National Audit Office
MALTA

Performance Audit

The Management of Elective Surgery Waiting Lists

Report by the Auditor General

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Performance Audit

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Table of Contents

List of Abbreviations

CATI	Computer Assisted Telephone Interview
CEO	Chief Executive Officer
CEPOD	Confidential Enquiry into Perioperative Death
CMO	Complex Major Operation
CPU	Clinical Performance Unit
EU	European Union
FMS	Foundation for Medical Services
GP	General Practitioner
IHIS2	Integrated Health Information System 2
IT	Information Technology
IVF	In Vitro Fertilisation
JHI	John Hopkins Medicine International
MAM	Medical Association of Malta
MDH	Mater Dei Hospital
MfH	Ministry for Health
MHEC	Ministry for Health, the Elderly and Community Care
MIS	Management Information System
NAO	National Audit Office
MRI	Magnetic Resonance Imaging
NHS	National Health Service
OECD	Organisation for Economic Co-operation and Development
PAS	Patient Administrative System
PET	Positron Emission Tomography
PPP	Public-Private Partnership
SLH	St. Luke's Hospital

Executive Summary

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Audit Focus

1. This performance audit sought to determine the extent to which the management of waiting lists for elective surgery at Mater Dei Hospital (MDH) was effective. Elective surgery is considered by MDH to be an intervention which may be scheduled or delayed by at least 24 hours.

2. The National Audit Office (NAO) embarked on this audit since excessive waiting times for elective surgery carries a cost for both the patient and the Hospital. Patients may suffer from deterioration in their health condition, loss of utility and loss of income from their work. The public Hospital will potentially incur higher costs for surgery and the related treatment due to the deterioration of patients' health.

3. Furthermore, excessive waiting times may also increase the Malta Government's financial liability in terms of the Cross Border Health Directive (2011/24/EU) which, locally, will come into force by October 2013. This Directive stipulates, in the event that treatment has not been fully provided after a defined period by the relative national public healthcare systems, that patients may seek medical treatment within the European Union (EU) at their respective Government's expense.

4. The increase in waiting times for elective surgery is brought about by a significant growth in demand for elective surgery at Malta's main publicly funded Hospital. This rise in demand emanates from an ageing population and the constant introduction of new operative technology dealing with previously untreated conditions.

5. The demand for elective surgery at MDH is significantly more than it was at St. Luke's Hospital (SLH). Moreover, the Hospital Management maintains that, in part, the increased demand for MDH services emanates from the better facilities offered by MDH.

6. Against this backdrop, the objectives for this performance audit were to determine the degree to which:

- waiting lists management is supported by the appropriate policies and strategies;
- MDH Management has access to comprehensive, reliable and timely waiting lists related information; and
- operating theatres at MDH are being optimally utilised.

7. The primary focus of this performance audit was on elective surgery pertaining to the Cardiology, Ophthalmic, Orthopaedics and Surgical Departments during the period April 2011 to July 2012. Towards this end, the study adopted a number of methodological approaches. Patients' attitudes and behaviour towards waiting times and the services offered by MDH were gauged through a survey of 774 randomly selected persons who underwent elective surgery during the 12 months prior to 31 March 2012. A tracer study, based on the same sample, followed the administrative trail leading up to and including elective intervention. Additionally, MDH's operating theatre logs pertaining to the Main and Endoscopy operating rooms were utilised to evaluate the theatres' utilisation rates. These approaches were supplemented by interviews with key personnel at the Ministry for Health (formerly MHEC), MDH and the Foundation for Medical Services (FMS).

Demand for elective surgery

8. The NAO survey revealed very high overall patient satisfaction levels with respect to elective surgery related services offered by MDH, including that whenever possible, patients could opt to be placed under the care of their chosen consultant. The survey also revealed that most patients consider a waiting time of up to one year for their elective surgery as reasonable. The survey revealed a drop in satisfaction levels in instances where patients considered the period they were on the waiting list for their intervention as unreasonable.

9. The survey also showed the integral part played by the private sector in the provision of healthcare. Nearly half the patients declared that they had visited the same consultant responsible for their care at MDH privately. In many of these cases, patients sought medical care through MDH and the private sector simultaneously. Among the reasons which could have led to this situation is that patients can have a much quicker access to their chosen consultant than would be the case through the publicly funded care system.

10. The complementary nature of public and private provision of healthcare results to varying degrees in market considerations influencing the availability of human resources to enable the optimisation of MDH's infrastructure. Patient demand in the private sector coupled with the attraction of better remuneration packages makes it more difficult for MDH to encourage its pool of consultants and other professionals to extend their working hours at the Hospital.

11. As at end of March 2012 there were 14,709 patients on the waiting lists at the four Departments under review. According to the NAO's tracer study, nearly three quarters of the sampled patients waited up to three months for their elective surgery, however, nearly one fifth waited for more than one year for their intervention. The longest waiting times related to the Ophthalmic and Orthopaedics Departments' patients.

Increasing the number of interventions

12. The absence of policies relating to waiting times for elective surgery hampered waiting lists management. As at the time of drafting this Report, the Hospital was in the process of adopting recently developed waiting time benchmarks. The absence of waiting time policies did not provide the Hospital's Management with targets to aim for or benchmarks against which to gauge and monitor MDH performance. Moreover, such situations do not enable patients to make more informed decisions regarding their treatment, particularly when evaluating alternative options of medical care.

13. To counter the demand for elective interventions, the number of elective surgery undertaken increased by around 35 per cent from 28,223 in 2006 to 38,165 in 2012. In part, this was facilitated by the availability of 34 theatres as opposed to the 12 at SLH. Moreover, MDH engaged more consultants and continuously sought to allocate extra operating theatre sessions to consultants. Generally, this increase in intervention throughput was possible since MDH Management was identifying and addressing areas where the potential existed to increase the number of operations through changes to work practices. In turn, the positive outcome of this approach necessitated the cooperation and flexibility of MDH staff.

14. In order to further address the issue of lengthy waiting times for elective surgery, in the budget speech for financial year 2010, Government expressed its intention to allocate absolute priority to the reduction of the Hospital's waiting lists to acceptable levels within three years. This led to substantial allocation of funds through the 'Waiting List' budget line within Vote 26 of Social Policy (Health). The broad strategic objective of reducing waiting lists to acceptable levels, however, was not appropriately defined.

15. Expenditure from the Waiting List Fund has delivered mixed results. On the one hand, effective action was taken to address waiting time issues in some areas through Public-Private Partnership agreements, such as those related to cataracts and knee arthroscopies. These led to a significant increase in the number of interventions carried out. Likewise, other initiatives to reduce the waiting time for diagnostic tests, such as Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET) scans, also led to an increase of the relative throughputs. Consequently, the availability of diagnostic test results also meant that the patient could be referred for elective surgery in a shorter waiting time. Nevertheless, this audit revealed that a number of issues limited, to varying extents, the effective utility of this Fund. These related to instances where the funds available were not fully utilised and to cases where the expenditures incurred were not related to waiting lists initiatives.

Management information systems

16. Despite the number of persons awaiting elective surgery, MDH is still in the process of fully computerising waiting lists information. The situation, until 2009, was such that MDH did not support any waiting list datasets.

17. Data related to patients was held directly by individual consultants. This data was neither homogeneous in format nor centrally accessible by the Hospital's Management. The absence of a consolidated system rendered the provision of accurate and independently verifiable waiting list information a very difficult activity. Moreover, this system did not encourage transparency and management oversight.

18. In 2009, the Foundation for Medical Services (FMS) recommended to Government that the situation portrayed in the preceding paragraphs needed be addressed immediately, such that data relating to elective interventions is rendered more visible for management and control purposes.

19. To date, FMS has computerised the waiting lists of four major Departments, namely Cardiology, Ophthalmic, Orthopaedics and Surgical. These Departments were considered to be the most problematic in terms of waiting time for elective interventions. Due to its complexities, this computerisation project was a considerably lengthy process. The last of these Departments to be computerised, Surgical, went live in April 2013. Nevertheless, validation with respect to waiting list data pertaining to this Department is still ongoing.

20. The computerisation of waiting lists was rendered more laborious since this exercise extended beyond the normal processes associated with software development and project implementation. The major difficulties were related to waiting list data capture and verification. Towards this end, the data collated through various sources had to be subjected to data integrity checks. This process resulted in a significant number being eliminated from the respective waiting lists for various reasons, such as double entries, deceased persons and persons who were no longer interested in undergoing the planned intervention.

21. Currently the System provides an overview of waiting time rather than simply having people on a waiting list. This has reflected a paradigm shift in the approach to the management of waiting lists.

22. Despite the progress attained to date, the System's potential cannot yet be fully realised for a number of reasons. These include cases where the validation process is still in progress, variances between the Centralised Waiting Lists System and the medical files, as well as incomplete information about intervention classification.

23. These limitations, to varying degrees, prohibited MDH Management from being provided with more qualitative elective surgery related data. Nevertheless, the progress registered to date to computerise the Hospital's waiting lists for elective surgery is seen as a pre-requisite to further enhance the management and delivery of operations.

24. Other management information weaknesses noted were attributable to the fragmentation of data dealing with the administrative and medical status of MDH patients. These concerns mainly arise due to the absence of a software to integrate the various stand-alone data sets and the lack of the complementary analysis tools to facilitate Hospital governance. In these circumstances, governance is weakened since the adequate level of management functions, namely related to planning, direction and control, cannot be appropriately effected.

Utilisation of operating theatres

25. Optimising the use of operating theatres is of critical importance to increase the number of operations carried out and to reduce the waiting times for elective surgery. Towards this end, the NAO examined the MDH's use of its operating theatres with the aim of determining the utilisation rate of the Hospital's theatres. This review focused on the activities within the Main theatres and Endoscopy rooms during July 2012.

26. Despite the significant increase in the number of operations carried out at MDH, it transpired that there is still scope to further increase theatre utilisation. There are many variables at play, which impinge on operating theatres' management and their efficiency. This audit has found that utilisation rates may be compromised since there is no central authority or a clearly identified coordinating body to direct and oversee operating theatres' activities.

27. Operating theatre planning has to work around a number of constraints. These include instances relating to the lack of clearly defined theatre hours, which are

contractually allocated to each consultant. Moreover, theatre planning does not appropriately coordinate other critical inputs such as anaesthetists, nurses, and Hospital beds availability. Similarly, the planning function has not been able to address issues relating to under-running intervention lists, which lead to inefficiencies created by the subsequent early session finishes.

28. Currently, there are no studies available relating the human and financial resources to the number of operating theatres and the Hospital's bed-stock. To date, the allocation of theatre sessions to consultants has its roots in historical practices rather than based on what throughput levels the Hospital can attain with the current resource availability.

29. Despite their critical importance and the fact that they rank among MDH's most valuable assets, to date, the Hospital does not have the appropriate Information Technology (IT) based programmes to facilitate the management of its operating theatres. Efforts to develop operating theatre related software through the Integrated Health Information System 2 (IHIS2) are currently stalled.

30. During July 2012, the Main theatres were used for a total of 2,455 hours. This amounts to an average of around 31 hours weekly for each theatre. This estimate considers 18 of the 20 Main theatres available to MDH at the time. During the same period, the five Endoscopy operating rooms reviewed were utilised for around 449 hours which results in an average of around 27 hours per week of utilisation per theatre. Both these estimations are subject to a number of assumptions, which are discussed in detail in this Report. Nevertheless, the estimations are deemed to provide an adequate indicator of the utilisation rates of MDH's operating theatres.

31. Moreover, the operating theatre utilisation exercise also revealed various operational inefficiencies, which, to varying degrees, restricted MDH from further increasing the utilisation rates of its Main and Endoscopy operating theatres. In turn, these issues impinged on the Hospital's intervention throughput. The main source of these inefficiencies related to late session start-times and prolonged turnaround times between interventions.

32. Although not outlined in a policy document, operating theatre teams generally acknowledge that intervention start-time is 08:30 and 13:30 hours for morning and afternoon sessions. During July 2012, theatre plans show that there were 424 and 81 morning and afternoon sessions in the Main and Endoscopy theatres. This audit revealed that in 145 of these 505 cases there were delays of more than 30 minutes in session start-up. There may be justifiable reasons for such delays – these relate mainly to clinical issues. However, there are various logistical issues, which contribute to session start-up delays. The main factors relate to delays in preparing and transferring patients from the ward and the late arrival of any of the medical team involved in the carrying out of the intervention.

33. Prolonged turnaround times between interventions are another potential source of inefficiencies, which limit intervention throughput. This review showed that, in the Main theatres, 34 per cent of turnarounds exceeded 15 minutes. In a minority of these cases, turnaround times exceeded one hour. It is to be noted that MDH sought to reduce waiting times by increasingly utilising the Holding Bay within the operating theatres area, minimising the time lost in the operating theatre staff waiting for the patient to arrive from the ward.

34. During July 2012, in 115 out of 424 instances, theatre session over-runs occurred. In total, these elective surgery over-runs amounted to 190 hours. In 43 per cent of these, the over-run amounted to less than one hour in each session. However, the remaining over-running cases were of more than one hour in each session. In cases of over-runs, the Hospital incurs additional costs equivalent to the extra variable costs involved in manning the theatres for the extended period.

35. There are a number of reasons which contribute to over-runs. In some cases, over-runs are unavoidable. These circumstances generally relate to clinical exigencies. Over-runs may also result due to logistical issues, such as delays in the commencement of sessions and prolonged turnaround times. Towards this end, these two factors contributed to nearly half of the total duration of over-runs accumulated by the Main theatres during July 2012.

Overall Conclusions

36. Through the efforts and cooperation of MDH personnel, the number of interventions carried out at this Hospital increased substantially. However, around one fifth of patients have been waiting for their intervention for at least a year. Effective waiting lists management for elective surgery is therefore a critical function of MDH

since prolonged waiting times for operations comes at a cost for both the patient and the Hospital.

37. From the NAO commissioned survey carried out by the National Statistics Office, the vast majority of patients expressed high satisfaction levels with the service provided by MDH with respect to elective surgery. On the other hand, patients who had endured what in their view constituted excessive waiting time lamented about such circumstances.

38. Waiting lists management for elective surgery is a complex endeavour since it is a function involving many variables. Moreover, the local scenario also has to take cognisance of the influence of the private sector in the provision of healthcare. In many instances, patients choose to oscillate between the public and private providers of healthcare, where generally advice is sought from the same medical specialist about the same condition being treated at MDH. Among the multiplicity of implications of such circumstances is that both sectors are, to varying degrees, utilising the same pool of resources. The better remuneration package available through the private sector severely affects the availability of specialists, especially as most of the Hospital's consultants and senior medical professionals choose to be engaged on a 'B' contract, which allows them more flexibility to cater for their involvement within the private sector.

