Does Growth in GP referral link directly to growth in inpatient demand?

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Introduction

For many years the national planning assumptions make a direct link between growth in GP referral and additions to the inpatient waiting list.

While this may seem a reasonable assumption there are certain instances where this is not widely applicable.

To understand why this is so we need to understand the forces regulating the growth in GP referral and then look at the impact of GP referral thresholds upon the conversion rate of first outpatient attendances to additions to the waiting list.

Growth in the Medical versus Surgical Specialties

Table 1 gives the average growth in GP referral over the six years 1995/96 to 2000/01.

This table clearly shows the clear difference between the surgical specialties (which tend to follow demographic change) and the medical specialties (which tend to grow at twice the level implied by demographic change).

There are a few exceptions which can be easily explained:

- Data reporting issues rather than real trends
  - Urology shows higher growth due to its increasing prevalence as a specialty separate from General Surgery.
  - Gastroenterology and Cardiology shows higher growth due to their increasing prevalence as specialties separate from General Medicine.
- Mixed specialties
  - Ophthalmology shows growth intermediate to the Surgical and Medical specialties. This is due to the fact that only 20% of the Ophthalmology outpatient flow is due to surgical management (i.e. cataract) while the remaining 80% is due to the medical management of conditions.

Hence in conclusion the surgical specialties tend to show growth in GP referral which is driven by demographic changes. As such growth is typically less than 2% per annum.

Table 1: Average growth in GP referral

Code	Specialty	Average annual growth
823	Haematology	14.3%
301	Gastroenterology	12.5%
320	Cardiology	10.9%
303	Clinical haematology	10.2%
302	Endocrinology	10.0%
361	Nephrology	9.8%
310	Audiological medicine	8.4%
360	Genito-urinary medicine	8.1%
190	Anaesthetics & Pain Relief	6.2%
300,301,320,330.302,361	**Medical Specialties**	**5.5%**
800	Oncology	5.0%
420	Paediatrics	4.2%
101	Urology	4.1%
130	Ophthalmology	3.8%
400	Neurology	3.5%
300	General medicine	3.0%
	Average All Specialties	**2.5%**
502	Gynaecology	2.3%
430	Geriatric medicine	2.3%
330	Dermatology	2.3%
140	Oral surgery	2.2%
100,101,120,140,150,160,502	**All Surgical Specialties**	**2.1%**
100	General surgery	1.9%
150	Neurosurgery	1.8%
110	Trauma & Orthopaedics	1.7%
340	Thoracic medicine	1.5%
160	Plastic surgery	1.0%
120	ENT	0.9%
410	Rheumatology	0.8%
510	Obstetrics A/N	-0.3%
143	Orthodontics	-2.1%

Specialties with a mainly medical emphasis tend to grow at around twice the rate implied by demographic changes.

Obstetrics has a clear demographic linkage for obvious reasons.

The Conversion Rate from First Outpatient Appointment to Inpatient

In the national planning assumptions this conversion rate is assumed to be relatively constant. A better understanding of this process is required in order to understand why this assumption is not a true reflection of actual practice.

