"No More Queues -
A Prescription to Cure UK NHS Outpatient Clinic Queueing Blues?"

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Abstract: This paper reports on 4 years of research and almost 1000 interviews and observations of patients attending an outpatient clinic in a large UK NHS hospital. The research patient levels of satisfaction with the actual waiting experience in the clinic prior to their actual consultation appointment. It makes recommendations for improving the waiting experience and for the management of the processes.

Keywords: Customer/patient satisfaction, queueing psychology, service operations.

The application of queueing theory within the healthcare sector has been in existence for over fifty years, (Bailey 1952). It was noted by O'Keefe (1985) as being one of the early examples of the use of operational research (O.R.). Bailey(1952) in his paper developed a mathematical model of the outpatient queueing process for a general practitioner's clinic, commencing with the appointment, moving through the arrival and on to the patients being seen by the doctor, a model which could still be applied to today's outpatient clinic in most hospitals. Little, it would seem has changed. At least that is probably what the patients believe, for there are still queues, both real and virtual. Long
endless waits for an appointment to be confirmed, possibly followed by a cancellation and new dates, and finally waiting for the day to arrive (the virtual queue). And then eventually on the day, unbelievable and unexplained waits before the short but valued consultation. Bailey (1952) found that the majority of patients arrive on time for their appointments, an assumption which remains even today in most literature, and which this author can confirm following almost 1000 observations spanning two separate periods of research over a two year span of eye clinic observations. In this research conducted over two separate months, the first in 2000 and the latter in 2002, just over 10% of the patients arrived late. He (Bailey) also assumed that only patients with appointments enter the system, which is still true for those involved in queueing theory, but ignores the elements of the non patient, i.e. the accompanying friend, as being a non contributory element to the mathematical model. Both of these assumptions are questioned or contradicted in later work (Cox et.al. 1985 and Rising et.al. 1973) There are many similar pieces of work related to the field of healthcare management and Operational Research, which is an area that seems to lend itself to the work of the researcher, but does it help the patient who is still waiting? Does it help the receptionist or nurse who has to deal with irate patients? or more likely the rude, abusive and irate patient's "friend" who has also been waiting for an hour or longer, but who has no or very little value for their wait? Does it help the doctor or consultant who has to see more patients, who are not less patient, less polite and more stressed patients? Well generally this research suggests NO.

For over 50 years researchers have researched, hospitals and clinic managers have managed, governments have come and gone along with their policies. The NHS has developed, grown and changed, medical knowledge has advanced, new techniques have been introduced, accepted and are now almost out of date, fads and fashions been introduced, dropped and rediscovered. But the patients are still patiently waiting, the queues are getting longer not shorter, (both the real queues in the clinics and the virtual ones prior to their consultation or treatment). Nothing it seems is learnt
and nothing changes. Well this is not quite true, today's patients are not the silent waiting majority of fifty years ago. They have learnt, they have also developed. Today's patients know they have a voice and that if they use it they can jump the queue and if not, well at least they will feel better for it, "and anyway wasn't it the staff fault in the first place?!"

O'keefe (1985) appears, as far as the healthcare sector, to be the first researcher to realise and record that after 30 years of research, recommendation, more research and conclusions, that queueing theory alone, and even queueing theory alongside queueing simulation, was not working. In his work he discovered that queueing theory was not reducing the size of the queue, nor the length of time it took to get served. He also discovered that some of the assumptions made in previous work may no longer be actually true. It seemed from his research that "patients were being processed on a first come first served basis, rather than in order of their appointment". Secondly, that the clinics were not operating for long enough, for a steady-state; as such, queueing theory could not be valid. Little it seemed has changed in those 30 years, nor has it over the following 18 years, or so many of today's patients will argue.

O'keefe (1985), went on to suggest the use of a more system based approach to this problem. His basic recommendations were aimed at improving the general problem areas, without considering the use of queueing theory. Additionally, he recommended that if the length of wait could not be improved then the experience itself needs to be enhanced. This he suggested could be achieved via changing the "environment," the "atmosphere" and the comfort of the waiting areas, an idea originally suggested by Maister (1985). Cox et.al. (1985) also added to the confusion, when they applied queueing theory to a specific clinic, "The Ear Nose and Throat Clinic", rather than a general clinic (Accident and Emergency for example) or a general practitioners clinic as had always been the case in the past. In this specific case the assumption that patients arrivals were punctual
was found not to be true, and as many as 25% of the patients were arriving late. All of this and much more, is to be found in a search of literature concerning queueing theory and patient waiting. The problems identified by the early researchers such as Bailey (1952) Jakson et.al. (1964), were still in existence for the researchers of the 1980's such as O'keefe, (1985) Cox et.al. (1985) Taylor et.al. (1980) and still remained unresolved in the 1990's when the like of Worthington (1991) Brahim, et.al. (1991) and (1992) and Vissers et. al. (1999), all were continuing with the use of queuing theory and simulation. If we are to learn anything from the past, it seems that the use of queueing theory and or queueing simulation alone has not and probably can not solve the problems for today's clinic.

