

Clinical audit as a tool to optimize contracted private healthcare provision: Testing the waters in resource-deprived Greece

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Abstract

Background and Aims: Clinical audit is applied to optimize clinical practice and quality of healthcare services while controlling for money spent, critically in resource-deprived settings. This case study reports on the outcomes of a retrospective clinical audit on private hospitalizations, for which reimbursement had been pending by the Health Care Organization for Public Servants (OPAD) in Greece. This case study is the first effort by a social insurance organization in Greece to employ external clinical audit before settling contracted private healthcare charges.

Methods: One thousand two hundred hospitalization records were reviewed retrospectively and a fully anonymized clinical audit summary report created for each one of them by a team of clinical audit experts, proposing evidence-based cuts in pending charges where medical services were deemed clinically unnecessary. These audit reports were then collated and analysed to test trends in overcharges among hospitalized insureds per reason for hospitalization.

Results: The clinical audit report concluded that 17.4% of a total reimbursement claim of €12,387,702.18 should not be reimbursed, as it corresponded to unnecessary or not fully justifiable according to evidence-based, best practice, medical service provision. The majority of proposed cuts were related to charges for medical devices, which are borne directly by social insurance with no patient or private insurance co-payment.

Conclusion: Clinical audit of hospital practice may be a key tool to optimize care provision, address supplier-induced demand and effectively manage costs for national health insurance, especially in circumstances of budgetary constraints, such as in austerity-stricken settings or developing national healthcare systems.

Keywords

Clinical audit, health insurance, clinical monitoring, reimbursement, quality of care

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Introduction

Clinical monitoring, also known as clinical audit, is used to ensure good clinical practice as well as improve the quality of health services while managing for health expenditure.^{1,2} The concept of clinical audit is an evolution of that of medical examination, which was introduced in the National Health System of the UK in 1988, as ‘the systematic, critical analysis of the quality of medical care, including diagnostic and therapeutic procedures, resource use and effect of care in terms of outcome and quality of life of patients’.^{3–6} The concept of medical audit later evolved to that of clinical audit, which includes medical, nursing and financial audit.⁵

Previous studies confirmed the contribution of clinical audit to improving the quality of care^{7,8} and the cost effectiveness

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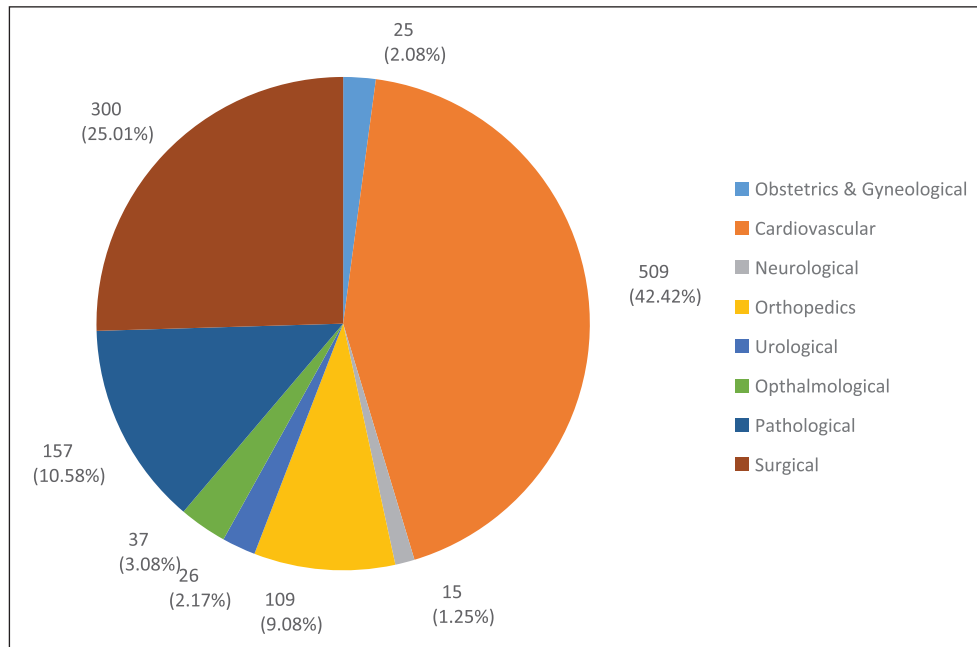


Figure 1. Distribution of most frequent incidents, 1200 hospitalizations.