39. The management of waiting lists was also hindered through the lack of documented policies. During the course of this audit, these ranged from benchmarks defining the waiting time for the various elective interventions. At the operational level, policies and guidelines relating to start-time and turnaround times with respect to operations have not yet been established. The absence of such policies places limitations on the coordination of the various Hospital resources, weakens management control over the elective surgery processes and hinders performance evaluation.

40. MDH is still in the process of centralising its waiting lists. This process entails computerising waiting list data, which was formerly maintained by respective consultants. This centralisation exercise is seen as transferring the ownership of waiting lists from consultants to MDH Management. Computerisation of these lists is seen as strengthening audit trails to encourage more transparency and accountability within the elective surgery processes. Moreover, the centralisation exercise would encourage more consistency in respective waiting times while also strengthening management control over the whole process.

41. There are rich sources of data maintained by MDH relating to the different administrative and clinical aspects associated with elective surgery. However, this data is maintained in stand-alone systems, which renders the generation of comprehensive management reports as a lengthy and problematic task. Similarly to the situation discussed in the preceding paragraph, the absence of integrated management information system places severe constraints on the management function related to elective surgery.

42. Optimising the use of operating theatres is a critical function of a hospital. Towards this end, MDH has increased the number of interventions significantly over recent years. Nevertheless, the opportunity exists to further increase the utilisation of the most expensive infrastructure at MDH. This audit has revealed a number of factors, which hinder the further utilisation of the operating rooms.

43. At the strategic level, MDH's throughput of day-surgery is considered lower than what is the norm for an acute care hospital. Moreover, around 12 per cent of the Hospital bed-stock is occupied by long-term care patients awaiting to be transferred to other healthcare institution. This situation limits the turnover of beds and, consequently, affects the intervention throughput. The absence of an immediate solution to enable the transfer of patients to other institutions implies that this problem will prevail.

44. The availability of resources is deemed a long-term issue, which will continue to inhibit the Hospital's throughput. Although the continuous changes to work-practices have led to positive results, it is unlikely that as a sole approach this will lead to a significant increase in the level of operating theatres utilisation. Towards this end, the Public-Private Partnership approach alleviated waiting time concerns and the approach has presented itself as a potential long-term option, especially if the appropriate financial considerations are deemed favourable.

45. At the operational level, the utilisation of operating theatres was somewhat constrained through process inefficiencies. Currently, the internal control mechanisms in place cannot be fully implemented. Primarily, these circumstances can be attributed to the

lack of a central authority within the Operating Theatres Department to assume full management responsibility for this function.

46. As a concluding comment, this performance audit focused only on a number of management and logistical variables. It did not endeavour to enter into clinical issues relating to medical care or technical issues concerning the use of Hospital's equipment. Nonetheless, the findings and conclusions in the Report are considered sufficiently robust to portray a number of concerns hampering MDH's waiting list management for elective surgery. Critical aspects in this regard relate to the need to sustain current MDH efforts to improve the efficiency of its services. These include the strengthening of its capacity to further increase the intervention throughput while minimising waiting times for operations, as well as initiatives aimed at enhancing the Hospital's governance.

Recommendations

47. In view of the findings and conclusions emanating from this performance audit, the NAO is proposing a number of recommendations. These proposals relate to the issues which are considered as the main factors influencing waiting list management at MDH:

i. Action is to be expedited to enable the recently drafted policies determining maximum intervention waiting times to be formally adopted and communicated to all the players involved in the conduct of elective surgery. Moreover, mechanisms are to be devised to ensure their consistent application across all MDH's Departments.

ii. Efforts to increase the number of day-surgery are to be sustained in order to optimise bed turnover and the operating theatres' infrastructure.

iii. Options to address the historical re-occurrence of beds being occupied by patients requiring long-term care are to be evaluated. In the short-term, efforts to transfer these patients to other institutions or residences, such as through Public-Private Partnership (PPP) initiatives, are to be broadened.

iv. MDH is to conduct studies to determine the required resources to enable the optimal utilisation of the Hospital infrastructure available. Such study is to consider the financial and economic implications against the benefits gained through the increase in resource availability.

v. Options to expedite the recruitment of key staff, particularly those considered as essential for the Hospital's operations are to be explored. Such considerations should extend to fast tracking MDH staff engagement applications within the current centralised public sector recruitment process. Another option, which may be considered, involves increasing MDH's autonomy over the recruitment function. This entails that the Hospital's administrative capacity and internal control mechanisms are strengthened to cater for such responsibilities.

vi. The feasibility of extending the provision of services through Public-Private Partnerships is to consider the financial implications by evaluating such options against the possibility of increasing throughput in-house.

vii. The process to implement fully the Centralised Waiting List System is to be expedited. Efforts are to be stepped-up for the posting of waiting list data relating to all elective surgery across MDH Departments. Moreover, consideration is to be given to ensure that this System has in-built data validation and integrity mechanisms.

viii. Measures should be taken to ascertain that Departments which are already utilising the Centralised Waiting List System complete all the information required. In particular, users of this System are to complete supporting information such as that relating to clinical priority and reasons for changing such designations. These measures are seen to further promote the principles of transparency and accountability with respect to waiting lists.

ix. Consideration is to be given to computerise data related to operating theatre activities. The operating theatres infrastructure is the most valuable asset and is of critical importance in terms of intervention throughput. In this light, Hospital Management is to evaluate the financial and operational benefits of procuring and utilising an off-the-shelf software package until such time

that the Integrated Health Information System 2 (IHIS2) has been developed and commissioned. As a minimum, any electronic system considered for the operating theatres should cater for session allocation, the daily list of interventions, the resources level required to man the theatres and a log of all activities relating to actual theatre utilisation.

x. Efforts to implement the IHIS2 or to identify alternative systems, which integrate datasets considered as critical to the Hospital's processes, are to be stepped up. Prolonging decisions and implementation in this regard prohibits MDH Management from exercising the appropriate levels of direction and control.

xi. MDH is to develop and communicate with the multidisciplinary teams its policies relating to operating theatre processes. These mainly related to operation morning and afternoon session start-times, turnaround times between operations and procedures to be followed for changes to existence sessions and requests for extra sessions. Moreover, procedures are to be established and documented with respect to session over-runs.

xii. MDH management is to ascertain that job plans pertaining to senior resident specialists and consultants clearly define how clinical hours are allocated between outpatients, ward-rounds, operating theatres and other functions. Moreover, job plans are to include key performance indicators such as those related to the number of operations to be performed in a defined period.

xiii. The audit trail relating to the compilation of the daily intervention lists of patients to undergo elective surgery is to be strengthened. Toward this end, current mechanisms are to be reviewed to ensure that the number of patients included in the daily intervention lists is appropriate in relation to the duration of specific operating theatre sessions. Moreover, changes in these lists are to be endorsed by an MDH designated authority.

xiv. Moreover, the assignment of all management positions is considered as a pre-requisite to ensure the appropriate level of management control. In this regard, and as a matter of urgency, the current vacant headship position relating to the management responsibilities of operating theatres needs to be addressed.

Chapter 1

Terms of reference

Chapter 1 – Terms of reference

1.1 Introduction

1.1.1 The waiting lists and times for elective surgery at Mater Dei Hospital (MDH) have been the subject of considerable public debate.[1] Public concerns relating to elective surgery at MDH mainly related to what is considered to be as excessive waiting time for certain elective interventions.

1.1.2 Excessive waiting time carries a cost for both the patient and the hospital. Patients may suffer from deterioration in their health condition, loss of utility and loss of income from their work. The public Hospital will potentially incur higher costs for surgery and the related treatment due to the deterioration of patients' health. These costs will be different for specific cases.

1.1.3 Furthermore, excessive waiting times increase the Malta Government's financial liability in terms of the Cross Border Health Directive (2011/24/EU). The deadline for the transposition of the Directive by Member States is 25 October 2013. The Directive stipulates that patients may seek medical treatment within the European Union (EU), at their respective Government's expense, in the event that treatment has not been fully provided after a defined period by the relative national public healthcare systems that is MDH in this case. The Directive includes provisions relating to the extent of reimbursement entitlements.

1.1.4 MDH Management maintains that the increase in waiting times is brought about by a significant growth in demand for elective surgery at Malta's main publicly funded Hospital. This rise in demand emanates from an ageing population and the constant introduction of new operative technology dealing with previously untreated conditions. Moreover, the demand for elective surgery at MDH is significantly more than it was at St. Luke's Hospital (SLH).[2] In part the increased demand for MDH services emanates from the better facilities offered by the latter. The increased demand also implies public confidence in the services provided by MDH.

1.1.5 Consequently, these factors inflated the demand and increased waiting times for elective interventions. MDH responded to the increased demand by increasing the number of operations held at MDH. To an extent, this has been possible due to the changes in work practices and the increased availability of operating theatres as well as farming out of some interventions.

1.1.6 Against this backdrop, the National Audit Office (NAO) conducted the performance audit: *The management of elective surgery waiting lists*. The primary aim of this audit was to determine the extent to which MDH's efforts are effectively minimising waiting times for elective surgery. This audit focused on the period April 2011 to July 2012.

1.2 Waiting lists aim to provide information on the prioritisation of elective surgery

1.2.1 The Organisation for Economic Co-operation and Development (OECD) contends that the provision of surgery has to take account of the differing urgency with

[1] The terms surgery, operation, intervention and procedure are used interchangeably in this Report.

[2] Saint Luke's Hospital was Malta's main publicly funded general hospital up to June 2007.

which interventions are required. It is to be noted that there is no international agreement on prioritisation of surgery. The OECD points out that it is common to see the following classification of prioritisation of surgery, although many healthcare administrations use more detailed categories of urgency:

- **Emergency surgery** - intervention is required immediately.
- **Urgent surgery** - intervention is required, prior to discharging the patient home.
- **Elective surgery** - intervention is necessary but the patient can be sent home and the timing of the procedure can be scheduled.

1.2.2 This Report is concerned with elective surgery. Although not outlined in policy documents, MDH considers elective surgery to be interventions, which may be scheduled or delayed by at least 24 hours. Examples of elective procedures carried out at MDH include: cataract surgery, hip replacement, knee replacement, coronary artery bypass surgery, percutaneous transluminal coronary angioplasty, hernia repair, cholecystectomy, hysterectomy, prostatectomy, as well as ligation and stripping of varicose veins. The practice at MDH is to include patients who have been assessed as requiring elective surgery in a waiting list. Bookings are generally recorded in accordance with the hospital's policy and/or practices. Currently, MDH is in the process of centralising and standardising the Hospital waiting lists.

1.2.3 Critically, waiting lists also provide information on the elective surgery prioritisation assigned to each case by the hospital. The prioritisation classification assigned has a significant weighting on the scheduling of the operation. Consequently, waiting lists indicate the period that a patient has been waiting for the relative intervention.

1.2.4 Many international healthcare institutions and organisations define or interpret waiting time differently. MDH considers waiting time to relate to the time from when a patient is clinically assessed as requiring elective surgery and thus is placed on the waiting list, to the time that the patient is admitted for the procedure to be carried out. Hence, such a definition of waiting time excludes the time during which the patient may have attended hospital outpatient visits or had undergone diagnostic tests. Such a definition of waiting time, is as recommended and utilised by both the OECD and the National Health Service (NHS) - UK.

1.2.5 For the purpose of this audit, waiting times are being estimated in accordance with the foregoing. However, for practical reasons, the date of the intervention was considered instead of the admission date. Such an approach was adopted since it transpired that in the vast majority of cases, the variance between these two dates is negligible.

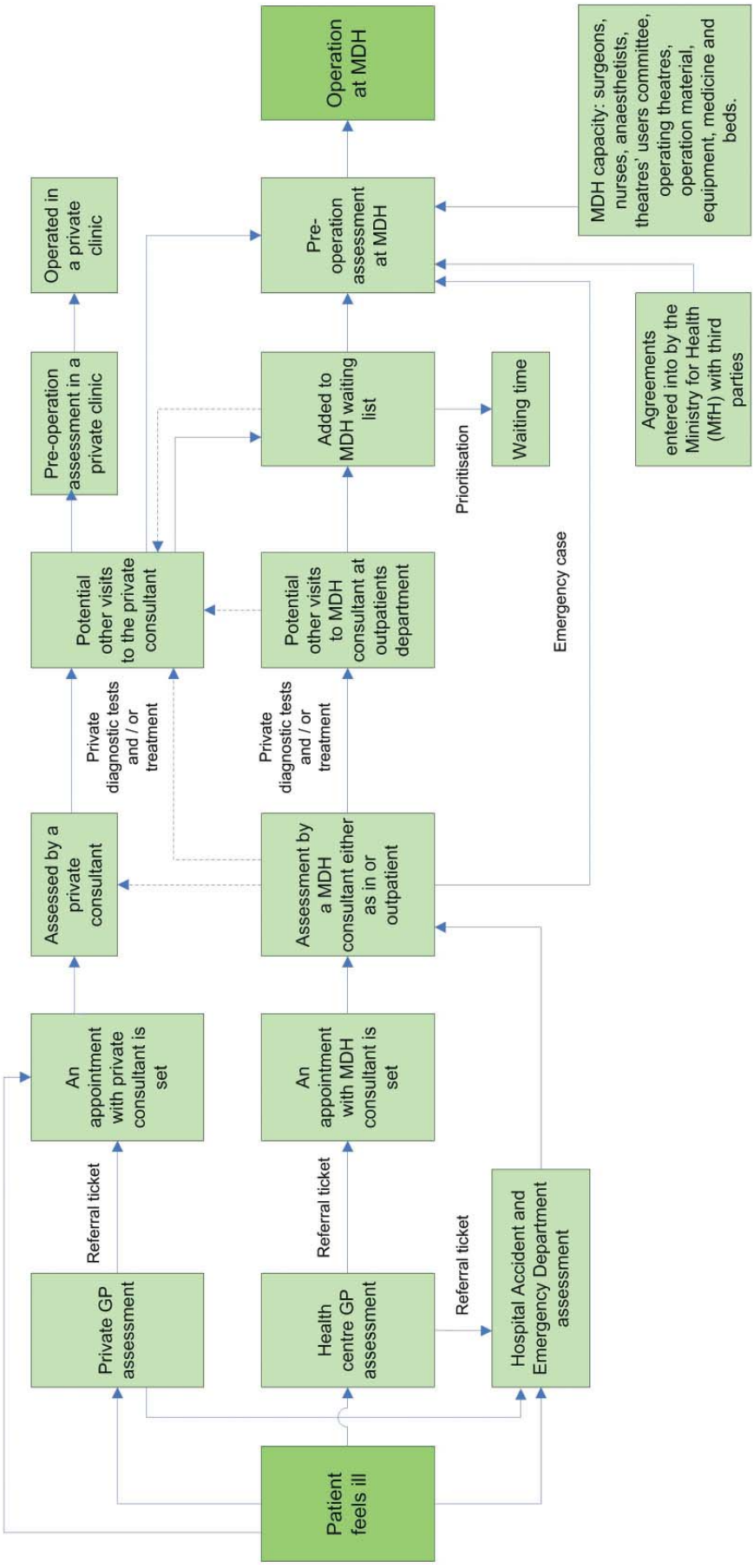
1.3 Waiting lists and times for elective operations constitute critical management tools

1.3.1 Waiting lists, including information on waiting times, are important management tools. Waiting lists enable hospitals to take cognizance and to manage individual patient's conditions through a system of classification and prioritisation of the interventions required.