**Background**

This paper is based around work carried out earlier by the author during 2000, (Barlow 2002), where the level of patient satisfaction with their wait in an out patient clinic was measured using Maister's (1985) proposition that Customer satisfaction = Customer Perception less Customer Expectation. The research also went on to investigated some of Maister's (1985) 8 propositions related to queueing psychology, within an outpatients clinic (Eye Clinic), in a UK West Midlands NHS Hospital.

The initial research involved observations of all clinics within the eye/ophthalmic department for one month, morning and afternoons, and covered observations and brief interviews with 280 patients. Each patient was asked a simple question which was split into two sections employing two weeks for each question. The first two week period investigated expectations, and the following the patients perceptions, each was kept separate so as to avoid any outside influence. Most of the work confirmed Maister's propositions, related to queueing, all of which had been tested by a variety of researchers in differing contexts, researchers such as Davis and Heneke (1994), Davis
and Vollmann (1990), Katz, et.al. (1991), Jones and Pappiatte (1996) and Larson (1987). However, this research came up with one unexpected contradiction to all the previous research in this area. All previous research into queueing psychology agreed with Maister's original proposition that "People queuing on their own were more likely to be dissatisfied with their wait than those queuing in a group". Putting it another way, if you are going to wait, it is better to do so in the company of others. However, in the initial hospital research this proposition was turned on its head. In the sample of 280 patients, 150 arrived and waited on their own, whilst 130 arrived with a friend(s) or relative. The solo patients waited for 55.72 minutes before being seen by their doctor or consultant, whilst the accompanied patients waited 54.28, a slightly shorter period. The solo patients expected to wait 39.58 minutes against an expected wait of 39.27 for the accompanied patients. Both of these times are similar. However, the perception of the wait was different. The solo patients' perception was of a 46.19 minute wait, (against an actual of 55.72 minutes) whereas the accompanied patients perceived their wait as being 51.96 minutes (against an actual of 54.28). Based on Maisters First law of Service, neither of the groups were happy with the wait, but the solo patients were less dissatisfied than the accompanied patients, with a difference of - 6.61 minutes to -12.69 which represented a difference of over 52% or 6.08 minutes. These results were completely unexpected, there being no evidence of any other research mirroring these result. It was decided that it would be advisable to repeat the exercise, to see if this set of results had in some way been flawed, or were indeed a one off. This paper sets out to report on this work, and then to make conclusions and recommendations, which were left unanswered by the first piece of research.

**Why does queueing matter in today's NHS outpatient clinics?**

Over the past decade waiting lists and waiting times have become a political football. In the UK barely a month seems to go by without one political party or another discussing the problem. New policies come and go but little actually changes. The issue has even gone as far as the high court,
Watts versus the NHS trust, (Timmins, Financial times 2003). In 1991 waiting times in Swedish Hospitals were guaranteed, the length of wait set by each type of medical problem, although this had to be abandoned on December 31st, 1996 (Hanning and Spanberg 2000). In both the US and Canada, waiting times and waiting lists have become major issues in the lead-up to national government elections. The actual waiting lists, however long, for whatever medical situation are virtual, and can't actually be photographed to jump out of the front page of a leading newspaper or television programme, and so can often be pushed to one side. This can be contrasted with the physical and very disturbing pictures of queues at A&E waiting rooms or in the out patient clinic. These are a more real form of queues which are not so easy to ignore or brush under the carpet, but still they prevail. Still a patient may wait 6 months or longer for an appointment with a consultant, and then arrive on the duly appointed day, at the pre arranged time, only to find that they have to wait for more than 55 minutes before actually seeing their consultant, and then only after many have had their original appointment rebooked to a later day.

