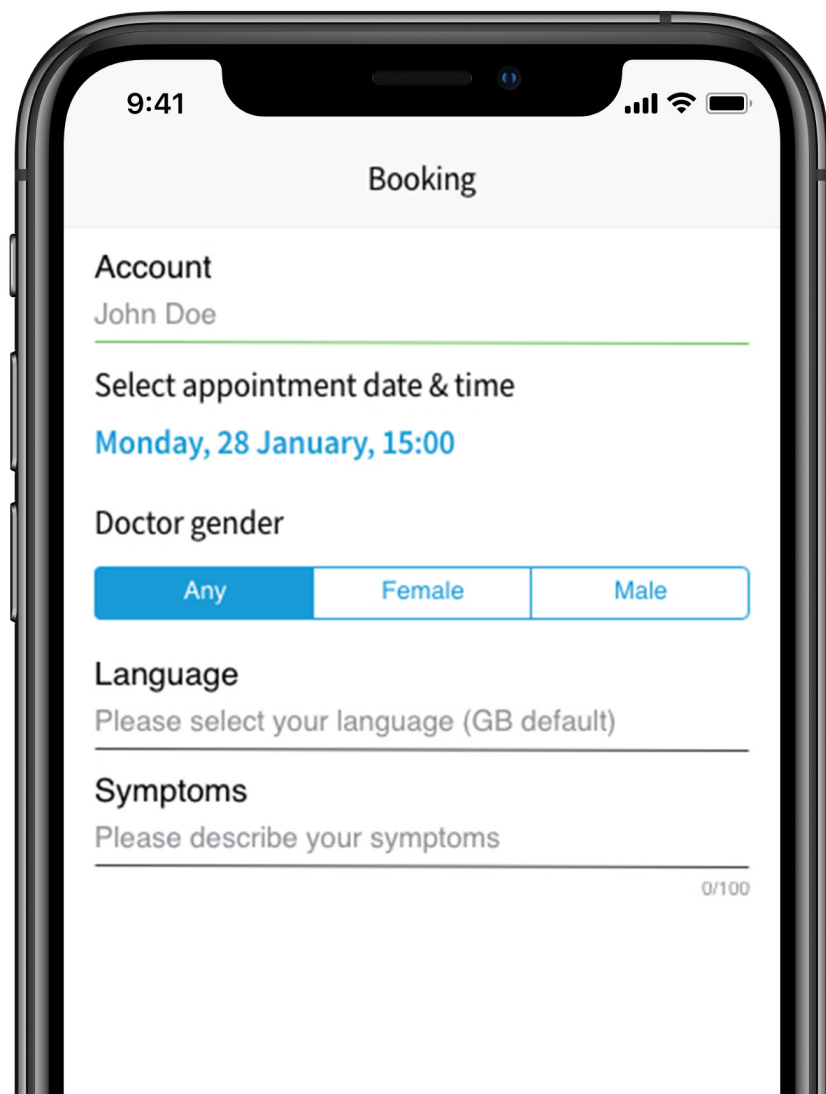
This paper outlines the results of NHG's first few years of operation on patients, public health services and private clients.

NHG's technology has two main strands, both of which are fully integrated into a cloud-based app platform;

## i. Telehealth / Digital Consultation

NHG's platform enables users to receive a remote digital consultation via their mobile device. Users are connected via a secure platform to the central booking system and can select their doctor based on several criteria:

- Gender
- Languages spoken
- Doctors previously consulted with
- Time availability



GPs are managed through a proprietary doctor platform that allows them to log in, register the hours they wish to work and manage their consultations. All consultations currently running through the platform are performed on a private basis by NHS-registered GPs.

The platform has additional functionality which enables patients to request, and GPs process, certain ancillary services, namely:

- Referrals to specialists
- Ordering test kits
- Private prescriptions
- Fit notes
- Dispensing and delivery of prescription items or;
- Collection of prescriptions from a local pharmacy (85% of private prescriptions are dispensed this way)

The telehealth platform is occupation-agnostic and is built to be able to deliver consultations from all medical practitioners such as specialists, prescribing nurses and pharmacists.