1.3.2 Well managed waiting lists enable administrators to optimise the use of resources at the hospital's disposal. These resources mainly include hospital infrastructure, staff and equipment. Towards this end, waiting lists facilitate the hospital's planning process and coordination between the various stakeholders involved in performing elective operations. Waiting lists also provide for an interesting case-mix and identify the hospital's training needs to be met.

1.3.3 In addition, well managed waiting lists also constitute good governance practices. They provide audit trails which, subsequently promote transparency and accountability. In this respect, waiting lists enable the hospital to assess its overall and individual performance of key personnel involved in the conduct of elective surgery. On the other hand, long waiting lists as well as excessive waiting times may go beyond pure measurement, in the sense that they are seen to embody bureaucracy, and inconvenience.

Figure 1 : Elective surgery process



1.4 Elective surgery waiting times at MDH are influenced by various factors

1.4.1 The moment that patients suffering from health conditions, which might benefit from surgical interventions seek or are referred for further investigations, triggers various complex processes within MDH. Figure 1 refers. Such processes draw on the input of various medical specialists. Consequently, the management of these processes is key to ensure the efficient and effective provision of healthcare.

1.4.2 The MDH infrastructure is triggered once a General Practitioner (GP) refers a patient for further investigations. Such a referral can be made by either the health centre or the patient's private GP. Alternatively, a patient may also be referred for further medical assessments at the Hospital through MDH's Accident and Emergency Department.

1.4.3 Following referral for further medical investigations by an MDH specialist, a patient is examined by a consultant either as an outpatient or inpatient. On the basis of this examination and any other diagnostic tests that may have been performed, the consultant determines whether or not elective surgery is required. The patient is then added to an elective surgery waiting list in accordance with the relative clinical urgency. A patient may also be added to the MDH waiting lists even if the relative case was assessed through private rather than MDH specialists.

1.4.4 Subsequently, MDH informs the patient of the operation date. If deemed necessary, the patient is requested to undergo a pre-operation assessment a few days prior to the planned intervention. During this visit, the patient is provided with further information about the relative procedure. Moreover, any administrative requirements, such as patient consent, are completed during this session. The patient is then admitted to MDH to undergo the intervention on the scheduled date.

Elective surgery draws on the input of various medical specialists and administrators

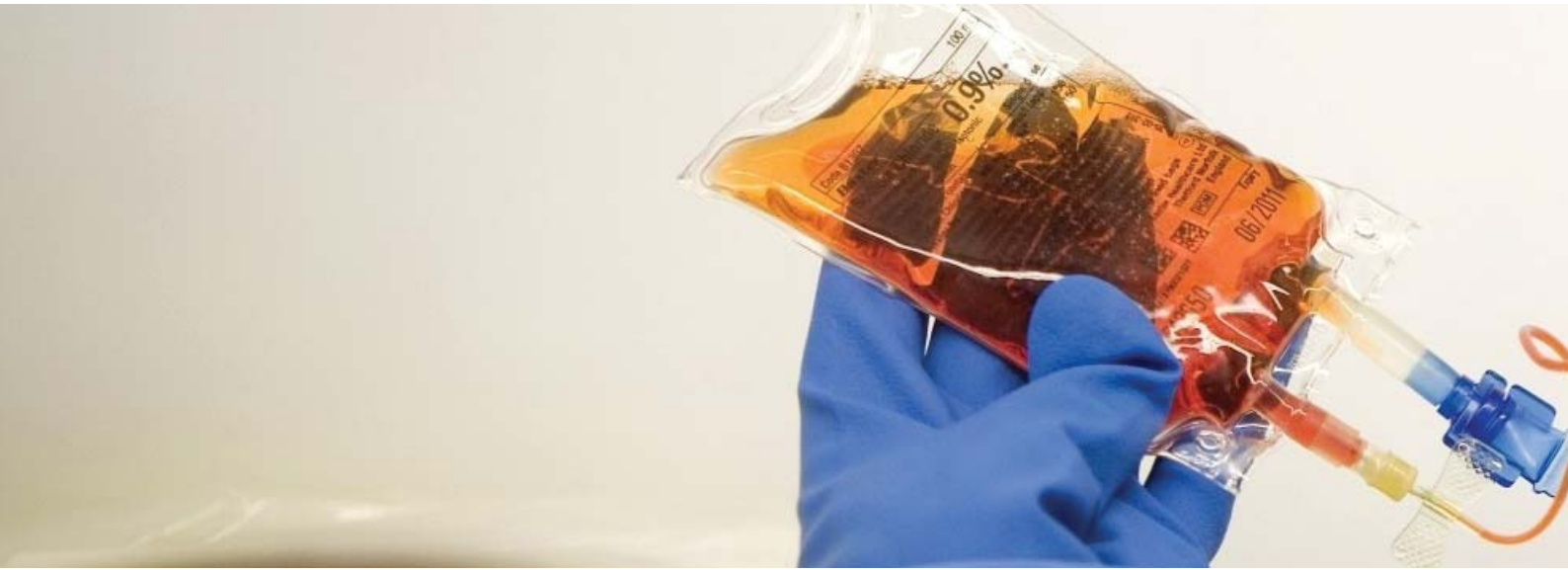
1.4.5 MDH houses 34 operating theatres of which 20 are designated as the Main theatres, six endoscopy rooms, two Catheterisation-labs and six other theatres which are used for other specialities. Additionally, the performance of an operation is dependent on effective coordination between all the medical specialists and administrators at MDH. These professionals are responsible to coordinate the various functions required to perform surgery and to optimise the use of available resources in order to increase efficiency and the number of operations, which ultimately results in a reduction of waiting times for patients awaiting elective interventions.

1.4.6 The Operating Theatres' Users Committee allocated theatre time to the various Departments at MDH. This Committee brought together the various players involved in operating theatre management, namely MDH Management, consultants, anaesthetists and nurses. The Head of the Surgical Department chaired this Committee. The Committee, generally, met quarterly to discuss ongoing requests by various Departments for the allocation of additional operating theatre hours and other issues relating to the management of operating theatres. However, in 2013, this Committee suspended its operations. In this regard, the Chief Executive Officer (CEO) appointed the Theatre Action Team to replace such Committee.

1.4.7 The departmental allocation of operating theatres is subsequently designated by the respective head of department (chair) to consultants within the relative remit. Consequently, consultants then allocate operating theatre time between the various firms (teams) under their supervision. These firms comprise surgeons and doctors who will be responsible for the provision of care related to and including the elective intervention.

1.4.8 Day-to-day management of the operating theatres is entrusted to the main players involved in the performance of surgical interventions, namely consultants, anaesthetists and nurses. A daily operating theatres' intervention list, as approved by respective consultants, is forwarded to the main players to make the necessary arrangements to enable the operation indicated to be performed.

1.4.9 However, the afore-mentioned elective operations process is subject to various internal and external circumstances. These ultimately impinge on the efficiency of the processes involved, which may consequently be reflected in the patients' waiting time for elective surgery.



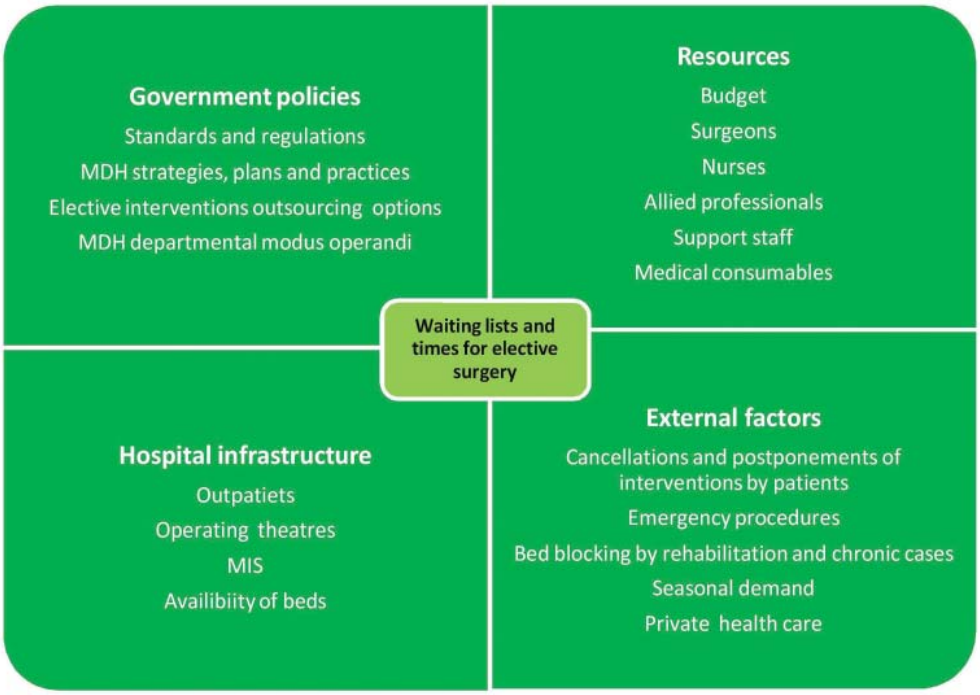
Waiting lists and times management efficiency is conditioned through interrelated variables

1.4.10 As was discussed in preceding paragraphs, waiting lists and times for elective surgery are subject to complex management processes. The management of these processes is further affected through various factors, some of which may be external to MDH. Figure 2 categorises the variables impinging on elective surgery waiting lists and times into four main areas, namely; policies, resources, infrastructure and external factors.

1.4.11 Irrespective of the intensity of demand for elective surgery, MDH Management is obliged to deliver such services in accordance to EU and national policies. Additionally, elective surgery, as is the case with all other Hospital deliverables, is subject to adherence to a framework of clinical standards.

1.4.12 Moreover, the number of elective interventions undertaken is dependent on the Hospital infrastructure. The number of operations undertaken is directly related to the efficient utilisation of available operating theatres

Figure 2: Variables impinging on elective surgery waiting lists and times



and the Hospital's bed-stock. Similarly, MDH resource availability, ranging from medical professionals to the consumables required for surgery is a crucial determinant of intervention waiting times. Towards this end, a robust management information system is required to aid management in synchronizing the deployment of resources in order to optimise the use of the Hospital infrastructure.

1.4.13 Waiting lists and times for elective surgery are also influenced by factors beyond MDH's control. A significant number of patients opt not to keep their elective intervention appointment for various personal reasons. In many instances, MDH is not informed and has to daily deal with a number of patient 'no-shows'. Emergencies and seasonality also impinge on Hospital waiting times. Seasonality is particularly evident during the winter months, where there is a significantly higher demand for Hospital beds. Moreover, around 12 per cent of MDH bed-stock is not being utilised in accordance with the services provided by an acute care Hospital. This is mainly due to the long-term care being provided to persons waiting to be transferred to residential homes for the elderly.

1.4.14 An important consideration for MDH Management relates to the provision of healthcare through the private sector. Moreover, most of the consultants are employed through a contract, which allows them to practice in the private sector. Consequently, MDH scheduling has to take cognizance of each consultant's availability.

1.4.15 In addition, MDH practice is to entertain, whenever possible, patients' request to be placed under the care of their preferred consultant. Consequently, this leads to a situation where some consultants will have longer waiting lists than others, which in turn is reflected in longer waiting times.

1.4.16 On the other hand, many patients exercise their right of choice and seek medical care for a specific ailment through the private sector. In many cases, the patient's private and MDH healthcare specialist tend to be the same. Furthermore, both the public and private sector may be dealing with the same case simultaneously. Such situations may impinge on MDH's elective surgery planning process since the relative diagnostic and other medical information may not reach the latter through the standard procedures in place.

1.5 Audit focus and methodology

1.5.1 The discussion outlined in this Chapter has identified the major concerns associated with waiting lists and times for elective surgery at MDH. Towards this end, this performance audit sought to evaluate the extent to which MDH is effectively managing its waiting lists for elective surgery. The effective management of waiting lists is seen as directly influencing interventions' waiting times. Consequently, this audit aimed to determine the extent to which:

- the waiting lists management structure is supported by the appropriate policies and strategies;
- MDH Management has access to comprehensive, reliable and timely waiting lists related information; and

- operating theatres at MDH are being optimally utilised.

1.5.2 It is to be noted that the above objectives do not comprehensively address all factors influencing the management of elective surgery waiting lists and times. The NAO constructed the objectives of this audit on what was deemed to be the critical elements prolonging intervention waiting times. For this purpose, the NAO considered available literature and reports commissioned by Ministry for Health, the Elderly and Community Care (MHEC), as well as interviews with key players at both the Ministry and the Hospital.

1.5.3 Furthermore, the scope of this audit was limited to the Departments of ophthalmology, orthopedics, surgical and cardiology. These Departments were selected as they had the longest waiting lists for elective surgery. However, all interventions were taken into consideration when concerning the objective relating to the extent of utilisation of MDH's Main and Endoscopy operating theatres.

1.5.4 The objectives of this performance audit were realised through various exercises, which aimed to determine the number of persons on waiting lists and the relative waiting times for elective interventions, the patients' perspective relating to the surgery undertaken, as well as operating theatres utilisation. Due to case sensitivity associated with medical issues, prior to embarking on these exercises, the NAO solicited the advice of the Commissioner of Data Protection.