Television and television advertising is often blamed for portraying a false, biased one dimensional side to an issue, but there can be few more memorable adverts on this issues than one run by Federal Express stating, "Waiting is frustrating, demoralising, agonising, annoying, time consuming and incredibly expensive". (Fortune 1980). Few NHS patients who have had to visit an NHS outpatient clinic have not felt one or more of these emotions, and do not agree with the sentiments, either during their wait or after it is over, irrespective of how well the treatment went, how successful the outcome was, how polite and efficient the receptionist was, how helpful the nurse and so on. Their first impressions of the clinic were clouded by their initial unnecessary and inefficient wait for an appointment, the arrangement and knowledge of which was made and held by the hospital clinic for some considerable time.

Surely after all the research carried out by academics, both internal hospital researchers work and external academic researchers, all the queueing models, all the reports and recommendations it is
not beyond management to develop a waiting timetable that will permit a more efficient patient-based model whilst still ensuring that the medical staffs productivity is maintained?

**Methodology**

This research programme set out to repeat the work carried out in 2000, and so used a similar methodology. This involved observation and recording of a randomly selected group of patients from arrival throughout their treatment and on until they finally departed the clinic. It involved asking two single questions. These, as stated early were:

- a: related to their expectation of the wait, and
- b: related to their perception of the wait. The first two weeks, asked the first question and the second question was asked over the last two weeks.

The questions:

- a: "Is this your first visit to the clinic, and how long are you expecting to have to wait, from arriving here until you actually see your consultant/doctor"? This question was asked immediately after the patient had registered with the clinic.
- b: "Is this your first visit to the clinic, and how long do you think you have been waiting since your actual arrival, until this moment"? This question was asked as the patients were called in to see their consultant/doctor for their first consultation on that visit.

The patients were also asked to identify their age from a card offering the following age scales. All the clinics operating were adult eye clinics only.
**Age groups**

A: under 36  
B: 36 - 45  
C: 36 - 45  
D: 46 - 55  
E: 56 - 65  
F: over 65

In the second study 639 Patients were observed out of a population of 1172 or 54.52%, against 280 from a population of 695 (40.3%), an increase in the overall population of 68.6% and 128.2% in the observations. There were two main reasons for the increase in the observations;

i. the increase in the overall population of patients, and  
ii. the process having been carried out previously and lessons learnt.

The research recorded the following series of observations for both groups, along with the two separate questions asked. These can be split into three major areas, observations and information gained from the question and information gathered from the clinic.

**Information from the questions:**

i: first visit or repeat visit  
ii: time of booking  
iii: expected waiting time  
iv: perceived waiting time  
v: age of patient

**Information gained from observation**

i: Sex of patient  
ii: whether accompanied or not, and number of "friends" accompanying
iii: time of entry to see the nurse
iv: time of entry to see the consultant/doctor
v: total time in the system

Information gathered or calculated
i: early or late for appointment
ii: time waited for the nurse
iii: time waited before first visit to see consultant
iv: total time spent in the clinic
v: number of DNA's (did not arrive)

During this second piece of research only one patient, within the sample groups, did not wait for the appointment, this patient, a male, had stated that he would wait 45 minutes, and after 45 minutes he came up to the researcher and announced he was leaving, he was advised to speak to a nurse or the receptionist, which he did but could not be persuaded to change his mind and left. To the researchers knowledge this was the only incident known of a "walk-out" over the one month period.

**Results and outcomes.**

During the second series of research observations, 640 patients were recorded, but only 639 fully, one leaving before the patient saw the consultant. There was a total of 1,172 patients attending the clinic over this period. Therefore 54.5% were observed, of which 65 arrived late, and in addition 84 failed to turn-up (DNA's). The population breakdown from both sets of research can be seen in table 1a and 1b.
**General population, comparison between the two research periods.**

**Sex, grouping**

<table>
<thead>
<tr>
<th>Table 1a.</th>
<th>Repeat research</th>
<th>Initial outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>%</td>
</tr>
<tr>
<td>Female: Expectation Perception</td>
<td>189</td>
<td>29.6</td>
</tr>
<tr>
<td>Male: Expectation Perception</td>
<td>165</td>
<td>25.8</td>
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<tr>
<td></td>
<td>137</td>
<td>21.4</td>
</tr>
<tr>
<td></td>
<td>148</td>
<td>23.2</td>
</tr>
</tbody>
</table>

The make-up of the most recent research group is very evenly spread, with female population representing 51.4% and the balance between questions one and two evenly spread with expectation group representing 47% of the populations. This compares favourably with the initial research group where the age mix had a female population of 53.6% and the expectation group 45.3%.