Note: Figure excludes hospitalizations in respiratory, otolaryngology, radiology clinics and so on, where number of hospitalizations was less than 10. Pathological hospitalizations also include oncological and haematological hospitalizations. Surgical hospitalizations also include thoracic surgery and neurosurgery.

of medical services⁹ as well as ensuring savings for the healthcare system.^{10–12}

In Greece, clinical audit has been traditionally only provided by private clinical audit companies contracted by private insurance to monitor admission, hospital stay and discharge of their insureds in private hospitals and control for respective charges to considerable savings.¹³ Literature regarding clinical audits in Greece is scarce. A study conducted by Ntaios et al. in only one general public hospital in the country (AHEPA, Thessaloniki) highlighted that over 10 months 9782 inappropriate tumour marker diagnosis requests were submitted for reimbursement at a total cost of 239,748€ to social insurance.¹⁴

Up until 2011, despite health coverage being heavily social insurance based – compulsory social health insurance covers over 95% of the population¹⁵ – and social insurance contracting and reimbursing services of private healthcare providers, including hospitals, clinical audit had been only partially utilized to assess the appropriateness of service provision in private practice, the only audit mechanism in the case of Health Care Organization for Public Servants (OPAD) being the annual appointment of mostly non-specialized physicians as part-time auditors.¹⁵ This annual cycle of recruitment, followed by audit training, led to considerable delays in actual audit of hospitalization records, with a large number of cases pending clearance and arrears threatening the financial planning and sustainability of the organization.

In addition, there was extremely limited visibility and evaluation of private practice from the actual payer, and room for potential price discrimination and supplier-induced

demand. This allowed the expenditure for private hospitalizations in OPAD, the sole insurer of all public servants in Greece, responsible for purchasing services for over 1.5 million insureds, to double between 2004 and 2009,^{15,16} when the country entered the austerity period. As a result, private hospital expenditure became a key driver of cost-cutting mandates from the country's creditors.

At this stage OPAD decided to 'test the audit waters' in the public domain, where public money was at stake: implement a retrospective clinical audit through tendering the services of an independent private clinical audit entity. This entity was to audit hospitalizations in five contracted private hospitals, for which reimbursement was pending, in order to assess clinical appropriateness of service provision before clearing charges to be reimbursed.

Materials and methods

One thousand two hundred hospitalization records from five private hospitals in Greece referring to hospital services provided over a decade (2001–2011) whose reimbursement had been pending were reviewed in retrospect. Auditors reviewed the medical and nursing aspects of each hospitalization on the basis of records submitted for reimbursement. A recording tool for audit results for each hospitalization was agreed upon, which included the following:

1. Availability of and assessment of pre-hospital audit, that is symptom or reason for hospital admission in relation to diagnosis on discharge.

Table 1. Total charges and proposed cuts in all five hospitals.

Year	No. of hospitalizations	PPH (€)	Proposed charges (€)	Cost not based in evidence (cuts)	% Cuts
2001	9	6564.65	59,081.83	6100.88	10.33
2002	17	2667.84	45,353.21	9693.67	21.37
2003	46	2912.45	133,972.84	20,126.18	15.02
2004	6	4197.02	25,182.10	3938.59	15.64
2005	8	11,260.61	90,084.87	13,799.60	15.32
2006	40	6594.90	263,796.18	133,180.55	50.49
2007	51	6586.92	335,932.85	95,914.05	28.55
2008	81	22,958.14	1,859,609.51	366,563.28	19.71
2009	540	10,400.67	5,616,362.23	1,097,581.79	19.54
2010	339	10,692.95	3,624,910.86	384,174.07	10.60
2011	63	5292.31	333,415.70	16,825.77	5.05
Total	1200	8193.50	12,387,702.18	2,147,898.43	17.34

PPH, price per hospitalization.

- Evaluation of completeness of medical records, that is whether all hospitalization documents had been recorded and submitted to the health organization.
- Assessment of clinical need for laboratory, imaging and other tests, performed during hospitalization relevant to the diagnosis upon admission and discharge, as well as any medicinal or therapeutic means or prosthetics used during hospitalization.
- Assessment of the total duration of hospitalization relevant to the diagnosis upon admission and discharge.

All clinical elements of the hospitalization records were reviewed against published disease protocols, as used by the clinical audit company to audit hospitalizations for private insurance.

The second stage audited charges for each hospitalization relevant to the diagnosis upon admission and discharge, the services provided and the means used, including a cross check of total sum to be reimbursed against the sum of individual charges referenced in each medical file. Cuts are defined as the amount of charges not based on evidence.

A summary document was created for each hospitalization without any reference to personal data, presenting audit outcomes and recommendation for reimbursement (audit report). These audit reports were then collated and analysed to test trends in overcharges among hospitalized insureds per reason for hospitalization.