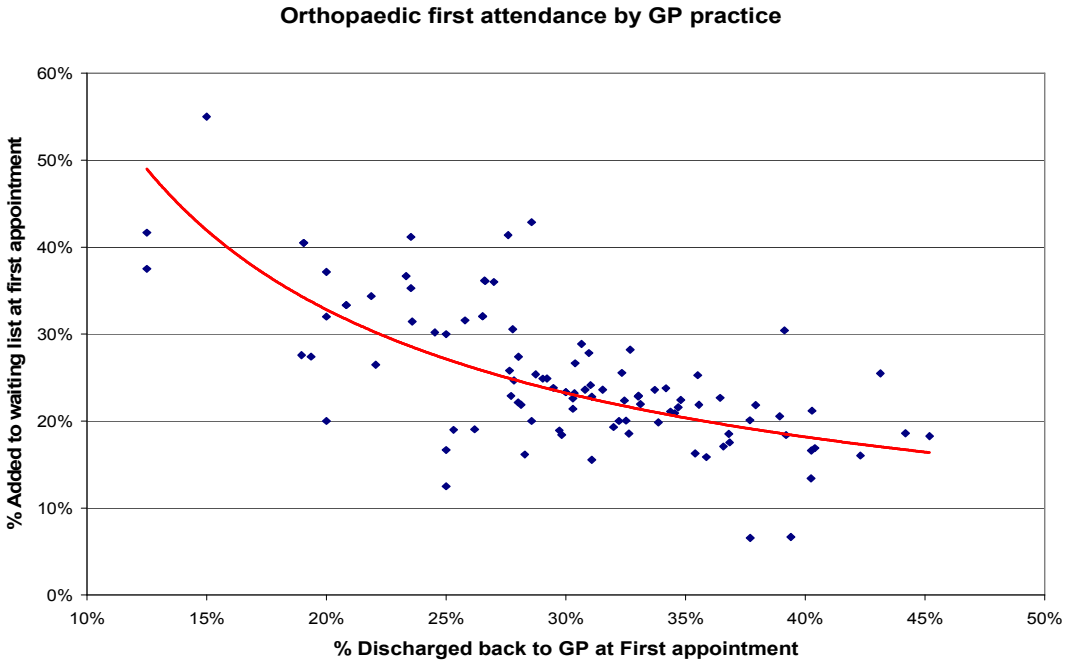
GP referral thresholds

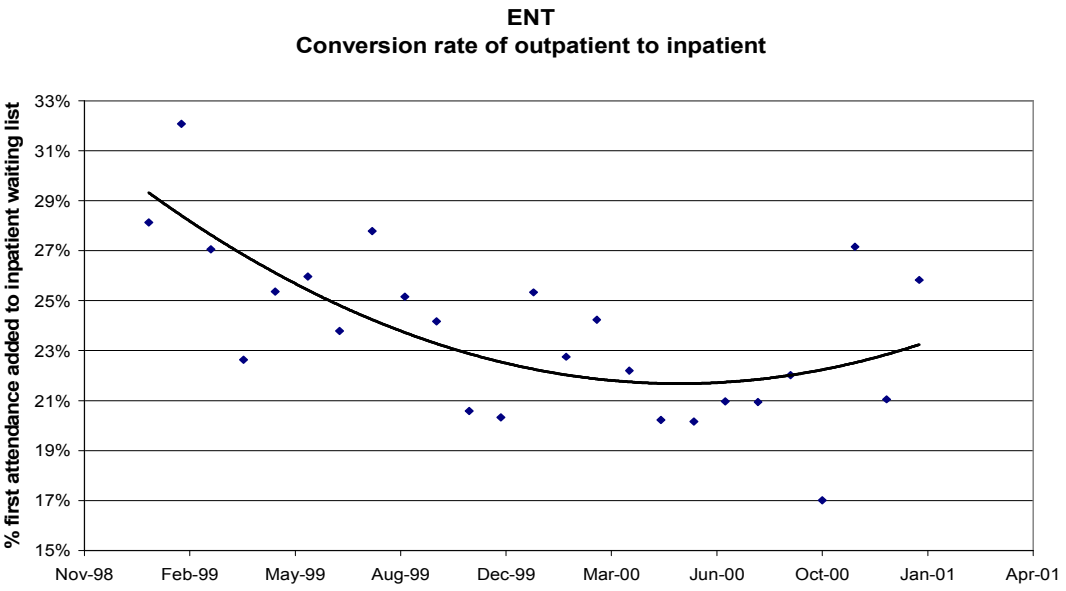
The decision to refer by a GP is commonly seen as having a threshold. This threshold is influenced by:

1. PCT funding
2. Social trends
3. GP experience
4. Patient persuasiveness
5. Access to alternative options such as GPwSI or physiotherapy, etc

To demonstrate that there are large differentials in the threshold for referral we can look at the outcome of GP referrals at a practice level.