**Age Grouping**

<table>
<thead>
<tr>
<th>Table 1b.</th>
<th>2002 Repeat research</th>
<th>2000 Initial outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
</tr>
<tr>
<td>Over 55</td>
<td>531</td>
<td>234</td>
</tr>
<tr>
<td>Under 55</td>
<td>108</td>
<td>51</td>
</tr>
<tr>
<td>Over 65</td>
<td>406</td>
<td>176</td>
</tr>
<tr>
<td>56-65</td>
<td>125</td>
<td>58</td>
</tr>
<tr>
<td>46-55</td>
<td>58</td>
<td>25</td>
</tr>
<tr>
<td>36-45</td>
<td>31</td>
<td>17</td>
</tr>
<tr>
<td>Under 35</td>
<td>19</td>
<td>9</td>
</tr>
</tbody>
</table>
When this is broken into demographic groupings, the second research group has more information, due to the changes made after the initial research. However, the mix between male and female is generally even.

The make up of the two sets of research samples show a close match and as such it is fair to review and compare the first and subsequent sets of results together.

**The Main findings of the research**

Table 2a. outlines the overall findings of the latest research drawn from July 2002 whilst the results of the first research can be seen in table 2b

The basic background to the two surveys indicates how similar the work within the clinic was:

The profile of the patients in the initial survey found that the first visit patients represented 15.7% and repeat visits 84.3% of the overall population, compared to the second survey where the repeat patients represented 82.6%, and the first time patients 17.6%, a slight variation.

The mix between the sexes showed females patients in the first survey represented 53.6% whereas in the second survey it was 55.4% here again there is no significant difference.

The age difference is the major change. In the first survey the patients were not asked these questions, it was an observational judgement of age, resulting in the mix of 68.6% to 31.4 % over 55 to under 55, whereas in the later survey the true mix was 82.9% to 17.1%. The difference may possibly have been caused by error in assessment by the researcher rather than any serious change in the population.
It is interesting to note that over the period between the first and second set of research the number of patients seen at the clinic increased from 695 to 1172 an increase of 68.6%. With only a slight increase in staffing, the major change being the presence of a junior doctor for the entire four weeks in the second visit, whereas in 2000 the house officer was only there for the first week.

Table 2a. the results from the research carried out July 2002.

<table>
<thead>
<tr>
<th>Table 2a.</th>
<th>No.</th>
<th>Expectation Wait</th>
<th>Perception Wait</th>
<th>Actual Wait</th>
<th>Arrival Early &lt;late&gt;</th>
<th>Wait for Nurse</th>
<th>Total time in clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>639</td>
<td>34.4</td>
<td>47.0</td>
<td>56.3</td>
<td>14.5</td>
<td>11.9</td>
<td>83.4</td>
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</table>

<table>
<thead>
<tr>
<th>First Visit</th>
<th>111</th>
<th>34.4</th>
<th>51.0</th>
<th>58.2</th>
<th>18.1</th>
<th>12.8</th>
<th>98.4</th>
</tr>
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<tbody>
<tr>
<td>Repeat</td>
<td>528</td>
<td>34.4</td>
<td>46.3</td>
<td>55.9</td>
<td>13.7</td>
<td>11.7</td>
<td>80.3</td>
</tr>
<tr>
<td>Female</td>
<td>354</td>
<td>35.0</td>
<td>46.2</td>
<td>55.9</td>
<td>14.8</td>
<td>12.2</td>
<td>86.2</td>
</tr>
<tr>
<td>Male</td>
<td>285</td>
<td>33.5</td>
<td>47.9</td>
<td>56.8</td>
<td>14.1</td>
<td>11.5</td>
<td>79.9</td>
</tr>
<tr>
<td>Solo</td>
<td>340</td>
<td>34.5</td>
<td>43.2</td>
<td>54.9</td>
<td>14.5</td>
<td>12.1</td>
<td>79.5</td>
</tr>
<tr>
<td>Accompanied</td>
<td>299</td>
<td>34.4</td>
<td>51.0</td>
<td>58.2</td>
<td>14.5</td>
<td>11.7</td>
<td>87.6</td>
</tr>
<tr>
<td>&lt;55</td>
<td>531</td>
<td>37.9</td>
<td>42.9</td>
<td>57.8</td>
<td>7.2</td>
<td>12.2</td>
<td>86.0</td>
</tr>
<tr>
<td>&gt;55</td>
<td>108</td>
<td>33.6</td>
<td>47.6</td>
<td>56.0</td>
<td>12.1</td>
<td>11.3</td>
<td>82.9</td>
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</table>

Breakdown

<table>
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<tr>
<th>&lt;35</th>
<th>19</th>
<th>32.7</th>
<th>67.5</th>
<th>53.5</th>
<th>7.2</th>
<th>16.7</th>
<th>82.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>36-45</td>
<td>31</td>
<td>45.7</td>
<td>43.5</td>
<td>57.5</td>
<td>12.2</td>
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<td>&gt;65</td>
<td>406</td>
<td>33.4</td>
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<td>56.2</td>
<td>16.5</td>
<td>11.9</td>
<td>82.8</td>
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</table>
Table 2b. the results from the research carried out July 2000.