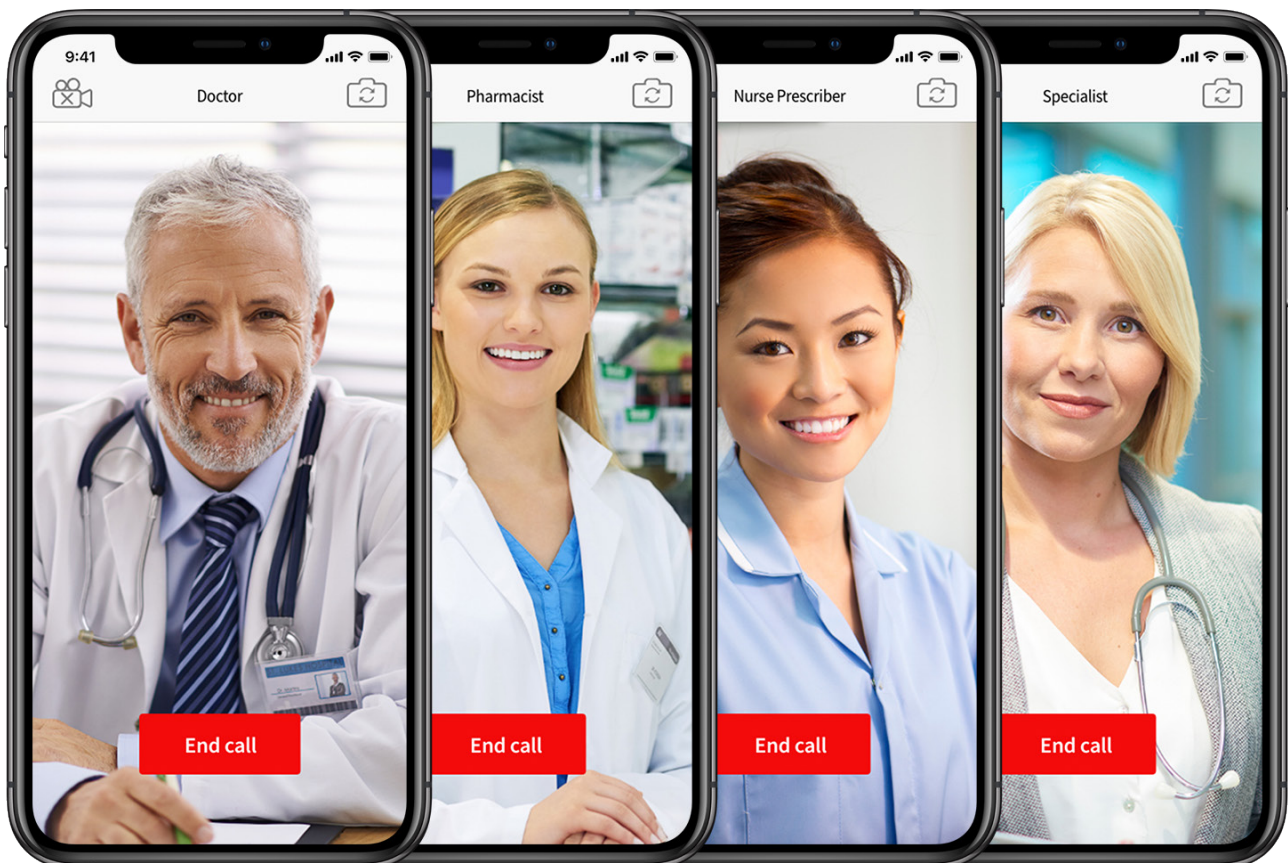
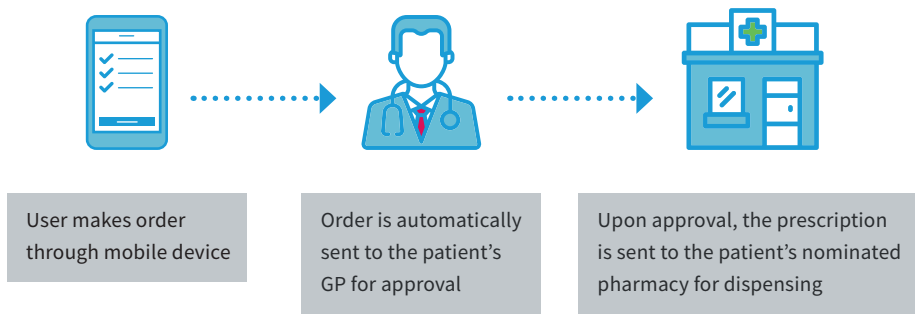