This is illustrated in the following chart where it can be seen that the effective referral threshold exhibited by different practices reflects in the % of patients who are added to the inpatient waiting list and on the % of patients who are discharged back into the care of their GP. In this instance practices at the left hand side of the chart have a very high referral threshold and presumably have access to supporting services from GPwSI or in-house physiotherapy. Practices at the right hand end have a very low referral threshold and consequently have corresponding low conversion rates from outpatient to inpatient.





The first point to note is that there are considerable differences in the referral threshold between practices and the resulting relationship is non-linear. It is this non-linear behaviour that can lead to shifts over time in the overall conversion rate – which is the average of the thresholds of all practices referring into a particular hospital.

The next chart demonstrates that such shifts do occur over time and these shifts can lead to considerable change in the overall conversion rate.

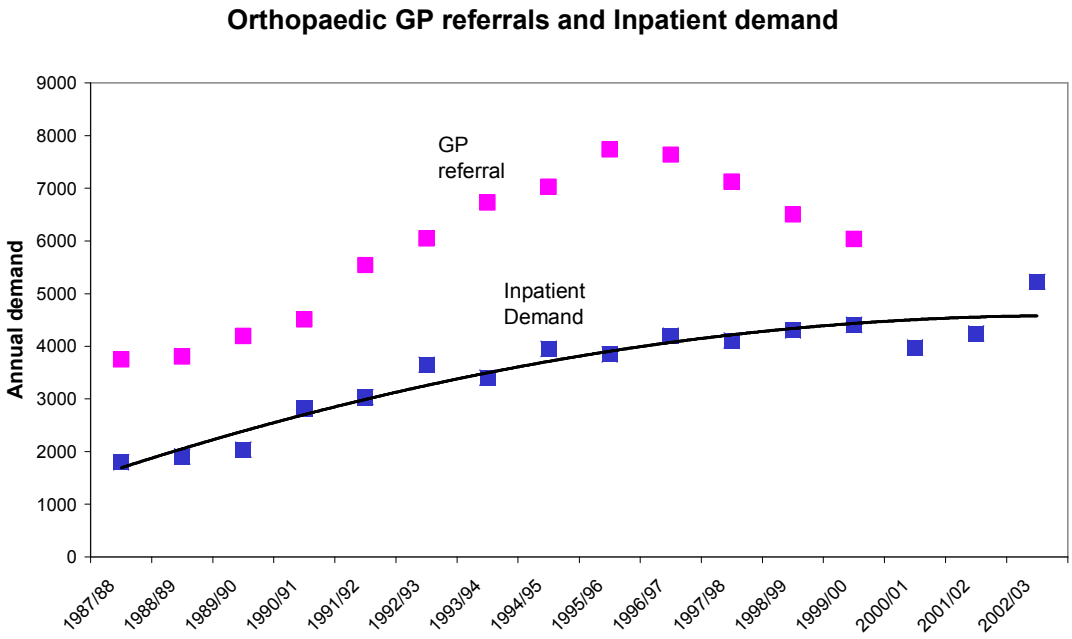
Note also the considerable scatter from month to month which also leads to uncertainty in the annual value.

Evidence that Inpatient demand is not directly linked to outpatient demand

The above charts strongly suggest that inpatient demand may not be directly linked to outpatient demand.

In practice the observed behaviour of inpatient demand is that it tends to follow a discrete trend irrespective of the vagaries of GP referral.

This can be demonstrated by plotting inpatient demand over longer time frames during which GP referral volumes have significantly fluctuated.



As can be clearly seen in the above example for Orthopaedics the inpatient demand trend is independent of the trend in GP referrals. The reasons behind this have been explained above.

In conclusion, the assumed linkage between growth in GP referral and growth in inpatient demand assumed within the national planning assumptions can be questioned. This assumption leads to a perceived need for higher levels of inpatient resource than is the real case.