<table>
<thead>
<tr>
<th>Table 2b</th>
<th>Size</th>
<th>Expectation Wait</th>
<th>Perception Wait</th>
<th>Actual Wait</th>
<th>Early &lt;late&gt;</th>
<th>Wait for Nurse</th>
<th>Total time in clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>280</td>
<td>41.63</td>
<td>48.81</td>
<td>54.32</td>
<td>&lt;13.37</td>
<td>16.16</td>
<td>86.51</td>
</tr>
<tr>
<td>First Visit</td>
<td>44</td>
<td>37.91</td>
<td>41.12</td>
<td>51.50</td>
<td>&lt;14.33</td>
<td>19.74</td>
<td>280.21</td>
</tr>
<tr>
<td>Repeat</td>
<td>236</td>
<td>42.32</td>
<td>50.24</td>
<td>54.85</td>
<td>&lt;13.19</td>
<td>15.49</td>
<td>87.68</td>
</tr>
<tr>
<td>Female</td>
<td>150</td>
<td>42.09</td>
<td>49.01</td>
<td>56.52</td>
<td>&lt;12.58</td>
<td>13.65</td>
<td>84.07</td>
</tr>
<tr>
<td>Male</td>
<td>130</td>
<td>36.85</td>
<td>50.86</td>
<td>56.09</td>
<td>&lt;14.00</td>
<td>17.16</td>
<td>83.90</td>
</tr>
<tr>
<td>Solo</td>
<td>150</td>
<td>39.58</td>
<td>46.19</td>
<td>55.72</td>
<td>&lt;13.99</td>
<td>16.05</td>
<td>87.14</td>
</tr>
<tr>
<td>Accompanied</td>
<td>130</td>
<td>39.27</td>
<td>51.96</td>
<td>54.28</td>
<td>&lt;12.69</td>
<td>146.42</td>
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<td>&lt;55</td>
<td>192</td>
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<tr>
<td>&gt;55</td>
<td>88</td>
<td>36.14</td>
<td>46.17</td>
<td>53.37</td>
<td>&lt;11.41</td>
<td>17.78</td>
<td>80.14</td>
</tr>
</tbody>
</table>

The second interesting difference relates to the overall wait in 2000 where this was 86.51 minutes. In the second survey it had reduced to 83.4 minutes, but the expectation had reduced to 34.4 minutes against the previous surveys 41.63 minutes. The reduction in expected wait is perhaps a surprise when you realise that 82.6% were repeat patients, so despite the fact that their expectations are partially influenced by past experience, there must be more powerful elements such as external information, and possibly hope encouraging the patients to arrive with such expectations.

The reason for the repeat of the research, however, revolved around the issues of accompanied and unaccompanied patients, therefore this became the major area of the investigation. In the second survey 46.8% of the sample population were accompanied patients, and 53.2% were solo patients. Whilst in the first survey 46.4% were accompanied again, 53.6% were solo patients. This similarity was not planned and selected to be similar to the previous research programme, but one that simply came about through the random nature of the selection and the actual population mix.
The reason for this revisit and repeat of the research was that in the initial survey the outcome from the solo and accompanied patients section produced a unique outcome as far as patient waiting research. In all previously published research into queueing psychology including, Davis and Heinke (1994), Jones and Pappiatt (1996) Katz et.al. (1991), and Larson (1987), Maister’s (1985) proposition, that group waits results in a more satisfied/ happy population, than if one waiting on ones own was confirmed. However, the first research completely contradicted this proposition, the work concluded that the solo patients were happier with their wait than those who came accompanied (by friends and or relatives). The 2000 results can be seen below in table 3a

The major point to highlight from this is that solo patients perceived their wait as being just over 46 minutes as against an expectation of 39.58 minutes and an actual of 55.72. The accompanied patients perception of a wait was of just under 52 minutes (51.96) with an expectation which is slightly shorter than the solo patients one of 39.27 minutes and an actual wait of 54.28 again slightly shorter than the solo patients wait. Thus showing that the solo patients had a much smaller