1.5.5 The number of persons on relative waiting lists was determined through a review of Hospital medical files, namely through the data maintained by the Foundation for Medical Services (FMS) and MDH. Intervention waiting times were determined through a review of randomly selected medical files as well as, where available, through the Centralised Waiting List System maintained by the FMS. Due to the clinical technicalities associated with eliciting administrative data from medical files, this review involved significant input by MDH.

1.5.6 Patients' perspectives on elective surgery waiting lists and times were sought through a survey, which was commissioned to the National Statistics Office. The survey sought the comments of 774 randomly selected persons out of the 24,605 persons who undergone elective surgery at the four Departments under review during the audit period. The survey was conducted between 10 and 17 October 2012. A detailed methodology is attached at Appendix I.

1.5.7 This audit also entailed evaluating the degree to which MDH was utilising its operating theatres optimally. Whilst acknowledging that other important elements are present (see paragraph 1.4.8), for the purpose of this audit, the NAO considered consultants as the main variable which influenced theatre utilisation. This assumption was mainly based on MDH's practice of allocating operating theatre times to consultants, their primary role in performing operations as well as records availability. Despite the potential limitations of this approach, the results and conclusions drawn from this exercise provide very strong indications on operating theatres' utilisation rates.

1.5.8 Operating theatre utilisation rates were determined for July 2012. This exercise entailed:

- establishing the weekly utilisation rates in the Main and Endoscopy operating theatres; and

- identifying administrative and logistical inefficiencies within the operating theatres under review.

1.5.9 Semi-structured interviews with MHEC[3] and MDH officials were also undertaken to assess various management issues concerning elective interventions. Such issues related to the relative policy and strategy inputs required to support and guide MDH operations. Moreover, the conduct of semi-structured interviews, a review of various documentation and data analysis related to elective surgery enabled the NAO to assess the appropriateness of information available to MDH Management.

1.6 Report structure

1.6.1 Following this introductory Chapter, the Report proceeds to discuss the following:

- **Chapter 2** seeks to discuss the status of waiting lists management for elective surgery. Towards

[3] From April 2013, MHEC responsibilities were transferred to the Ministry for Health (MfH). This Report refers to MHEC as this was the ministry responsible for the provision of healthcare during the period reviewed by this audit.

this end, the discussion focuses on statistics relating to the number of persons on departmental waiting lists and the relative waiting times for elective interventions. Moreover, this Chapter will also present patients' perspectives on elective operations undertaken.

- **Chapter 3** discusses MHEC and MDH's efforts to reduce waiting lists and times for elective surgery. It will also discuss the management of the Waiting List Fund as well as the outsourcing scheme to minimise waiting lists.

- **Chapter 4** outlines concerns relating to the capturing, recording, maintaining and compilation of management reports relating to elective surgery. This discussion highlights the importance of management information to enhance MDH's management ability to plan, direct, control and monitor processes related to elective surgery.

- **Chapter 5** discusses the analysis undertaken to determine the utilisation rates of the Hospital's operating theatres. For this purpose, the Chapter discusses issues relating to consultants' job plans and theatre allocation practices. Moreover, this Chapter highlights concerns, which impinge on theatre efficiency levels.

1.6.2 The overall conclusions drawn and recommendations emanating from this audit are included in this Report's Executive Summary on pages nine to 12.

Chapter 2

Waiting lists and times for elective surgery at MDH

Chapter 2 – Waiting lists and times for elective surgery at MDH

2.1 Introduction

2.1.1 Waiting lists and the respective waiting times for elective surgery has been a publicly debated issue. However, reliable information indicating the number of persons on respective waiting lists and times is limited. Towards this end, the Foundation for Medical Services (FMS) was assigned the responsibility to establish an Information Technology (IT) based system to ascertain that Mater Dei Hospital (MDH) Management has comprehensive and robust information on the status of waiting lists and times. This task was necessary since historically the consultants maintained data related to waiting lists, and consequently the relative information was not maintained in a centralised system which could be easily accessed by the Hospital's Management. In these circumstances, MDH Management could not be fully cognisant of the demand for the various interventions. This consultant centric system of managing waiting lists severely constrained the management function related to elective surgery.

2.1.2 Despite such limitations, Ministry for Health, Elderly and Community Care (MHEC) and MDH Management were aware that in certain areas, there was substantial waiting time for elective surgery. In fact, the National Strategy Report 2006 to 2008 outlined various approaches to address waiting lists related concerns. Most of these initiatives have since been implemented. Such actions mainly relate to the establishing of a system for better management of Hospital waiting lists in partnership with medical consultants as well as better utilisation of Gozo General Hospital and the private sector in a bid to bring down waiting times. Concerns with waiting times were also expressed by the Medical Association of Malta (MAM). The Collective Agreement signed between Government and MAM for the period 1 January 2008 to 31 December 2012 recognised that consultants had to change their work practices to address the waiting lists problem. Moreover, the latest Collective Agreement signed in February 2013, outlines additional measures to further reduce waiting times for elective surgery.

2.1.3 In view of the foregoing, this Chapter discusses the following issues:

- patients' attitudes towards the quality of the services provided by MDH;
- demand for elective surgery;
- estimated waiting times for elective surgery;
- patients' behaviour related to MDH waiting lists and times; and
- the private sectors' influence on the elective surgery process.

2.1.4 Findings and conclusions presented in this Chapter are based on the results of the survey, which elicited information about waiting times and ensuing patient attitudes and behaviour as well as the level of satisfaction experienced by patients who had undergone elective surgery between 1 April 2011 to 31 March 2012.

2.1.5 The survey data was weighted and calibrated to reflect the relative department and intervention category proportionality. Hence, the figures that are going to be presented in this Chapter are based on weighted responses rather than frequencies of the survey participants' responses.

2.1.6 Additionally, the issues discussed in this Chapter take cognisance of the outcome of a tracer study undertaken to review the administrative and management processes leading to elective surgery. An outline of the methodology used for the purpose of both exercises are found in paragraphs 1.5.3 to 1.5.5, whereas a detailed methodology relating to the sampling techniques utilised to determine survey participants is attached at Appendix I.[4]

2.2 The services relating to elective surgery are patient-centric

2.2.1 The National Audit Office (NAO) survey with 774 patients, sought to analyse the patients' level of satisfaction and to what extent MDH accommodated their request regarding their preferred consultant. Notwithstanding long waiting times, patients were highly satisfied with the services provided in the different phases of their trajectory to perform elective surgery. Moreover, MDH accommodates the patients' request to be under the medical care of their preferred consultant. The ensuing paragraphs will discuss in further detail these two conclusions.

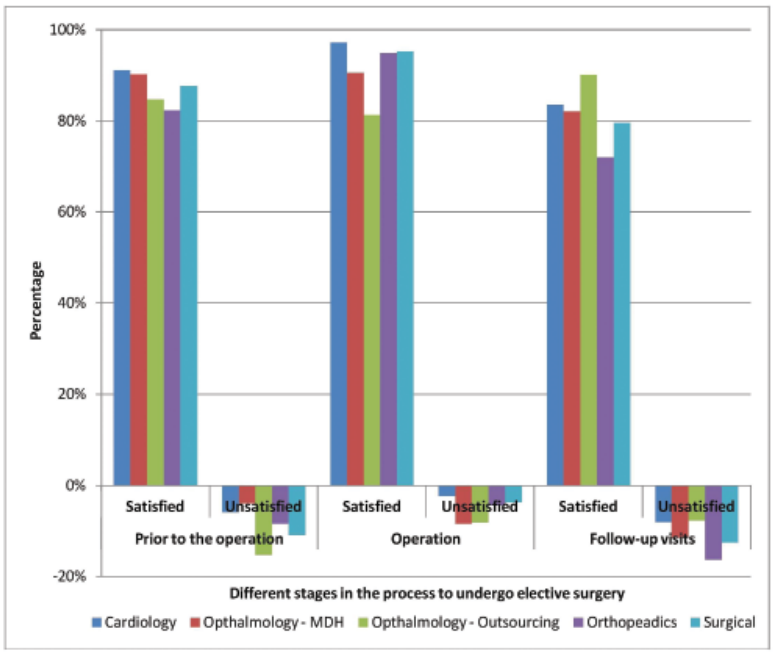
Patients are highly satisfied with the overall quality of services relating to elective operations

2.2.2 The NAO survey showed that patients were highly satisfied with the quality of services relating to elective surgery. Participants were asked to rank their satisfaction levels with services offered by MDH prior to, during their confinement as an in-patient for their operation, as well as with respect to follow-up visits as an outpatient. Figure 3 refers.

2.2.3 In all of these three circumstances, around 80 per cent of the patients stated that they were either satisfied or very satisfied with the services provided. Generally, the higher satisfaction levels related to the services offered before and during the in-patient period. Satisfaction levels then decreased marginally during the follow-up visits after the operation.

2.2.4 The exception to these trends related to satisfaction levels expressed by patients who had undergone cataract operations through the outsourcing programme, prior and during the operation period.

Figure 3 : Patients' satisfaction levels with the quality of service related to elective surgery



Source : NAO survey (Appendix III – Table 15c, 16c and 17c).

[4] Due to the weights assigned to each participant and rounding up, in some instances, totals of survey respondents may not always reconcile with the 24,605 elective interventions being considered for this performance audit.

Although satisfaction levels during the operation phase, remained exceptionally high at 81 per cent (578 out of the 710), this result is the lowest expressed for this phase of the elective surgery process. Moreover, it is the only instance where patients' satisfaction with follow-up visits exceeded that related to the intervention phase. Another exception was noted in the follow-up stage of the Orthopaedics Department. Satisfaction levels, while still high at 72 per cent (2,294 out of 3,187), were marginally less than in the other levels.

The patients' preference of consultant was generally favourably considered by MDH

2.2.5 A major element contributing to high satisfaction levels relates to the MDH policy that patients can choose to be placed under the care of their preferred consultant.[5] The survey revealed that 8,039 out of the 24,605 (33 per cent) of the participants declared that they expressed such a preference.[6]

2.2.6 In the vast majority of these cases (82 per cent) MDH was able to meet patients' request for a preferred consultant. This was more predominant in cases related to the Orthopaedics Department.[7]

2.2.7 The survey further emphasised the patients' satisfaction levels expressed regarding their choice of consultant as it resulted that only 2,014 (eight per cent) of all the patients opted not to retain their assigned consultant.[8] Among the reasons justifying the non-retainment of the assigned consultant, was a lengthier waiting list, which consequently implies a longer waiting time for the intervention.[9]

Generally, consultants did not inform their patients that they may not carry out their operation

2.2.8 While patients' were highly satisfied with the level of service provided, from the survey, it transpired that in the majority of cases (around 70 per cent), patients were not informed that the consultant may not carry out the operation himself.[10] At MDH, consultants manage what are termed as "firms". These are mainly composed of junior surgeons. These surgeons can operate either under the supervision of the consultant or on his behalf. This decision depends on the nature of the operation. Such scenario is permissible as MDH serves also the purpose of a teaching Hospital.

2.2.9 The aforementioned paragraphs illustrate that the patients were highly satisfied with the services provided by MDH and the other initiatives undertaken by Government to reduce waiting time. Nevertheless, waiting lists and the respective waiting times are still high in particular departments.

2.3 As at end March 2012, there were 14,709 patients on MDH waiting lists for elective surgery

2.3.1 Historically, respective consultants maintained their own individual records relating to patients waiting to undergo elective surgery. Such a system entailed that each consultant maintained an individual method of listing patients requiring an operation. Generally, these records were maintained in personalised diaries, spreadsheets or stand-alone departmental computerised systems. These practices relating to managing waiting lists were imported into MDH following the transfer from Saint Luke's Hospital (SLH) in July 2007.

2.3.2 As the demand for elective surgery rose, it became increasingly apparent that it was imperative to consolidate the several sources of waiting lists related information in a centrally available management electronic system. In turn, such a system would enhance the management function of elective surgery in terms of planning, strengthening of control mechanisms, encouraging standard approaches throughout the Hospitals' Departments as well as to be able to monitor MDH's performance. Subsequently, such improvements would enable MDH to, as far as possible, meet the demand for elective surgery within clinically acceptable time-frames.

2.3.3 The task of consolidating waiting lists information into a centralised electronic system was commissioned by MHEC to FMS in 2009. To date, this exercise extended to the Orthopaedics, Ophthalmic and Cardiac Departments. During the course of the audit, the process to have the Surgical Department waiting list in the centralised system, has started and currently validity checks of data

[5] The circumstance, which preclude the patient choice include the non-availability of consultant to conduct the operation within the stipulated timeframe.

[6] Refer to Tables 1a to 1d in Appendix III.

[7] Refer to Table 2c in Appendix III.

[8] Refer to Tables 3a to 3d in Appendix III.

[9] Refer to Tables 5a to 5d in Appendix III.

[10] Refer to Table 7a-d in Appendix III.

inputted are still in progress as it is the case to varying degrees with other Departments. Prior to this exercise, the Hospital Management could not be considered as the owner of waiting lists as it could not have robust and comprehensive information at its disposal relating waiting lists and times. Such a situation diminished MDH's control over waiting lists since transparency, accountability and efficiency could not be effectively gauged and monitored. The complexities and issues arising from the waiting lists consolidation exercise are discussed in detail in Chapter 4.

2.3.4 The FMS system indicated that as at end March 2012, there were 13,641 patients awaiting elective interventions at the Departments of Orthopaedics, Ophthalmology and Cardiology. Moreover, data maintained by the Clinical Performance Unit (CPU) outlined that there were 1,068 patients on the Surgical Department's waiting lists. Table 1 refers.

Table 1 : Number of patients waiting for elective interventions (March 2012)

Department	No. of patients
Cardiology	2,222
Ophthalmology	3,966
Orthopaedics	7,453
Surgical[11]	1,068
Total	**14,709**

2.3.5 NAO data integrity checks revealed that the information reproduced in Table 1 may have a number of limitations, since data validation by FMS is still on-going. Despite these limitations, this information is for indicative purposes only. The NAO data integrity checks are discussed in detail in Chapter 4.

2.3.6 The absolute numerical size of lists is quoted frequently from various sources such as in Parliamentary Questions. However, this figure has little meaning without the knowledge of how quickly patients are treated. The size of a list is by itself no guide to hospital effectiveness or efficiency. The critical issue is that care is actually delivered in a timely manner. Long lists are only a problem when individual patients are required to wait too long before their condition is treated. Furthermore, no waiting list implies empty beds or less efficient use of hospital resources. Reliable waiting lists can be seen as a management tool that facilitates planning, resource allocation and enables the hospital's performance to be evaluated against these lists.