Statistical analysis

Data analysis was performed with the Statistical Package for Social Science (for Windows 16.0, Chicago, IL, USA) software. Data are presented in frequencies and percentages.

Results

Ten causes of hospitalization accounted for 95.67% of total cost of audited hospitalizations, with cardiovascular

(including cardiac) accounting for 42%, surgical (including 28 hospitalizations for obesity surgery) accounting for 17%, and pathological accounting for over 10% (Figure 1).

Total charges of €12,387,702.18 were pending for reimbursement based on invoices for these hospitalizations. Clinical audit confirmed that 17.34% of the total sum, that is €2,147,898.43, should not be reimbursed as it corresponded to clinically unnecessary services or devices (Table 1).

For clarification purposes, we should note that Table 1 depicts 2006 as the year with proportionally the most proposed non-evidence-based charges in hospitalizations. Compared to other years, this significantly increased rate is attributed to the fact that 26 out of a total of 28 hospitalizations were for surgical treatment of obesity with ring placement. Of these 26 surgeries, 24 (92%) were rejected as a whole on grounds of insufficient evidence to medically justify the procedure (e.g. body mass index (BMI), comorbidities, and so on).

Overall, of the 1200 hospitalization records reviewed, almost 50% (48.54%) were proposed to be reimbursed in full (0%–0.1% cut), whereas 5.16% were rejected as a whole (100% cut). There was considerable variation in proposed cuts in the other half of audit reports.

Proposed cuts referred to medical devices (74.02%), medications (2.98%), laboratory tests (1.47%), additional consumables (2.79%), diagnostic imaging (0.80%), hospitalization (0.19%) and general charges (17.76%) (Figure 2). These percentages are more or less consistent across the years audited, with the exception of 2006, which is discussed above. The years 2010 and 2011 show lower overall proposed cut rates relative to previous years – this is due to the country having already entered deep austerity and medical devices' prices being substantially (50%–70%) decreased by the state, thus removing motives for supplier-induced demand.¹⁵

Discussion

In 2009, Greece entered into deep economic crisis, which caused serious socio-economic challenges for the country.¹⁷

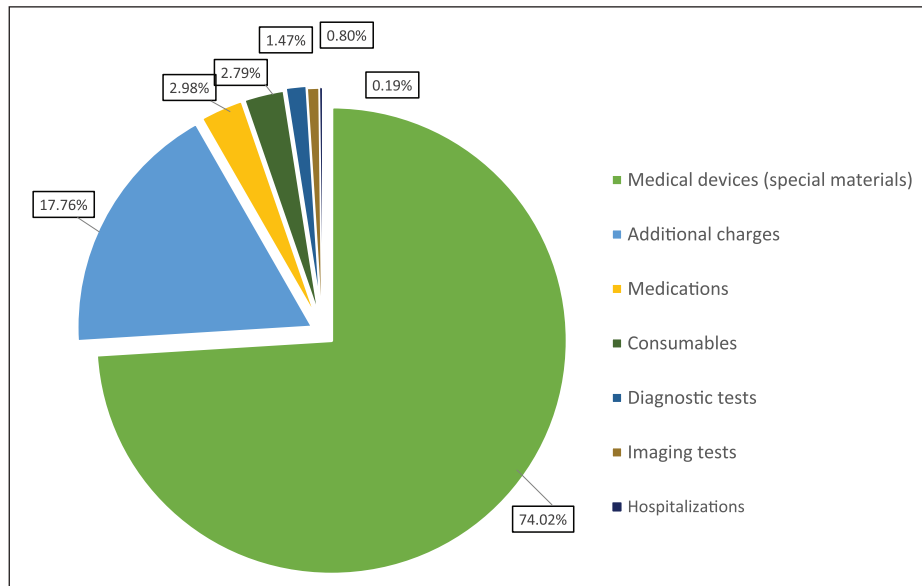


Figure 2. Evidence-based reductions in cost by audited area as a percentage of total proposed cost reductions.

To address these challenges, the Greek government requested the activation of a support mechanism from the European Union (EU), the International Monetary Fund (IMF) and the European Central Bank (ECB) and in 2010 a Memorandum of Economic and Financial Policies with the so-called ‘Troika’ (EU/IMF/ECB) was signed.¹⁸ Two further memoranda of understanding were signed in 2012 revising and consolidating details of the country’s Economic Adjustment Programme.¹⁷ Following the signing of each memorandum, a sequence of austerity measures was imposed.