<table>
<thead>
<tr>
<th>Population</th>
<th>Perceived Wait</th>
<th>Expected Wait</th>
<th>Actual Wait</th>
<th>Total Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solo Patients</td>
<td>150</td>
<td>46.19</td>
<td>39.58</td>
<td>55.72</td>
</tr>
<tr>
<td>Perceived</td>
<td>73</td>
<td></td>
<td>48.79</td>
<td></td>
</tr>
<tr>
<td>Expected</td>
<td>77</td>
<td>61.76</td>
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</tr>
<tr>
<td>Accompanied Patients</td>
<td>130</td>
<td>51.96</td>
<td>39.27</td>
<td>54.72</td>
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<tr>
<td>Perceived</td>
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<td>52.89</td>
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<td>Expected</td>
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<td>56.45</td>
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</tbody>
</table>
difference between perception and expectation, under 55’s -6.61 minutes and over 55’s -12.69 minutes.

The follow-up research produced a second series of observation the results of which can be seen in table 3b

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th>Perceived Wait</th>
<th>Expected Wait</th>
<th>Actual Wait</th>
<th>Total Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solo Patients</td>
<td>340</td>
<td>43.2</td>
<td>34.5</td>
<td>54.9</td>
<td>79.5</td>
</tr>
<tr>
<td>Perceived</td>
<td>162</td>
<td></td>
<td></td>
<td>54.36</td>
<td></td>
</tr>
<tr>
<td>Expected</td>
<td>178</td>
<td></td>
<td></td>
<td>55.56</td>
<td></td>
</tr>
<tr>
<td>Accompanied Patients</td>
<td>285</td>
<td>51.0</td>
<td>34.4</td>
<td>58.2</td>
<td>87.6</td>
</tr>
<tr>
<td>Perceived</td>
<td>158</td>
<td></td>
<td></td>
<td>57.63</td>
<td></td>
</tr>
<tr>
<td>Expected</td>
<td>137</td>
<td></td>
<td></td>
<td>59.43</td>
<td></td>
</tr>
</tbody>
</table>

In the second survey the expectations were very similar, 34.5 to 34.4. The actual wait was greater in the case of the later work by 3.3 minutes, (54.9 minutes for the solo patients against 58.2 for the accompanied patients). Similarly, their total wait was greater in the accompanied patients by 8.1 minute, an increase of 10.2% over the solo patients total wait.

However, the main element of this work investigated their satisfaction with the wait, measured by patient perception – patient expectation. Here, just as in the early research the solo patients perceived their wait as shorter than that of the accompanied patients. Solo patients having a difference of -8.7 minutes, and the accompanied patients of -16.6 minutes between perception and expectation, which represents a difference of 7.9 minutes or 90.8%.
Although again this research shows that neither group were satisfied, the solo/unaccompanied patient were by far the more satisfied of the two, so the research has reconfirmed the outcome from the first work.

**Other results from the latest research:**

*The effect of the age observations*

Initially, the major factor to observe is, of the 639 people observed, of which 406 or 63.4% were over 65 years old. The balance represented a mix of; 56-66 125 people (19.6%); 46-55 59 people (9.2%); In the 36-45 age group there were 31, (4.9%) patients and only 19, (2.9%) in the under 35. When this is separated into smaller sub groups, e.g. male/female, solo/accompanied and first visit against repeat visit, the groups become even smaller. When these are separated in the smaller segments for example under 35 female, first visit accompanied patients the sample becomes very small. Therefore results from these segments can only be considered against the issues associated with small sample groups.

Following on from the initial research the most dissatisfied patients were the young, female segment.

However, an interesting aspect of this is that despite the large proportion of the over 65 age group in the population, this has not affected the outcomes as far as the level of satisfaction; the over 65's having the second lowest expectation and being the second least satisfied. This does not reflect the argument regarding the value of time, and "time rich" and "time poor". That is to say, time rich people (people who have time on their hands, or where time is of less importance), are more likely to be prepared to wait, when compared with "time poor" (people who believe they are short of time, or where they believe in the concept of "time is money").
Discussion

The second set of results confirmed the unexpected results of the first, which contradicted one of Maister’s 8 propositions and all published supporting literature around queueing psychology. The questions that arise from this are perhaps why this difference is occurring in the case of hospital clinic waiting? what may be the causes of this difference? and is there something that can be learnt from these results that might help improve the service and waiting experience?

*The possible cause of the difference:*

**a:** the first major difference is that the waiting time is significantly longer than in previous similar research. In both cases the waiting time is actually over 50 minutes from arrival until the commencement of their consultation, the overall time being well in excess of an hour, (86.5 minutes in the first set of observations, 83.4 minutes in the second set). Most other published research in this area found, on average, the wait was seldom over 10 minutes.