2.4 Nearly a fifth of patients had been waiting for elective surgery for over one year

2.4.1 The NAO carried an analysis of waiting times based on administrative data available in medical files and at the Centralised Waiting List System maintained by the FMS. This evaluation revealed that in around two thirds of cases, elective surgery was carried out within three months. On the other hand, nearly one fifth of patients waited for over a year for their operation. This analysis also outlined that during the course of the audit, there was an absence of national waiting time policies and limited information related to the clinical prioritisation of surgery. These factors diminish MDH's control over ensuring that waiting times for the relative interventions are considered reasonable, particularly in view of the provisions of the Cross Border Health Directive.

Recently developed waiting time benchmarks are awaiting formal adaptation

2.4.2 Internal policies stipulating maximum waiting times for planned surgery offer various benefits, both for hospital management as well as patients. Waiting time policies are usually based on clinical considerations. Such policies enable hospitals to allocate the required resources to meet the stipulated waiting times benchmarks and to monitor its performance in terms of efficiency and effectiveness.

2.4.3 Consequently, waiting times benchmarks facilitates the process of identifying patients who should be called up or should have already undergone the planned procedure. Another critical consideration of these benchmarks relate to the introduction of provisions included in the Cross-border Health Directive (2011/24/EU). These provisions entitle an individual to seek medical treatment through alternative sources, including abroad, at the expense of the national government in cases that medical care was not provided within a reasonable time. This is important for local Hospital due to its financial implications.

2.4.4 Waiting time policies, benchmarks or quality service charters relating to elective surgery were not in place during the course of this audit. Consequently, MDH was not in a position to exploit the benefits associated

[11] The figure presented is based on estimates submitted by respective consultants to the CPU. The limitations of this estimate are further emphasised since FMS data relating to March 2013 quoted the waiting list for this Department at 3,588.

with these management tools. However, it is to be noted that in recent weeks MDH established maximum waiting times for elective surgery. As at the time of drafting this Report, the Hospital was in the process of establishing the mechanisms to implement these benchmarks.

2.4.5 Until such time that waiting time policies are fully implemented, patients are neither completely informed nor guaranteed that the intervention will be performed, within the stipulated period. Moreover, such situations do not enable patients to make more informed decisions regarding their treatment, particularly when evaluating alternative options of medical care.

2.4.6 It is acknowledged that waiting times are influenced by various clinical factors, including case urgency, operation type and consultant availability. Nevertheless, MHEC and MDH top Management opined that for the purpose of this exercise, a one-year waiting period in considered as a prudent benchmark. The NAO corroborated this standard with the practices adopted by various international health institutions, namely: New South Wales Department of Health and the British National Health Service. In view of the foregoing, for the purpose of this audit, the NAO also gauged elective surgery waiting times against this one-year benchmark.

Around two thirds of elective interventions were carried out within three months, however, in most cases their clinical priority is unknown

2.4.7 The NAO sought to determine waiting times in the four Departments reviewed in this performance audit. It is to be noted, that data was collated from the relative medical files through a randomly selected sample. An outline of the sampling methodology adopted has already been presented in paragraph 1.5.5 whereas the approach in detail is attached in Appendix I.

Table 2 : Total number of operations carried out by the Departments under review and the respective number of sampled medical files

Department	No. of patients who had an elective surgery	Sampled medical files	Data available in file and reviewed
Cardiology	3,462	169	98
Ophthalmology – MDH	4,289	188	140
Ophthalmology – Outsourcing	710	40	30
Orthopaedics	3,187	171	87
Surgical	12,957	206	164
Total	**24,605**	**774**	**519**

Source : CPU and NAO.

2.4.8 The main reason that waiting times information was retrieved through the medical files was because the latter are considered as the main source documents. Moreover, medical files should contain all the relative administrative as well as medical information. Furthermore, the FMS Centralised Waiting List System did not yet include the relative information for all the Departments under review.

2.4.9 Table 2 presents the total number of operations carried out by the respective Departments, on the basis of which the sample of 774 cases was randomly selected. However, for various reasons, waiting times data was only available in 519 of these cases. Consequently, the results and conclusions presented in this Section are based on the review of 519 cases.[12]

2.4.10 An analysis of the data retrieved through the 519 medical files shows that 87 of these elective operations (17 per cent) were held after a period of one year from the date that the patient was placed on the waiting list. It transpired that nine of these operations were classified by the respective consultants as high. On the other hand, seven and 58 were prioritised in the medium and normal categories. There was no data available with respect to 13 cases.[13]

2.4.11 The NAO, whenever possible, also analysed these cases on the basis of intervention classification, which is centered on the clinical prerogative by the respective consultants. In this respect, MDH Management holds no authority over the clinical priority assigned to individual cases. Table 3 refers.

Table 3 : Waiting times for elective operations held between 1 April 2011 and 31 March 2012

Waiting times	Priority					Total
	Immediate	High	Medium	Normal	Not Available	
Up to 3 months	9	56	5	15	257	342
Between 3 and 6 months	1	5	1	2	29	38
Between 6 months and 1 year	3	9	3	14	23	52
Over a year	0	9	7	58	13	87
Total	**13**	**79**	**16**	**89**	**322**	**519**

[12] Due to resources availability, the NAO was constrained to the above noted sample size. The ensuing limitation of such a sample size is that in some cases, results related to specific specialities within each department may have higher margin of errors. Nevertheless, for the purpose of this audit, this sample size is considered sufficient to provide robust indications of prevailing waiting times.

[13] Information relating to case prioritisation was retrieved from the FMS system since such data is not maintained in the relevant medical file.

2.4.12 Table 3 also shows that it was only in a minority of instances where high priority surgery was carried out in a period exceeding one year. Further information retrieved by the NAO shows that elective surgery for interventions classified as immediate and high ranged from two days to 221 days and one day to 2,128 days (5.8 years) respectively.

2.4.13 As can be deduced from Table 3, the clinical priority classification of 322 cases was not available. Such scenario materialised since:

- FMS is still in the process of collating data and extending the implementation of the Centralised Waiting List System to the Surgical Department.
- The Centralised Waiting List System does not rank all ophthalmic interventions.

2.4.14 The foregoing analysis shows that around two thirds of operations were held within three months. Most of these cases pertained to the Cardiology and Surgical Departments. However, the relative clinical priority as classified by consultants was not available in 75 per cent (257 out of 342) of these cases. Such circumstances diminish management control over the elective surgery mix relating to respective Departments. Moreover, the absence of clinical classification also raises concerns relating to the transparency of the chronological order within which elective surgery is carried out.

Waiting time inconsistencies exist with respect to the same intervention type

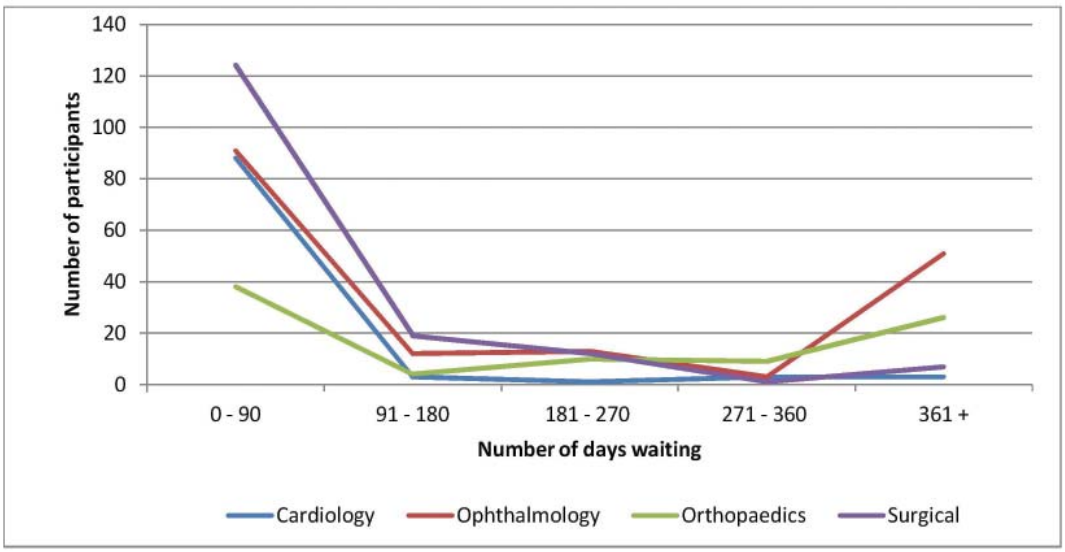
2.4.15 The NAO waiting times analysis was also carried out with respect to the four MDH Departments under review. Such analysis was carried out on the basis of the administrative data retrieved from the 519 medical files. Towards this end, the NAO estimated the average as well as determined the waiting time range for these Departments.

2.4.16 The NAO acknowledges that when analysing waiting times through the above approach poses a number of interpretation limitations. These include that waiting times for different specialities and priorities have been considered collectively. Nevertheless, departmental average times may be indicative of the various clinical demands and work practices of respective Departments.

2.4.17 The average waiting time for the Departments of Orthopaedics, Ophthalmology, Cardiology and Surgical were estimated at 381, 323, 49 and 87 days respectively. These estimates imply that waiting times in the respective Departments under review varied significantly. Figure 4 below presents the range of waiting times at the four Departments under review.

2.4.18 Figure 4 shows that most of the interventions are carried out within one year. There are both clinical and administrative justifications why in certain instances the waiting times for operations appear to have been

Figure 4 : Waiting times for elective surgery undertaken between 1 April 2011 and 31 March 2012 (By Department)



prolonged. Clinical reasons for prolonging an operation date may include that an earlier intervention may not have been in the patient's best interests. Consequently, the resultant waiting time increases. However, the main reasons relate to administrative issues, such as the availability of resources required to carry out interventions. Furthermore, some consultants may have more patients listed on their respective waiting lists than their counterparts. This also prolongs intervention waiting times.

2.4.19 The limitations associated with averaging departmental waiting times on the basis of all interventions carried out have already been outlined in paragraph 2.4.16. To mitigate such limitations the NAO sought to analyse the range of waiting times for specific interventions.

2.4.20 In this regard, further analysis based on knee arthroscopy interventions carried out in July 2012 was undertaken.[14] This intervention type was selected due to the number of persons waiting for such surgery. Towards this end, 31 knee arthroscopy interventions were analysed. It is to be noted that this number of cases could be analysed since priority information with respect to the remaining four knee arthroscopies carried out in July 2012 was not available. This analysis showed that there were intra-departmental inconsistencies in intervention waiting times. In some cases, there were significant differences between the waiting times for similarly prioritised knee arthroscopy surgery within the Department. Table 4 refers.

2.4.21 Table 4 shows the wide range of waiting times for the same intervention within a specific priority categorisation.[15] Admittedly, the number of cases used in this analysis raises issues of statistical representativeness. Moreover, another limitation of this analysis is the 'uniqueness' of each intervention. In order to optimise the reliability of conclusions derived from this exercise, the major focus related to the 20 knee arthroscopies pertaining to the 'normal' priority category.

2.4.22 Eight of these 20 interventions were carried out within one year. Two operations had a waiting time of less than three years whilst the remaining 10 operations had a waiting time of over three years. The resultant standard deviation of these 20 interventions, that is the dispersion that exists from the mean intervention waiting time, was calculated at around 664 days. There are various situations, which contribute to such circumstances:

- Exercise distortions could arise if the relevant 'priority' updates were not duly affected in the Centralised Waiting List System to reflect changes in patient condition over time. However, such a scenario implies a deviation from Hospital policy to post remarks relating to changes in intervention priority. In such cases, the principle of transparency would have been violated.

- Waiting time inconsistencies may have materialised in the absence of policies stipulating maximum intervention time.

- Inconsistencies could further arise due to the number of patients under the care of particular consultants.

- The operation date may be put forward for clinical reasons.

- The wide-ranging intra-departmental waiting times implies that monitoring to ensure consistency in this respect is limited.

Table 4 : Waiting times for Knee Arthroscopy surgery carried out in July 2012

Intervention Priority	Cases	Waiting time range		
		Minimum (days)	Maximum (days)	Average (days)
Normal	20	33	2,456	763.70
Medium	4	74	196	124.25
High	6	1	51	72
Immediate	1	1	1	1

[14] July 2012 was the month selected for the theatre utilisation exercise. For further information relating to the selection of this month for analysis, refer to Chapter 5.

[15] Waiting times were derived from the Central Waiting List System.

Table 5 : Waiting times for 'normal' priority Knee Arthroscopies broken down by consultant (July 2012)

Consultant	Cases	Range	
		Minimum (days)	Maximum (days)
1	9	1,115	1,614
2	4	65	803
3	4	33	93
4	2	392	2,456
5	1	73	73
	20	**33**	**2,456**

2.4.23 Further waiting time inconsistencies resulted when the knee arthroscopy surgery carried out in July 2012 were analysed in terms of the consultant responsible for the surgery. The small number of interventions available for analysis led to severe analysis restrictions due to the dispersion of such cases over five consultants. Nevertheless, some meaningful indicators arise when considering the 20 'normal' interventions performed. Table 5 refers.

2.4.24 Despite the statistical limitations, emanating from the number of cases, which could be reviewed, the wide-ranging waiting times experienced by the patients under the care of the same consultant is clearly evident. The same reasons cited in paragraph 2.4.22 can also be considered as the factors influencing this situation.

2.4.25 Around two thirds of the patients had waited for their elective intervention for less than one year. However, the absence of the clinical priority for all interventions limited the analysis. Furthermore, discrepancies on the clinical priority assigned were noted. In addition, to the care provided at MDH, patients often seek medical advice from the private sector. The next Section will discuss this matter in further detail.

2.5 Although highly satisfied with the services provided, excessive waiting times influenced patients' behaviour with respect to elective surgery

2.5.1 The NAO survey with 774 participants, who had undergone elective surgery between 1 April 2011 and 31 March 2012, showed that patients were highly satisfied with the services provided prior, during and after the operation (detailed survey results are attached at Appendix III). However, this survey coupled with the findings of the tracer study showed that many patients sought private medical advice in parallel to the care being provided by MDH. John Hopkins Medicine International (JHI), the MHEC appointed consultants to review MDH operations, claimed that patients resort to the public – private arrangement since they can see their consultant almost right away.

Patients often seek medical advice from the private sector before their operation

2.5.2 Despite the high satisfaction levels regarding the quality of care provided by MDH, 5,485 out of 24,605 (22 per cent) who had undergone elective surgery during the period under review stated that they were not satisfied with the waiting time for their intervention.[16] This percentage can be considered as reflective of the number patients who waited for a year or longer for elective surgery (vide paragraph 2.4.10).