As part of this austerity policy, social insurance funds were asked, among other priorities, to balance their revenues with their expenditure. OPAD in particular was plagued by overspending, given that its expenditure on healthcare had doubled over 5 years (2005–2009). Especially as regards contracted private hospitalizations, relevant expenditure had increased from 80.2 to 166.9 million euros (a 108% increase). In addition, arrears of close to 90 million euros had accumulated over said period towards private hospitals.¹⁹

Taking into account the fact that reimbursement price was set by the government for each service, OPAD was left with no other option but control volume of services by type. This required an evidence-based approach to ensure full coverage according to need, while minimizing waste, where need was not justified.

Moreover, at this point in time, OPAD was under pressure to reimburse pending contracted private hospitalizations, which its internal auditors had been unable to clear, due to case complexity. These amounted to close to 12.5 million euros, that is around 14% of the 87.5 million euros of OPAD annual (2011) contracted private hospitalization expenditure, corresponding to charges submitted by over 100 private clinics.¹⁹ As a result of this pressure, OPAD agreed with private

contracted hospitals to speed up clearance of pending hospitalizations, provided they accepted implementation of clinical audit by independent auditors for these cases. It should be noted that the private contracted hospitals in question were among the leading private healthcare providers in the country with a combined capacity of over 1200 beds,²⁰ which traditionally accepted the majority of complicated cases treated in the private sector. Due to their size, reputation and turnover, these hospitals are representative of clinical practice across the private sector in Greece and have the capacity to offer high-quality medical services to address complex (and expensive) cases.

As presented above, 17.34% of the total proposed charges was deemed not based on evidence and proposed not to be reimbursed. This is substantial considering previous experience with internal audit by the organization never yielded cuts to exceed 2%. The vast majority (2/3) of the proposed cuts corresponded to medical devices (or ‘special materials’) directly charged to social health insurance and not reimbursed by any (coexisting) private insurance. Charges for these devices, commonly stents and materials for arthroplasty, significantly contribute to the total hospitalization cost for social insurance. Especially among audited hospitalizations, charges for these materials are the most common reason for deviations from international standards or billing included in records.^{21,22} This finding is in line with previous data²³ that confirm that the major driver of an over 35% increase in hospitalization costs in the public sector over the same period was medical devices or special materials and consumables. This clearly signifies the usefulness of clinical audit in the public sector, despite any organizational and technological challenges that might arise.

The second largest category of proposed cuts refers to hospitalizations insufficiently clinically justified by respective medical records. This category includes surgeries for obesity, where patient medical records did not even include a BMI measurement or data on concomitant diseases.

All proposed cuts were based purely on good clinical practice. They did not reflect any potential deviations from best administrative or financial practice, which would potentially cancel the validity of submitted relevant documents, even if they did refer to medically probationary clinical practice, as for example the submission of the relevant documentation for reimbursement after the lapse of a considerable period of time. Such deviations from best practice did not lead to a rejection of a hospitalization reimbursement claim as a whole, despite the fact that social insurance is bound by internal regulations to only accept invoices submitted in a timely manner, if to avoid time-related distortion of actual medical facts.

Moreover, the audit exercise confirmed that a number of hospitalizations might have been avoided, were more adequate information on baseline conditions and unobstructed access to primary care services readily available, especially to non-critically ill patients. This finding is in line with previous studies.^{24,25}

Further, it became evident that were clinical audits to be performed real time (upon patient admission, during stay and discharge), proposed cuts would have been greater. The lapse of time between service provision and audit of clinical records and the inability of auditors to examine patients as they were hospitalized necessitated the acceptance of some assumptions on best clinical practice. As this study examined audit reports only, no socio-demographic patient data were made available to correlate with the results. This ‘anonymity’ limitation is reflected in the interpretation of results, as analysis was unable to identify groups of insureds, with common characteristics (age, sex, family status, financial conditions, educational background, and so on), who may have been subject to ‘less’ evidence-based care delivery.

Going forward and based on the conclusions drawn from this policy ‘experiment’, it is clear that clinical audit should be introduced on a real-time basis, allowing for full monitoring of all patient inputs, including socio-demographic data, during care delivery and across the public and private sector. This would aid the development of a common ground for the provision of quality healthcare on grounds of equity, as well as help draw a framework for an evidence-based pay for performance reimbursement approach.

Conclusion

This study confirms that clinical audit may be a key tool to achieve the much discussed ‘rationalization’ of healthcare provision, whereby healthcare services are provided in an evidence-based manner to those in need with the appropriate resources., especially in circumstances of budgetary

constraints. As such, it may be able to ensure optimal use of services by patients, without imposing any barriers on their access to care.

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Informed consent

Informed consent was not sought for the present study because no individual data were used.

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