Image: Now Patient app. Video consultations with different medical practitioners



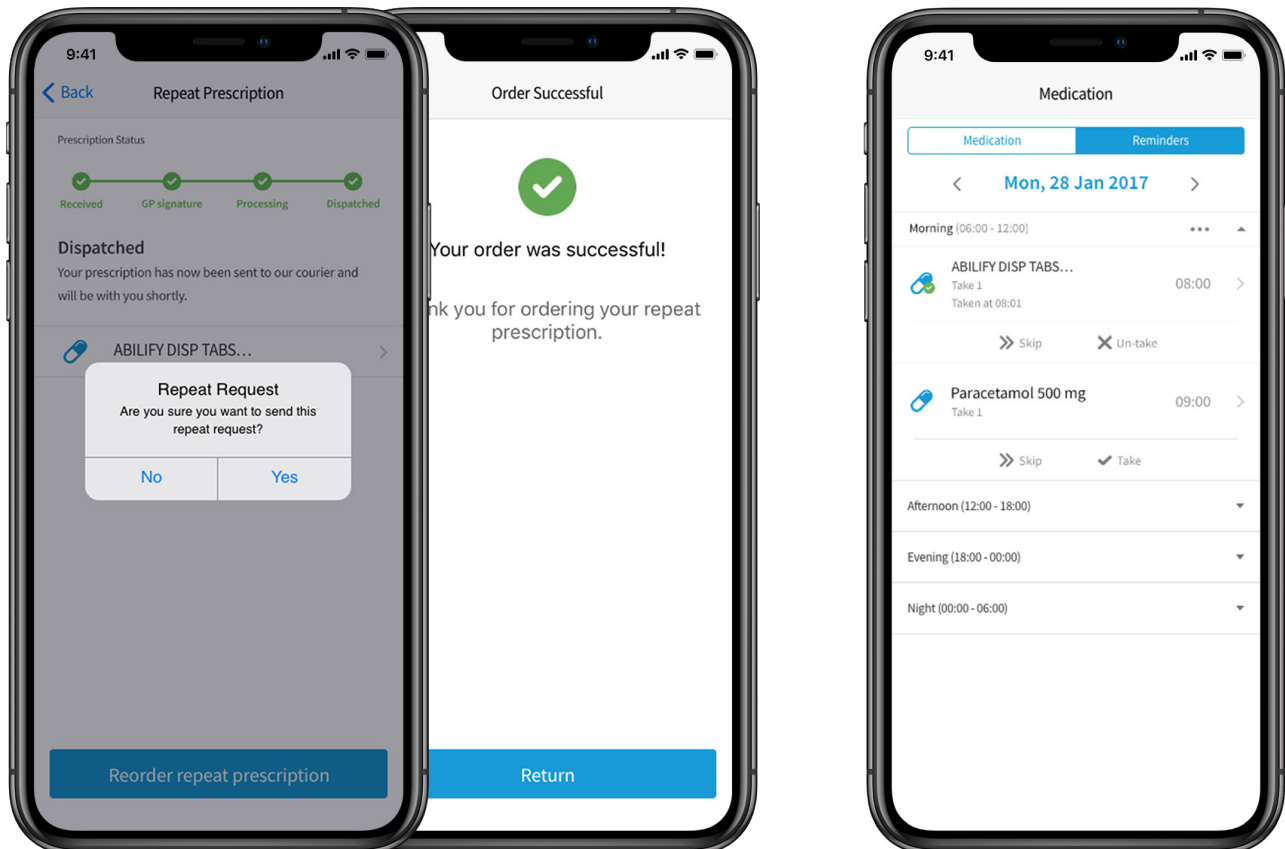
## II. Telepharmacy

In addition to the ability to process private prescriptions generated through GP consultations, the NHG platform also enables users to order any NHS repeat prescriptions they may have. This process is entirely user controlled, ensuring that all prescription orders are driven by patient demand rather than third party interference.



The app also has inbuilt medicine adherence functionality that reminds users to take a dose of their medication at the relevant time. It can also be configured to alert family members if the patient fails to take a scheduled dose.

Both telehealth and telepharmacy functions are integrated into a single app platform, currently available through NHG's consumer apps or via white label partnerships with corporate employers.





# Patient Satisfaction

Regular feedback data consistently shows that users of the NHG platform are very satisfied with the service they receive.