2.5.3 The NAO survey revealed that around 43 per cent of participants reverted to specialists in the private sector for the same ailment for which they were being cared for at MDH prior to their confinement. This information was derived from two interlinked but mutually exclusive questions where patients were asked why they retained the MDH appointed consultant. In a subsequent question, participants were asked, whether they were private clients of the consultant assigned by the Hospital. Through the extrapolation of the survey results, it transpired that 10,623 different survey participants out of a total of 24,605 replied that they had referred to specialists in the private sector prior to their operation. Table 6 refers.

[16] Refer to Table 8 in Appendix III.

Table 6 : Patients seeking medical care through both MDH and the Private Sector

Department	Q4 - Why did you retain this consultant?		Q6 – Were you already a client of the consultant assigned to you by MDH?	Participants who sought medical care through both the private sector and MDH	Total no. of patients	Participants who referred for medical care through both the private sector and MDH
	A private client of the consultant	Good reputation and a private client	Yes			
	No.	No.	No.	No.	No.	%
Cardiology	41	243	660	944	3,462	27
Ophthalmology – MDH	307	657	1,155	2,119	4,289	49
Ophthalmology – Outsourcing	54	66	105	225	710	32
Orthopaedics	444	613	831	1,888	3,187	59
Surgical	1,450	1,164	2,834	5,447	12,957	42
Sub-total	***2,296***	***2,743***	***5,584***	***10,623***	***24,605***	***43***
Total	**5,039**		**5,584**	**10,623**	**24,605**	**43**

Source : NAO Survey (Refer to Tables 4c and 6c in Appendix III).

2.5.4 Table 6 shows that the highest percentage of patients seeking private medical care in parallel to treatment provided by MDH prior to elective surgery pertained to the Orthopaedics Department. Similarly nearly half of the ophthalmic patients and over two fifths of the Surgical Department patients referred to the private sector at the same time that they were being treated at MDH.

2.5.5 Moreover, the NAO survey revealed that 204 patients out of the 10,623 (two per cent) who visited their MDH consultant both at the Hospital and at a private clinic made at least another subsequent visit prior to their intervention.

2.5.6 Such circumstances raise a number of issues:

- Specific cases may need continuous monitoring of patient condition prior to the intervention.
- Excessive waiting times may lead patients to seek further medical care due to their deteriorating condition.

2.5.7 In cases where the intervention date is prolonged, both the hospital and the patient incur significant costs. The Hospital may incur costs with additional diagnostic tests outpatients clinic and treatment which would have been avoided had the intervention been carried out earlier. Additionally, patients who opt to seek private care incur the relative expenses with treatment to alleviate the inconvenience related to their condition.

Prolonged waiting times led patients to consider the possibilities of the intervention being performed in the private sector

2.5.8 The NAO survey showed that prolonged waiting times prompted information exchange between patients and their consultants regarding the possibilities of the intervention being performed in the private sector. In seven per cent (1,619) of cases, NAO survey participants noted that consultants either privately or when visited at MDH outlined the possibility that the intervention can be carried out through the private sector.

Table 7 : Patients informed of the possibility of undertaking the intervention privately

Department	Yes, option offered but rejected	Total patients	Yes, option offered but rejected
	No.	No.	%
Cardiology	136	3,462	4
Ophthalmology	276	4,289	6
Orthopaedics	238	3,187	7
Surgical	969	12,957	7
Total	**1,619**	**23,895**	**7**

Source : NAO survey.[17]

2.5.9 However, in reality, this figure could be much higher since the NAO survey did not target participants who undergone operations in the private sector. Nevertheless, the survey results provide a reliable indicator relating to patients' attitudes towards the provision of healthcare. Table 7 refers.

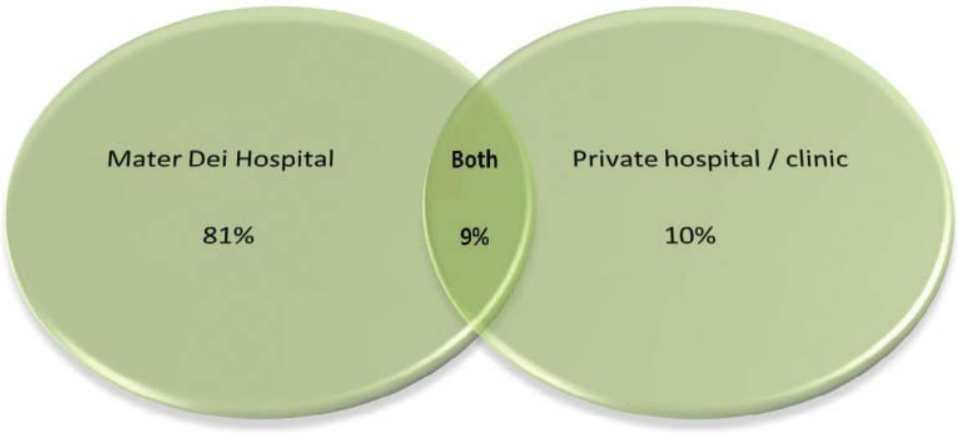
2.5.10 Table 7 shows that the seven per cent of the survey participants who were informed about the possibility of undertaking the operation privately were generally equally spread across the Ophthalmic, Orthopaedics and Surgical Departments. This phenomenon occurred irrespective of elective surgery waiting times in these Departments. Conversely, Cardiology patients were given similar 'private sector' information in around four per cent of cases.

Around one fifth of the patients opted to seek private medical advice following their operation at MDH

2.5.11 Most patients visited their consultants at MDH or privately following their intervention. The NAO survey revealed that 20,080 out of the 24,605 (82 per cent) who had an intervention at MDH visited the consultant either at MDH or at a private clinic after the operation. Of these, 81 per cent (16,309) visited their consultant at MDH, while around 10 per cent (1,911) visited the consultant at a private clinic or Hospital. Another nine per cent (1,860) made their post-operation visits both at the public and private Hospital. Figure 5 refers.

2.5.12 The aforementioned diagram illustrates that 19 per cent of the patients sought medical advice from

Figure 5 : Patients who visited their consultants after the operation at MDH, a private clinic or both



Source : NAO survey.

[17] Outsourcing patients were excluded from this question due to risk of distortions in potential replies.

the private sector. Such a scenario materialises even though the patients have carried out their intervention at MDH and they have to incur additional costs to visit the consultant privately.

2.5.13 The discussion outlined in this Section showed that many patients utilised the services of both MDH and the private sector simultaneously. In most cases, such practices were predominantly evident prior to the elective intervention. To a lesser extent, patients also visited consultants privately following the operation. The parallel utilisation of the public and private provision illustrates the high priority allocated to healthcare by surgery participants.

Patients' continuous oscillation between public and private healthcare influence Hospital administrative processes

2.5.14 The NAO sought to determine the extent to which the continuous oscillation of patients between public and private healthcare influenced MDH's elective surgery administrative processes. Towards, this end the NAO delved deeper into 30 randomly selected cases, which were reviewed as part of the tracer study discussed in Section 2.4. This exercise also solicited an interpretation of the administrative process involved from a medical perspective. For this purpose, MDH assigned a senior and experienced member of staff to assist the audit team in the review of the sampled files.

2.5.15 All 30 cases reviewed, to varying degrees, showed some deviation from MDH's administrative procedures. However, this exercise highlighted three clear examples where there were diversions from the Hospital's administrative procedures. The MDH appointed staff member who assisted the NAO team pointed out that in these cases it is plausible to assume that the patient had visited the consultant privately.

2.5.16 This assertion considered that in these three cases, the referral ticket from a medical professional (either from the public or private sector) was not found in the respective medical file. In these cases, the ticket was required since this was a first-time referral in relation to the condition being treated. Moreover, there was no information relating to outpatients visits in either the medical file or the Patients' Administrative System (PAS). The absence of a referral ticket results in severing the relative administrative audit trail. In these cases there were no records of who referred the patient to MDH, and when the patient was included in the outpatients' and/or diagnostic tests waiting lists. The only records relating to the ensuing interventions relate to the date when the patient was included in the waiting list for elective surgery and the date of the actual operation.

MDH work practices facilitate medical professionals to work within both the public and private sectors

2.5.17 The public–private interrelationship gives rise to various issues associated with prolonged waiting times for elective surgery, namely relating to patients' attitudes to healthcare and market considerations. It seems that the long waiting time for MDH services drove participants to private practices, where they can see the same consultants almost right away – a view which was also expressed by the "System Review and Needs Assessment" report by John Hopkins Medicine International (JHI) delivered to MHEC in 2012. The same report also highlighted how market considerations influence the various MDH processes related to elective surgery.

2.5.18 Both sectors mainly utilise the same pool of resources. It is widely acknowledged that the private sector tends to offer a more attractive remuneration package than the public sector. Consequently, and as pointed out in the JHI report, the majority of consultants choose to work part-time (Contract B) at the Hospital, to be able to retain their private practice where remuneration is better than that offered by MDH. The public-private arrangement relating to the cataract outsourcing programmes further highlights the interrelationship between the two sectors. These outsourced operations were mainly carried by the same consultants employed on part-time contract basis by MDH.[18]

2.6 Conclusions

2.6.1 This Chapter sought to provide a situation analysis of the prevailing status of waiting lists and times for elective surgery within the four Departments under review. Various methodological approaches adopted by the NAO showed that patients were highly satisfied with the quality of the services related to elective operations

[18] Chapter 3 of this Report discusses in detail the cost-effectiveness associated with the cataract outsourcing programme.

delivered. On the other hand, it was identified that nearly a fifth of patients waited for over one year for their elective operation.

2.6.2 There are a number of issues influencing the demand for elective surgery, ranging from the needs associated with an ageing population and the appeal associated with a highly equipped and reputable hospital. Through enhanced work practices, a better Hospital operating theatres infrastructure and the introduction of Public-Private Partnerships in various specialisations, the elective surgery throughput increased considerably over the years. Nevertheless, waiting times of over one year are not uncommon, particularly with respect to the Ophthalmic and Orthopaedics Departments. Ageing related conditions largely influence the demand for elective surgery in these two Departments.

2.6.3 Although the NAO found no evidence that urgent cases were not allocated their due priority, MHEC and MDH have not yet implemented policies relating to maximum waiting times for respective intervention categories. The process of adopting waiting time benchmarks is still on-going. This state of affairs affected both MDH's planning and surgery prioritisation processes as well as the availability of information to patients. The latter limits patients' from making fully informed decisions when evaluating the various medical care alternatives available to them at the different stages of their treatment at both MDH and the private sector.

2.6.4 This Chapter also reviewed the key role of private medical care. Over time, there has always been a significant demand for private care. However, the private sector is mainly served by the same pool of MDH's consultants. These circumstances to varying degrees influenced the modus operandi of the Hospital. The forgoing is not implying in any way that both systems should not be complementary to each other.

2.6.5 This Chapter has also revealed a number of concerns impinging on waiting lists management. These included, amongst others, fragmented information management, which is seriously diminishing management control over the elective surgery process. The ensuing Chapter will discuss the measures undertaken by MHEC and MDH to counter the increase in the demand for elective surgery.

Chapter 3

Initiatives to reduce waiting lists and times

Chapter 3 – Initiatives to reduce waiting lists and times

3.1 Introduction

3.1.1 Over the years, the Ministry for Health, Elderly, and Community Care (MHEC) and Mater Dei Hospital (MDH) took several initiatives to reduce waiting lists and times. Towards this end, the number of elective operations carried out increased by around 35 per cent from the total number of operations, which were performed in 2006 at St. Luke's Hospital (SLH). Moreover, an *ad-hoc* Waiting List Fund was created in 2010. Up to December 2012, following revisions, around €6 million were budgeted. However, this audit observed a number of issues, which to varying degrees, limited the effectiveness of such expenditure.

3.1.2 This Chapter aims to discuss:

- the various initiatives and their impact on waiting lists and times;
- the management of the Waiting List Fund; and
- outsourcing measures to increase the level of throughput for particular interventions.

3.2 Several initiatives were undertaken to increase the number of elective operations

3.2.1 Since the move from SLH to MDH various efforts were directed towards increasing the number of operations, including elective surgery in order to meet the ever increasing patient demand. The number of elective surgery undertaken increased by around 35 per cent from 28,223 in 2006 to 38,165 in 2012. Figure 6 refers.

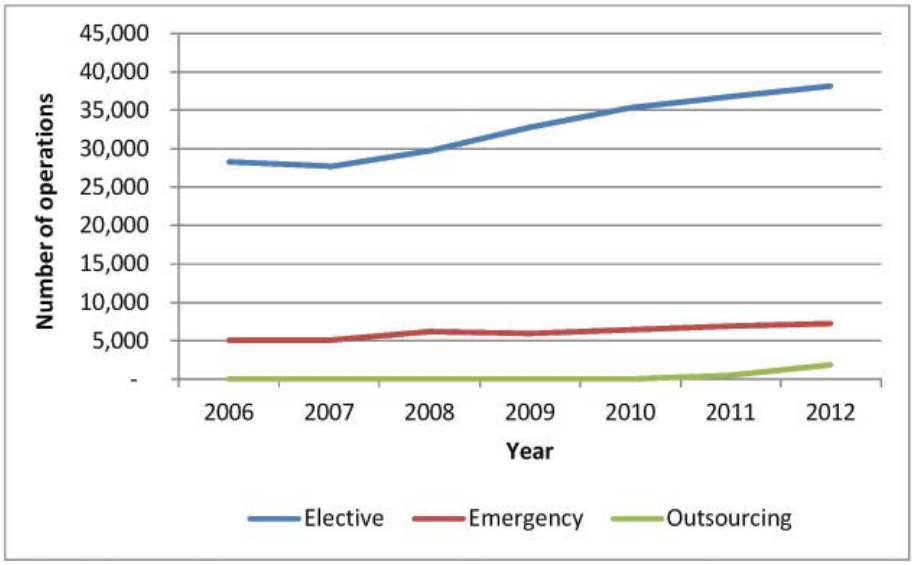
3.2.2 Figure 6 shows that there is an increasing trend in both emergency and elective interventions. There were annual percentage upward trends leading to an overall increase of 44 and 35 per cent respectively. A number of factors contribute to the significant rise in the number of operations.

3.2.3 As at end 2012, MDH was utilising 34 operating theatres. These comprised 20 Main theatres and six Endoscopy rooms. Additionally, MDH houses a further eight theatres which are utilised by the Accident and Emergency as well as other specialisations. The number of operating theatres at MDH contrasts with the 12, which were available at SLH.