**b:** only one member, the patient of the waiting party has any value in the wait, therefore the longer the wait continues, the less value the non participant, non patient ("the friend") has, thus the more inpatient and anxious they are likely to be. This again was not reflected in other research in this area.

**c:** the environment is one which is not normally perceived as being a relaxing and pleasant experience, thus the anxiety is likely to increase as the waiting time extends.

*What can be learnt from this?*

Here the issues may relate around why the "friend" has accompanied the patients, there are two major reasons for this:

**A:** the patients maybe elderly or young and may need accompanying to the clinic.
**B**: the person is neither elderly or young and has no reason to need accompanying but has either requested the “friends” presence or the “friend” has offered to attend as a favour. In both of these cases the longer the visit goes on, the more frustrating and less value the "friend " will find the wait, who is inevitably going to become bored irritated, frustrated and possibly annoyed.

*What are the possible alternatives?*

**In the case of group A:** accompanying friends may be needed to help the patient through the consultation, to help in explanation, or hearing, so effectively they are part of the process. However, if the patient has no reason or need for this help/assistance once they are in the clinic it may be advisable to suggest that the “friend” leaves and the clinic will contact them by phone once they are able to advise when the patient will have completed the visit, thus giving them time to return. (Here the use of the mobile phone becomes a major benefit). Alternatively, advising the "friend" to return at a specified time.

In either case the hospital needs to be far more honest or possibly needs to obfuscate, that is overstate the length the visit is expected to take in all pre-consultation correspondence. Here the situation is that if you advise the patient the visit is going to take for example between 90 and 120 minutes, and it actually takes 85 minutes, then it is likely that all parties will leave happier.

**In the case of the second group, group B:** where there is little or no justification for the patients “friend” waiting, there are a number of reasons for encouraging them to leave and return later, as and when advised by the clinic, or by the patient.

These benefits include;

- The obvious reduction in stress caused by the unnecessary wait for the non-value party, to the wait.
There will be less people in the waiting room, helping to create a more relaxed atmosphere, an over crowded waiting room immediately has the effect of putting new arrivals under the fear of an extended wait, and thus increasing their anxiety.

Prior to arrival the best policy would be to be honest with them, or may be still to obfuscate, as stated earlier, preparing them effectively for the wait. Perhaps advising them of the possible length of the wait they may expect during the processes. And if there is going to be more than one clinic, that different clinics and practitioners take different time for the consultation.

Suggest that they bring materials to occupy the inactive waiting time, reading material etc., and that it is better to wait on their own.

Make the waiting environment as comfortable as possible, provide appropriate neat reading matter, where possible provide basic information related to the clinic operating that day. For example if it is a cataract clinic have information related to the likely problems and treatment, including possibly having a short video about these issues. This will help information and educate the patient, and make them more aware of their situation prior to the consultation, and may result in the consultant being able to reduce the time spent explaining the issues.

Keep the clinic up to date, the clinic notice boards should always be neat and tidy with fresh information. Have daily information about the team on duty, about the clinics running and if possible the expected wait prior to seeing a consultant for each clinic.

Move general information around the clinic, remember that most patients are repeat patients and any change is going to look different and have a positive effect.

**Finally Management Practice.**

A series of observations made throughout the period of this research included area in the clinic where some of the management processes were perhaps less than realistic. The writer has now been involved in similar research in eye clinics at 5 separate hospitals covering 3 major NHS trusts, all of
which had some common practices. The ones that seem to have the least value, or where change needs to be considered are:

1. Unrealistic start times; all the eye clinics observed had a start time of 8.30, that is the patients appointments started at 8.30, this raises a number of issues
   a. Most of the patients arrive early, it therefore follows that an 8.30 start time can have patients arriving between 8.00 or 8.15
   b. What time do the doctors arrive?
   c. What time are the patient’s lists prepared by the consultant?
   d. What time can the consultant and the junior doctors actually start work?

In the case of the NHS trust clinic this paper refers to, 3 consultants ophthalmic consultants were involved, all three had different arrival times, one arriving at 7.30 – 7.45 and being ready to start at 8.30, (this consultant was an exception). The other two consultants arriving between 8.20 and 8.40 dependent upon traffic and rounds of the hospital. Neither of these doctors were therefore ready to start at 8.30, as their first task was to looked at all that mornings files and delegated the work to the junior doctor before their work could commence, there was little chance of the staff seeing patients at 8.30. (This was a practise seen in all the other clinics observed prior to and since this research!).