Firstly, Telehealth users are asked “Would you recommend this service to a friend?” immediately following a consultation. 87% of all respondents answered yes to this question.<sup>2</sup>

Secondly, Telepharmacy users receive a survey with a standard Net Promoter Score<sup>3</sup> Question: “How likely is it that you would recommend Now Patient to a friend or colleague?” with the results since February 2018 shown below<sup>4</sup>:

**Exhibit 1 – Now Patient (Telepharmacy) Net Promoter breakdown**

Net Promoter <sup>®</sup> Score : 37.0		Response Percent
1	Promoters (9-10)	60.26%
2	Passives (7-8)	16.51%
3	Detractors (0-6)	23.24%

The net score of +37 over the period would be considered “great” compared to industry benchmarks<sup>5</sup> indicating a very high level of satisfaction amongst the Now Patient user base.

<sup>2</sup> Now GP feedback survey Question 16. N=209.

<sup>3</sup> <https://www.netpromoter.com/know/>

<sup>4</sup> Now Patient net promoter score survey. N=624.

<sup>5</sup> <https://www.retently.com/blog/good-net-promoter-score/>

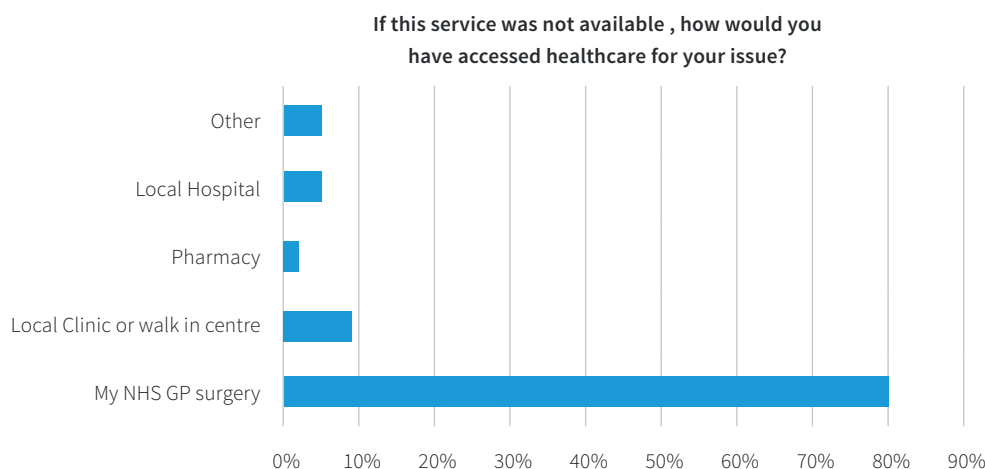
# Telehealth Consultation Results

## 1. Reduction of demand on the NHS

The objective of Now Healthcare's telehealth function is to provide patients with virtual consultations that obviate the need for them to attend NHS health facilities.

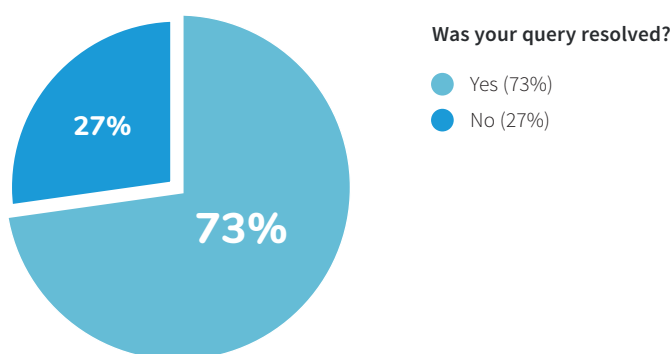
To test the success of this objective, Now Healthcare app users were questioned to understand what their course of action would have been if the NHG service were not available. The results are outlined in Exhibit 2 below. Further to this, respondents were asked whether their medical query was resolved. The collated results are shown in Exhibit 3:

### Exhibit 2: Alternative Healthcare Routes



N=289

### Exhibit 3: Resolution of query



Based on these numbers, combined with the statistic that 63% of people would use digital health solutions<sup>6</sup>, the unit costs for each NHS visit<sup>7</sup> and data showing there are 340m GP appointments each year, we can estimate the total potentially saved by giving uniform telehealth access to patients.