3.2.4 In order to optimise the operating theatre availability at MDH, various work practices prevailing at SLH had to be revised. In accordance with measures outlined in the Collective Agreement negotiated between the Government and Medical Association of Malta (MAM), these measures included extra consultant sessions and increased flexibility to improve the utilisation rate of operating theatres as well as other care services provided, such as outpatients. This initiative had to be complemented with the relative changes in work practices of other professionals, namely anaesthetists and nurses. Furthermore, it is envisaged that as from July 2013, MDH plans to allocate extra outpatients and operating theatre sessions to resident specialists in line with the recently agreed Collective Agreement.

3.2.5 Over the years, MHEC and MDH Management implemented a number of measures aimed at increasing and monitoring consultants' performance. These initiatives mainly centred around the introduction of consultants' job plans, which aimed to set out the relative

Figure 6 : Number of interventions (2006 to 2012)



Source : MHEC and MDH Surgical Operations / Interventions at Operating Theatres reports (2006 – 2012).

contractual responsibilities. The introduction of job plans was not only seen as a management tool with the prime intention of strengthening the Hospital's planning functions but also to increase consultants' productivity and accountability. Recently MDH has drafted plans to strengthen further the consultants' job plans by ensuring that performance targets are more clearly outlined.

3.2.6 Furthermore, MDH Management continuously monitors operating theatre throughput. This entails minimising the number of cancelled operations, motivating consultants to increase the number of interventions with the available resources as well as, where and whenever possible, to work additional operating theatre sessions.

3.2.7 The above efforts were not sufficient to meet the ever-increasing demand for the Hospital's services relating to operations. In order to address problems of escalating waiting times in certain specialities, Budget 2010 and subsequent budgets specifically allocated funds to reduce waiting lists.

The potential benefits associated with the Waiting List Fund were not fully attained

3.2.8 In the budget speech for financial year 2010, Government expressed its intention to allocate absolute priority to the reduction of the Hospital's waiting lists to acceptable levels within three years. This led to substantial allocation of funds through the 'Waiting List' budget line within Vote 26 of Social Policy (Health).[19] The broad strategic objective of reducing waiting lists to acceptable levels, however, was not appropriately defined.

3.2.9 Internal policies defining which waiting lists across all of the Government funded health services were to benefit from the Waiting List Fund were not in place. This Fund was utilised to reduce waiting lists across the publicly provided health system. Various MDH Departments benefitted from this Fund, including the Accident and Emergency. Other beneficiaries included the Department of Primary Healthcare. This audit was only concerned with expenditure relating to reducing the waiting times of elective surgery at MDH.

3.2.10 As mentioned in the previous Chapter, MHEC and MDH do not have internal policies establishing waiting times benchmarks since these are still in the process of being formally adopted. Consequently, the management of this Fund could not be guided by formal operational targets. In the absence of such targets, an objective evaluation of whether the Waiting List Fund was reducing waiting lists to acceptable levels cannot be fully undertaken.

[19] Budget estimates 2010 available from http://finance.gov.mt/image.aspx?site=MFIN&type=estimate&ref=657.

3.2.11 This audit, however, has revealed that expenditure from the Waiting List Fund has delivered mixed results. On the one hand, effective action to address waiting time issues in some Departments, such as cataracts and knee arthroscopies led to a significant increase in the number of interventions carried out. Likewise, other initiatives to reduce the waiting time for diagnostic tests, such as Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET) Scans, also led to an increase of the relative throughputs. Consequently, the availability of diagnostic test results also meant that the patient could be referred for elective surgery in a shorter waiting time.

3.2.12 Conversely, as at mid-April 2013, 3,534 Orthopaedics and 942 Ophthalmic patients have been waiting for elective surgery for more than one year. If reasonable waiting time for elective surgery is to be considered as one year, then despite its significant contribution, expenditure from the Waiting List Fund did not fully manage to reduce the waiting time for elective surgery across all specialties. It is acknowledged that the Waiting List Fund, as a sole initiative, could not be expected to resolve all the waiting time related issues. Nevertheless, this audit revealed a number of issues, which limited, to varying extent, the effective utility of this Fund.

3.3 Considerable funds directed towards the reduction of waiting lists and times remained unutilised

3.3.1 The three national budgets relating to financial years 2010 to 2012, allocated €8.9 million to the Waiting List Fund. However, since significant funds remained unutilised, the Ministry responsible for Finance reduced the allocation by around 32 per cent to approximately €6 million. Table 8 shows the funds, which were originally allocated, and the subsequent budgetary revisions as well as actual expenditure.

3.3.2 The low utilisation rate of funds was particularly evident in 2010, where only around four per cent of the original allocation was utilised, that is €167,001. This

Table 8 : Budget allocations and expenditures relating to the Waiting List Fund (2010 to 2012)

Year	Original Balance €	Revised Balance €	Expenditure €	Remaining balance €
2010	4,000,000	1,250,000	167,001	1,082,999
2011	2,300,000	2,300,000	2,289,384	10,616
2012	2,600,000	2,500,000	2,284,010	215,990
Total	**8,900,000**	**6,050,000**	**4,740,395**	**1,309,605**

Source : Ministry for Health (MfH).

expenditure related to personal emoluments 36 per cent (€60,824), operating materials and supplies 60 per cent (€100,086) and contractual services four per cent (€6,091).

3.3.3 In 2011, expenditure amounted to around €2.3 million. This implies that 99.5 per cent (€2,289,384) of the allocated funds were expended. This expenditure mainly related to a number of outsourcing initiatives (34 per cent), which invoked private sector input to address waiting lists related issues. Towards this end, complementary expenditure relating to consumables, which were to be utilised during the outsourced interventions, amounted to 23 per cent of the total expenditure. Additionally, there was expenditure related to a part payment to John Hopkins Medicine International (JHI) who were commissioned to deliver the report entitled, "System review and Needs Assessment". The final report was delivered in 2012. The cost of this exercise, exclusive of VAT, amounted to $1,143,425 (€919,267).[20]

3.3.4 During 2012, around 91 per cent (€2,284,010) of the allocated budget was expended. Most of this expenditure was incurred with respect to contractual obligations for the outsourced interventions and respective consumables. However, over €300,000[21] was deemed to be expended on non-waiting-list payments since the Hospital's Financial Unit claimed that funds from MDH's budget were not sufficient to meet daily operational expenses, and consequently expenditure was committed from the Waiting List Fund. MHEC did not accept this situation and took remedial action in this regard.

3.4 Outsourcing agreements with the private sector, to varying degrees, alleviated waiting lists and times concerns

3.4.1 As stated in the Budget Speech for financial year 2010, Government declared its commitment to reduce waiting times to reasonable levels. This statement of policy was operationalised by MHEC on the principle that all patients on waiting lists are to be considered patients of the public healthcare system throughout the whole process and for follow-up or any other requested service available at public Hospital.

3.4.2 In this light MHEC entered into Public-Private Partnerships (PPP) with respect to a number of diagnostic procedures and interventions. A board chaired by the Permanent Secretary MHEC was established to monitor the PPP programmes. The other members in this Board included Director General Finance, Chief Medical Officer and Director Healthcare Funding.

3.4.3 Since this audit was primarily concerned with elective surgery, the National Audit Office (NAO) sought to determine the impact of outsourcing on cataract operations. Although during the period 2010 to 2012

[20] Information received from MfH on 8 May 2013.

[21] Ibid.

MDH managed to increase the throughput of cataract operations performed in its theatres by eight per cent to 2,564, this positive trend still proved insufficient to meet the demand for these operations. As a result, substantial number of persons remained waiting for their operation for a significant period. Consequently, the outsourcing programme was resorted to in order to address the inherent waiting time issues. Figure 7 refers.

3.4.4 Figure 7 illustrates that 2,052 cataract operations were carried out through the outsourcing programme during the period August 2011 to December 2012. The increased throughput through both MDH's efforts and the PPP scheme led to a decrease in the number of patients waiting for this type of intervention from 4,673 in August 2011 to 2,859 in December 2012.

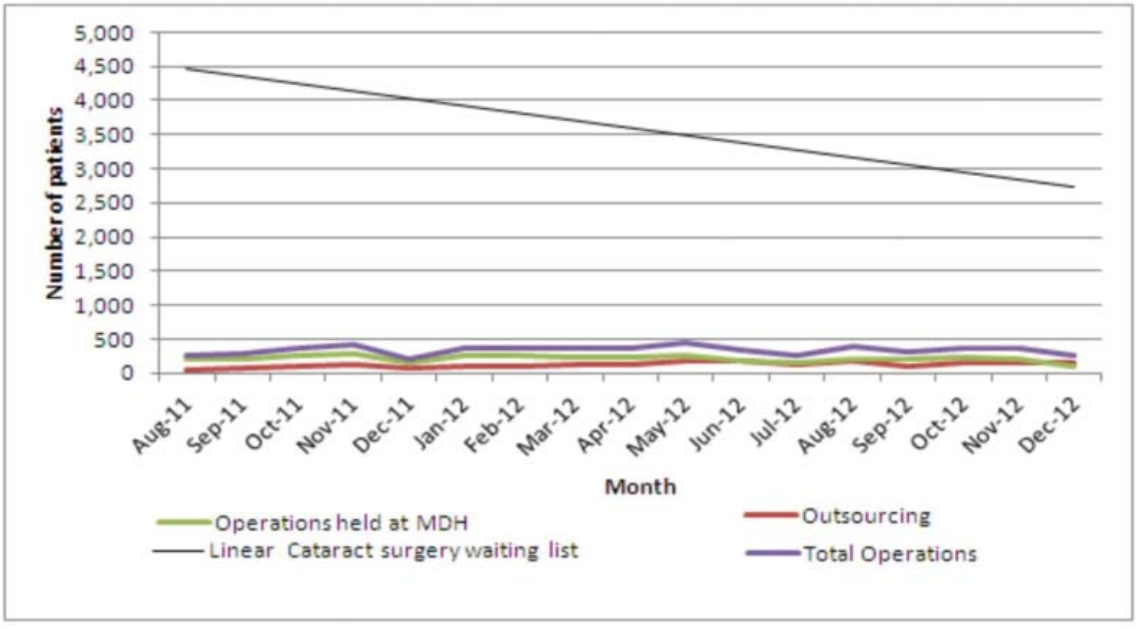
3.4.5 The patients who had undergone cataract interventions through the PPP scheme were generally those who had been listed on the waiting list for the longest period. The tracer study carried out by the NAO (vide paragraph 1.5.4) revealed that, the 30 randomly selected patients had been waiting for surgery for an average of 896 days.

3.4.6 A comparison between average waiting time between March 2012 and mid-April 2013 revealed that the 3,510 patients listed on the Cataract waiting list as at end of March 2012, had been waiting for the intervention for an average of 739 days. Waiting times for the 3,307 patients listed on the same waiting list as at mid-April 2013 decreased to 342 days. This clearly illustrates the positive impact in reducing waiting times for persons who are still to undergo the cataract operation.

3.4.7 Despite the positive outcomes, it is felt that the financial considerations associated with this programme were not fully evaluated. This performance audit revealed that:

i. Evaluations carried out to determine the financial feasibility of the outsourcing programme could not reliably take into consideration the cost per intervention at MDH. Such a situation materialised since an MHEC commissioned study carried out in 2009 to determine the average cost of MDH activities, including cataract operations, was not updated to reflect current circumstances.

Figure 7 : Impact of the outsourcing programme on the cataract surgery waiting list



Source : MHEC, Surgical Operations Register, MDH and Centralised Waiting List System.[22]

[22] Due to the limited monthly information relating to the number of patients included on the waiting list of cataract surgery, a linear trend based on the months available was plotted.

ii. These evaluations excluded the feasibility of increasing throughput at MDH. The NAO was informed that this scenario could not be considered, as MDH consultants, at the outset, did not offer their disposition to further increase their operating theatre sessions. Moreover, the feasibility of increasing throughput at MDH was not considered for evaluation purposes.

iii. A proposal to establish a cooperative to increase throughput by utilising MDH's infrastructure as well as equipment, and managed by the ophthalmic medical team was rejected by MHEC.

3.4.8 Despite the above concerns, there is clear evidence about the validity of PPP schemes. The issues presented in this Section with respect to the outsourcing of cataract surgery are considered to apply to other PPP schemes undertaken by MHEC, such as knee arthroscopies. The importance of addressing the issues discussed in this Section potentially assumes greater importance in light of the role of PPPs with respect to reducing intervention waiting times as well as the provisions of the Cross Border Health Directive.

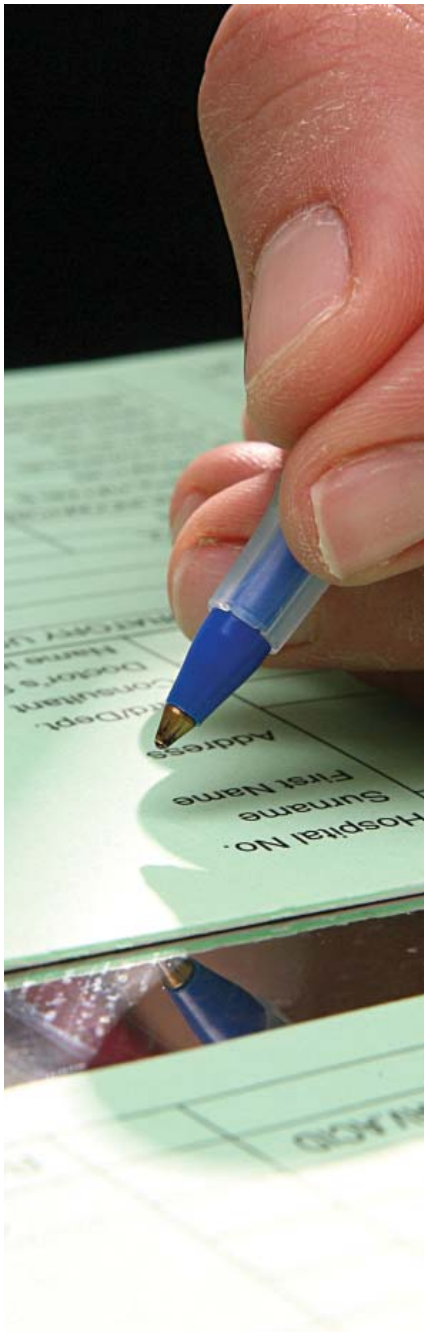
3.5 Conclusions

3.5.1 This Chapter has discussed efforts by MHEC and MDH to reduce the intervention waiting times to 'reasonable' levels. The number of patients who benefited from these initiatives increased considerably over the years. A number of these initiatives were funded through Government's allocation of around €8.83 million. This audit, however, has shown that the opportunity existed for exploiting more benefits from these funds.