2. The tendency for the management to treat the consultant as an expensive resource of perishable capacity which must be used to the maximum.

3. The tendency to treat the patient as an item of inventory, who may be stored up and pushed through to maximise this vital, perishable capacity.

4. What is the value in arranging appointments 6 months and one year in advance, when the medical team, doctors and nurses only arrange their work programmes, holiday and personal professional development 6 –12 weeks in advance?
5. Why have more appointments arranged at times when clearly they cannot commence? Their contacts may stipulate an 8.30 a.m. start, but with a little common sense it is obvious that they can’t start until the work is allocated, and if this must be done by the consultant, and his contract starts at 8.30, the two are not compatible. Neither is it possible for the consultant to start seeing a patient at 8.30 if they must first go through the days work, and meet with their secretary, as occurred in all of the observed clinics, on at least three occasions a week. Management needs to look at the procedures they are developing in the light of reality. They need to realise that all the processes take time, and that all the patients waiting are in fact human beings similar to themselves, and start to treat them the way they would like to be treated themselves. The writer at this point would like to suggest that (they) treat them the way they would like their mother to be treated, but unfortunately one of the patients observed was the mother-in-law of a senior manager in that hospital, whose wife was the accompanying “friend”. This “friend” unfortunately got extremely impatient and “lost it” with the reception and nursing staff, very much to her mothers' embarrassment!

6. The current process of appointment allocation fails to recognise and plan the allocations based upon the balance between new and old patients. Taking into account the time it is likely to take for a new patient, especially in areas like Glaucoma.

7. The current patient correspondence failed to advised patients of the total length of their possible wait, and that they may wish to come prepared for such a wait.

**One final interesting observation.**

Between the first and second visit, the clinic had changed some of its patient correspondence to include a request that patients arrived on time, it also suggested that they did not arrive more than 15 minutes early. This statement seems to have been taken as a suggestion that arriving 15 minutes
early might be beneficial, because the average arrival time in July 2000 was 11.37 minutes, by July 2002 this had risen to 14.5.

Summary of the recommendations.

- **Ensure customers believe in the appointment system**
  - Relate appointment allocation to staffing requirements times. If the staff have to plan their holidays, conferences, Professional Development programmes etc. 12 weeks in advance, then confirm appointments only 12 weeks in advance, don't make appointments one year in advance.
  - Any patient arriving well in advance, say 15 minutes early, should be sent away, politely but firmly to emphasise that appointment times have a meaning. For example advise them to go to the coffee shop etc.
  - Too often the patients believe the appointment is part of a "block booking, appointment time" and therefore if they are the first inline they will be seen first.
  - Maybe make the appointment at uneven times, 9.05, 9.25 etc.

- **Advise patients of the true/waiting time** (or obfuscates wait times) for example, if it is the clinics practice to give a new glaucoma patient a result at the end of their first visit, then tell them the visit could last 4 hours, and involve a number of tests with waits in between.

- **Advise/encourage patients to come on their own** or to send their "friend" away, and advise them when to return.

- **Ensure that the waiting areas are clean and tidy and reflect an efficient service**; any reading material is neat and tidy, the age is not as important as its appearance, and old
gardening/cooking magazine is probably as interesting as a one month old one, or the latest one, as long as it looks tidy.

- **Make the waiting area look in some way different**, remember that most patients come again as repeat patients. If it looks different it won't be as boring.

- **Keep information boards, posters, articles neat tidy, new-looking and up to-date.**

- **Ensure any patient queue is kept to a minimum**, the initial experience is vital, as it is difficult to catch-up after a bad first experience.

- **Use appropriate information**, if today's clinic is a glaucoma clinic then the information available should be about glaucoma, not cataracts, information such as appropriate literature/leaflets, or video etc..

- **Wherever possible send the accompanying "friend" away**, particularly if the overall wait is going to be a long one, certainly over 45 minutes.

- **Treat everyone the way you would like to be treated**, remember in the UK NHS system they may not have a choice, but they certainly do have a voice. Particularly the "Accompanying Friend"

Patients have been waiting in the UK NHS system so long that any improvement to this experience will be seen as a benefit, and to actually create a major change may be seen as delighting the patient.

Clinics have two possible options, the first is to change the whole process to ensure that the systems and processes can adequately cope with the demands put on them, this may be a large, and too expensive an option to be reached quickly.

The second option is to look at ways of changing the patients, perception of the service that they are receiving.

This paper has looked at, and made suggests related to the second option.
References:


Fortune (1990) July 28th p.10