<sup>6</sup> <https://healthwatchenfield.co.uk/news/healthwatch-enfield-publishes-research-report-using-technology-to-ease-the-burden-on-primary-care/>

<sup>7</sup> [https://kar.kent.ac.uk/65559/40/65559\\_rep\\_UCR-2017-v13finalKAR.pdf](https://kar.kent.ac.uk/65559/40/65559_rep_UCR-2017-v13finalKAR.pdf)

## Exhibit 4 – Extrapolation of maximum NHS cost savings through telehealth access

Alternative route if NHG was not available	Number of appointments obviated per month*	NHS unit costs per appointment	Potential monthly spend saved
NHS GP	10,065,216	£38	£382,478,203
Walk in centre	1,158,394	£137	£158,700,021
Pharmacy	243,605	£0	£0
Hospital	610,282	£137	£83,608,664
Other	610,282	£0	£0
	<b>12,687,780</b>		<b>£624,786,888</b>

\*Calculation: Proportion of alternative routes x proportion of queries resolved (73%) x proportion of individuals open to telehealth (63%) x average monthly GP appointments.

When extrapolated annually, this gives a potential saving of around **£7.5 billion**.

## 2. Employer Savings

In addition to NHS appointments saved, the NHG platform delivers benefits to employers through reducing employee absence when having to attend GP appointments (they are able to have video consultation on company premises instead).

Assuming that the typical absence to fulfil an external GP appointment is ½ day, we can also quantify savings to employers through employee access to the NHG platform.

### Exhibit 5 – Inferred employer savings through access to NHG platform

Average Appointments per 100,000 people	1,200
Estimated employer time saved (days)*	600
Estimated value of time saved**	£63,000

\*Based on half a day per external appointment

\*\*Based on average daily wage of £105 (calculated by dividing the national average salary<sup>8</sup> by 260 working days)

This implies a broader societal productivity benefit through employees attending work when they would otherwise be absent of £63K per 100,000 people with access to the platform. If the platform were available across the UK this would be equivalent to an additional monthly productivity value of £20m<sup>9</sup> (**£240m annually**).

Note that this calculation does not include additional beneficial factors such as lower absence due to employees receiving medical advice sooner than if they had to book an NHS appointment (more than 40% of patients have to wait longer than 14 days for an appointment<sup>10</sup>) thus recovering to full productivity more quickly.

<sup>8</sup> <https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/bulletins/nowcastinghouseholdincomeintheuk/financialyearending2017>

<sup>9</sup> Calculated based on an employment figure of 32,207,000: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/uklabourmarket/january2018>

<sup>10</sup> <http://www.pulsetoday.co.uk/your-practice/practice-topics/access/average-gp-waiting-times-remain-at-two-weeks-despite-rescue-measures/20034534.article>

### 3. Pathway Redirection

NHG's clinical staff have analysed 2,563 telehealth consultations to audit whether the patient in question actually needed to speak to a GP or whether their issue could have been handled by a different clinician (such as a pharmacist or prescribing nurse). The results of this audit are shown below.

#### Exhibit 6 – Recommended pathway based on audit of consultations

Pathway	Proportion of Patients
Needed to see a GP	27%
Could have been handled by a prescribing nurse	32%
Could have been handled by a pharmacist	41%

The implications of this research are that, if an effective pre-triage function were set up within a telehealth app, patient pressure on GPs could be reduced by up to 73%.

Based on the latest estimate of 300 million GP appointments<sup>11</sup> and NHG averages of appointment cost per pathway this would mean a potential saving of **£2.2 billion** if such a redirection programme were successfully implemented across England.

#### Exhibit 7 – Potential Savings through pathway redirection

Pathway	Cost per appointment	Split	Current Appointments (m)	New Appointments (m)	Current Cost (£m)	Revised Cost (£m)
GP	£22.50	27%	300	81	£6.75	£1.82
Nurse	£15.00	32%	0	96	£0	£1.44
Pharmacist	£10.00	41%	0	123	£0	£1.23
<b>Total</b>					<b>£6.75</b>	<b>£4.49</b>

<sup>11</sup> <https://digital.nhs.uk/data-and-information/publications/statistical/trends-in-consultation-rates-in-general-practice/trends-in-consultation-rates-in-general-practice-1995-2009>

# Telepharmacy Results – Reducing Waste

A 2010 study<sup>12</sup> estimated that the waste of medicines in England ran at £300m per year. This wastage falls into three different categories:

- Inappropriate prescribing
- Medicine non-adherence
- Over-ordering of medicines

While solutions to inappropriate prescribing lie mostly with primary care clinicians, Now Healthcare Group technology has proven successful in helping to curb the final two factors.

## 1. Medication adherence

Numerous studies<sup>13</sup> have shown that medication adherence is positively correlated with positive health outcomes and that non-adherence increases the risk of mortality<sup>14</sup>.

A World Health Organisation study projected the rate of non-adherence at 50% across the developed world<sup>15</sup> inferring that there is great scope for improvement through digital, and other, solutions.

NHG's apps feature an inbuilt medical adherence system to prompt users when a dose is due. The account can also be linked to family members who will be alerted should the user not confirm they have taken a scheduled dose.

Data from NHG's system (below – across 3,763 adherence incidents) shows a minimum adherence rate of 71.1%, well ahead of WHO norms implying that the successful use of adherence technology can improve the probability of adherence by up to 42%<sup>16</sup>.

### Exhibit 8 – Medicine Adherence

Adherence Incident - Outcome	% of Outcomes
Dose confirmed adherent	71.1%
Dose confirmed skipped	5.4%
No confirmation supplied	23.4%

<sup>12</sup> [http://discovery.ucl.ac.uk/1350234/1/Evaluation\\_of\\_NHS\\_Medicines\\_Waste\\_\\_web\\_publication\\_version.pdf](http://discovery.ucl.ac.uk/1350234/1/Evaluation_of_NHS_Medicines_Waste__web_publication_version.pdf)

<sup>13</sup> Gad Cotter, Eyal Shemesh, Miriam Zehavi, Irit Dinur, Abraham Rudnick, Olga Milo, Zvi Vered, Rikardo Krakover, Edo Kaluski, and Abraham Kornberg. Lack of aspirin effect: aspirin resistance or resistance to taking aspirin? American heart journal, 147(2):293{ 300, 2004.

<sup>14</sup> Piia K. Rannanheimo, Pekka Tiittanen, Juha Hartikainen, Arja Helin-Salmivaara, Risto Huupponen, Jussi Vahtera, and Maarit Jaana Korhonen. Impact of statin adherence on cardiovascular morbidity and all-cause mortality in the primary prevention of cardiovascular disease: A population-based cohort study in Finland. Value in Health, 18(6):896(905, 2015.

<sup>15</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3068890/>

<sup>16</sup> Inferred using NHG adherence data / WHO adherence norm

## 2. Over-Ordering

CCG audits have also shown the level of waste generated by community pharmacists over-ordering prescription items on behalf of their patients. A Luton CCG study indicated that high-street pharmacists over-ordered prescription items by 45%<sup>17</sup>.

NHG technology places the ordering process firmly in the hands of the patient. The patient is able to order only the items they require with no interference from pharmacists. Data from the NHG system shows that this approach has been successful in reducing the number of items ordered. The below table shows the aggregated number of items requested by patients<sup>18</sup> compared to the number of repeat prescription items on their summary care record (i.e. the total number of items that could have been ordered).

### Exhibit 9 – Proportion of medicines ordered Vs the potential maximum

Items orders	37,268
Potential items ordered	116,203
% of potential items ordered	32%

These results indicate that technology that puts the patient in control (such as that within NHG's apps) does not result in significant over-ordering and can contribute to the reduction of waste within the NHS.

<sup>17</sup> Repeat Prescription Services. Final report on the changes to repeat prescribing management in Luton supported by the medicines optimisation team Luton CCG. Luton CCG September 2016

<sup>18</sup> Analysis was conducted over 12,381 separate orders



## The Future

It is clear from this report that digital technology has huge potential to improve efficiencies across public health services whilst simultaneously enhancing outcomes for patients. With smartphone penetration rates approaching 90% of the UK population, the concept of putting control, literally, in the hand of the patient has clearly come of age.

At Now Healthcare Group we have made a great start in the quest to deliver this. Our apps provide primary care and medicine fulfilment at the touch of a button. However, the surface has only been scratched. Artificial Intelligence and non-invasive vital sign monitoring using mobile devices have arrived, allowing conditions to be diagnosed, prescribed and observed without the patient having to leave the house. The technology is so exciting we believe it will be possible to diagnose conditions – and deliver medicines – before the patient even knows they are going to be ill.

Now Healthcare Group are working with several public and private partners to design, develop, and implement the next generation of telehealth solutions. If you believe in the digital future of healthcare as much as we do, we'd love to hear from you.



Lee Dentith  
CEO and Founder,  
Now Healthcare Group

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