3.5.2 Among the initiatives undertaken was the increased throughput in the number of interventions carried out at MDH. Over a period of six years, the number of operations performed at the Hospital increased by 35 per cent. Moreover, PPP schemes also alleviated waiting times related concerns with respect to various interventions. These outsourcing programmes also contributed towards a more expedient process of highly demanded diagnostic procedures. These procedures were deemed a major factor, in contributing to increased intervention waiting times.

3.5.3 The cost of outsourcing healthcare services further stretches scarce financial resources. In the short-term PPPs have and continue to serve in alleviating current waiting time concerns. In the medium and the long-term, the potential for further collaborations with the private sector exist. However, as discussed in this Chapter these have to be evaluated against various other possibilities, such as further utilising the current resources available at MDH.

3.5.4 On a number of occasions, this Chapter highlighted how the lack of readily available information hindered more in-depth analysis with respect to waiting lists management. The next Chapter of this Report will discuss these issues in the context of management information systems at MDH.



Chapter 4

Management information systems

Chapter 4 – Management information systems

4.1 Introduction

4.1.1 This performance audit has identified various management information weaknesses with respect to elective surgery. These limitations have negatively impacted on Mater Dei Hospital's (MDH) governance. The management information weaknesses mainly emanate from a general absence of waiting lists management policies defining the circumstance when people can be listed on operating waiting lists, the maximum waiting time for intervention and related policies citing the various procedures of elective surgery. Additionally, management information weaknesses arise from the fragmentation of data dealing with the administrative and medical status of patients. Furthermore, MDH lacks the software to integrate the various stand-alone data sets and the complimentary analysis tools to facilitate Hospital governance. In these circumstances, governance is weakened since the adequate level of management functions namely related to planning, direction and control cannot be appropriately executed. This situation subsequently diminishes accountability, as well as transparency and raises issues related to Hospital efficiency.

4.1.2 This Chapter aims to present the issues contributing to the situations described in the preceding paragraph. For this purpose, the ensuing Sections of this Chapter will discuss:

- the potential benefits of a robust management information system;
- the limitations related to data collation at the critical stages of the elective surgery processes; and
- the weakening of management control due to data fragmentation.

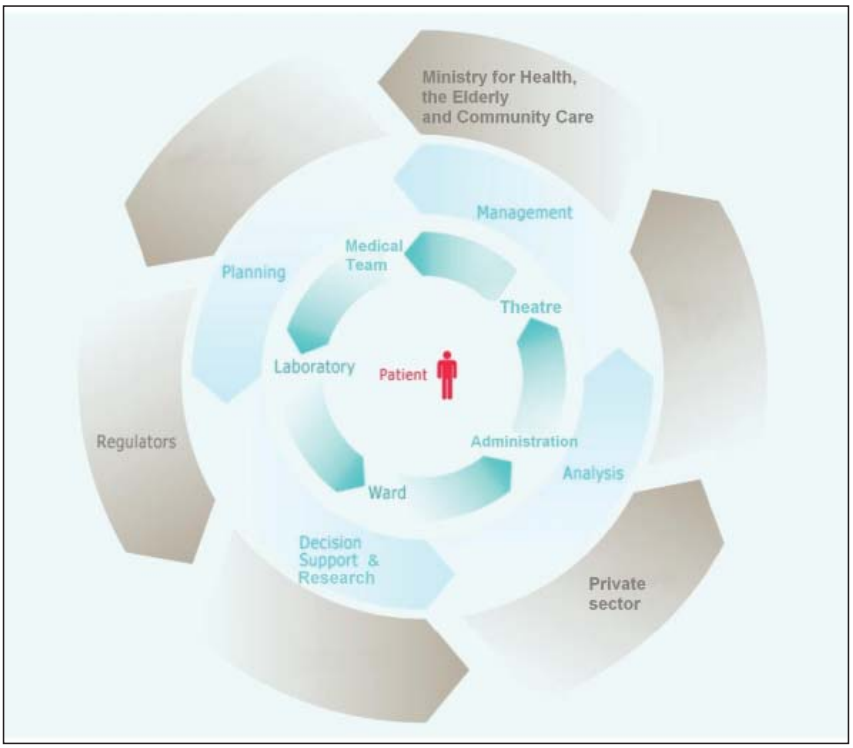
4.2 A robust hospital MIS facilitates management control over elective surgery

4.2.1 A Management Information System (MIS) aids hospital management to significantly improve operational control and streamline operations. Furthermore, a patient centric MIS, aims to automate the process of collecting, collating, retrieving and analysing patient information. Hence, holistic patient information improves information related diagnoses and treatments offered as well as facilitates hospital management.

4.2.2 The availability of robust management information will ultimately improve the efficiency of processes associated with elective surgery. Such possibilities result since the relevant up-to-date information is available in real time. Figure 8 refers.

4.2.3 Figure 8 illustrates that a robust MIS provides an automated flow of patient information. Consequently, hospital will be in a better position to serve their patients more efficiently and possibly in a more cost-effective manner.

Figure 8 : The key stakeholders and functions involved in an integrated hospital management information system



Source : Adapted from Quintegra (2006).

4.2.4 The next Sections of this Chapter, discuss the various issues, which are considered to weaken information systems and consequently diminish management control over elective surgery.

4.3 Data collation at critical stages of the elective surgery process is subject to varying levels of limitations

4.3.1 Throughout this performance audit, the National Audit Office (NAO) utilised data from four major sources, namely from medical files, the Patient Administrative System (PAS), Centralised Waiting List System and the Surgical Operations Register. Most of these data sources are based on respective departmental initiatives to maintain their own administrative and medical records. An outline of the main functions of these systems is presented below:

- **Medical file -** This contains all the information related to the patients' medical history. Pink folders are created to separate the information pertaining to one intervention from the other.
- **Patient Administrative System (PAS)** - This system outlines the dates when the patient visited any Department within the Hospital. It also records the consultant visited.
- **Centralised Waiting List System (operations)** - This system records the dates and main information related to surgery. These include the registration date on the waiting list, the assigned intervention priority, the operation date, and the responsible consultant. This system also records the intervention status.
- **Surgical Operations Register** - This provides information relating to all interventions carried out in the respective theatres at MDH. Information includes the type of intervention, the consultant and the medical professionals carrying out the intervention. This system also records other administrative data connected with the operation.

Medical files appropriately incorporate the patients' medical history but in some cases the recording of administrative information is not standardised or duly updated

4.3.2 Medical files contain medical and administrative history of the patient. In some instances, files may encompass a number of volumes. The Medical Records Department is responsible for the administration of these files that is their storage, movement and their proper maintenance. Medical specialists, on the other hand update all the documentation maintained within these files. The medical file is forwarded to the respective professional for patient history reference and updating purposes. During the NAO undertaking of the tracer study, the following issues emerged:

- Due to their frequent use, in a few instances the physical condition of these files has deteriorated. Such a condition increases the risk of the loss of documentation maintained within it.

- Documentation related to specific interventions are not always maintained in their respective folder within the file. This results in documentation not being chronologically filed.

- Standard templates, relating to the administrative matters regarding elective surgery, are not always completed. In some of these circumstances, the administrative audit trail is severed and consequently, any further analysis would not be possible. An example in this regard relates to instances of non-documentation in the medical files' continuation sheet of the patient's inclusion in the elective surgery waiting list. Such information is not maintained yet in the Centralised Waiting List System for all Departments. Consequently, the waiting list audit trail is severed.

The PAS does not link Hospital visits and tests to patient condition and specific interventions

4.3.3 The primary function of the PAS is to provide information relating to Hospital visits and diagnostic tests undertaken by the patient. The PAS complements the medical information maintained in the medical file. However, such an objective is not always fully attained since this system does not link the outpatients' movements and inpatients' information to specific patient condition. Moreover, the PAS does not include information relating to outsourced tests and interventions.

The introduction of the Centralised Waiting List System is a pre-requisite to further enhance the management control over elective surgery processes

4.3.4 The main aim of the Centralised Waiting List System was to transfer the ownership of waiting lists from consultants to MDH Management. The situation until 2009 was such that MDH did not support a single waiting list dataset. Data related to patients was held directly by individual consultants, and was neither homogeneous in format nor centrally accessible by the Hospital's Management. The absence of a consolidated system rendered the provision of accurate and independently

verifiable waiting list information a very difficult activity. Moreover, this system did not encourage transparency and management oversight.

4.3.5 The manual system in use at the time limited the availability of qualitative management information and consequently impinged on MDH's direction and control over the elective interventions processes. The manual system encouraged the various Hospital Departments and consultants to adopt different administrative procedures relating to their respective lists. This situation led to data distortions. Such cases were particularly evident with respect to waiting lists pertaining to the Ophthalmic and Surgical Departments. For example, prior to the introduction of the Centralised Waiting List System, the Ophthalmic and the Surgical Departments, did not consider that the patient is still wait listed once an appointment for his intervention has been set.

4.3.6 The absence of reliable and comprehensive computerised waiting lists also limited Management's strategic direction. In the circumstances, MDH Management could not develop waiting list policies, such as waiting times for particular interventions, since their implications could not be effectively assessed.

4.3.7 The lack of a robust electronic waiting list system also impinged on the logistical and operational element of waiting lists management, and affected most of the processes related to elective surgery. This included operating theatre and intervention mix planning, the allocation of cases to consultants, procurement of medical supplies, and staff deployment.

4.3.8 In 2009, the Foundation for Medical Services (FMS) recommended to Government that the situation portrayed in this Section needed to be addressed immediately, such that data relating to elective interventions is rendered more visible for management and control purposes. Towards this end, a report published by the Ombudsman in 2008 provided the impetus for the implementation of a transparent system for the management of waiting lists across state hospitals in Malta.

4.3.9 To date, the FMS has computerised the waiting lists of the four major Departments, namely Cardiology, Ophthalmic, Orthopaedics and Surgical. These four Departments were considered to be the most problematic in terms of waiting time for elective interventions. Due to its complexities, the computerisation of waiting lists pertaining to these Departments was a considerably lengthy process. The last of these Departments to be computerised, Surgical, went live in April 2013. Nevertheless, data validation with respect to waiting list data pertaining to this Department is still ongoing.

4.3.10 The computerisation of waiting lists was rendered more laborious since this exercise extended beyond the normal processes associated with software development. The major difficulties were related to waiting list data capture and verification. Towards this end, the data collated through various sources, had to be subjected to data integrity checks. These checks entailed verification of facts with the relevant medical file and, in many cases, entailed direct communication with the patient. The FMS had to resort to such action since the waiting list data imported from consultants' diaries and departmental systems did not always provide the

required information, such as the date when the patient was added to the relative waiting list.

4.3.11 This process resulted in a significant number of persons being eliminated from the respective waiting lists. The reasons for such elimination included but were not limited to:

i. persons who actually had their operation performed at MDH but still appeared as an active waiting list subject;

ii. patients' voluntary requests for removal from the respective waiting list;

iii. asymptomatic persons;

iv. persons who had their intervention performed in the private sector;

v. patients who were listed for the same operation with different consultants; and

vi. persons who had since passed away.

4.3.12 Apart from strengthening the waiting lists management function, the Centralised Waiting List System also constitutes a paradigm shift in the way waiting lists are viewed. The emphasis has shifted to waiting times rather than simply having people on a waiting list. Despite the progress attained to date, the System's potential cannot yet be fully realised due to the following:

i. The computerisation of waiting lists is an ongoing process. In various cases, the respective validation of data inputted is still in progress.

ii. Furthermore, the NAO observed variances between the Centralised Waiting List System and the medical files regarding the date that the patient was registered on the relevant waiting list. Such issues emerged from the data collation exercises undertaken by the NAO to determine the waiting times of elective surgery through a sample of 774 across the four Departments under review. In 65 out of 120 of these cases, variances of more than 30 days in the operation registration date (that is, the patient being included in the waiting list) resulted. Following discussions with FMS, such variances were attributed to:

- posting delays in either the Centralised Waiting List System or the medical file.

- judgemental interpretation of the source data during the data entry and validation processes for the Centralised Waiting List System.

iii. Some minor ophthalmic interventions are not included in the Centralised Waiting List System.

iv. MDH do not have formal surgery prioritisation policies or guidelines. The Departments, which are already computerised, are to varying degrees utilising the criteria established in connection with the Centralised Waiting List System. However, not all consultants complete the required information relating to surgery prioritisation as required by this System. Consequently, information in this System is rendered incomplete to the detriment of comprehensive management information as well as accountability and transparency issues associated with waiting lists management.

v. During the course of this audit, it was also observed that there was an absence of formal internal protocols relating to the maximum operation waiting time for each priority classification (that is: immediate, high, medium and normal). The lack of these internal guidelines potentially leads to subjective interpretation of such rankings by different consultants, even with respect to similar interventions.

4.3.13 The above limitations, to varying degrees, prohibited MDH Management from being provided with more qualitative elective surgery related data. Nevertheless, the progress registered to date to computerise the Hospital's waiting lists for elective surgery is seen as a pre-requisite to further enhance the management and delivery of operations.

Operating theatre data evaluation is limited since only basic software is used for analysis

4.3.14 MDH documents data emanating from the operations carried out in its theatres. This data is maintained in manual and electronic format. The former, relates to manually maintained registers, which the Hospital's consultants are obliged to complete and endorse. The registers, held in each operating theatre, lists

operations carried out as well as supporting information relating to patients, interventions, paramedics and administrative information. The electronic format reflects the same information logged in the manual theatre registers. Data entry personnel post the manually held records into the electronic spreadsheet.

4.3.15 The operating theatres' records ensure accountability and provide a valuable source of data, which enables the monitoring of theatre output. Towards this end, MDH Management can gauge theatre efficiency. Moreover, these records can serve as inputs for theatre utilisation rates analysis.

4.3.16 However, MDH utilises only a commercially available spreadsheet to analyse the theatre data. This software package does not enable customised management information reports to be generated. Moreover, this software lacks in-built data validation processes and security features including audit trails.

4.3.17 The absence of automated validation checks has an impact on the quality of data recorded, and its subsequent analysis. For instance, typing errors, which occur when posting data on the electronic system, impinge on the level of accuracy of the analysis undertaken. Moreover, posting errors, such as the non-inclusion of data are not immediately flagged by the system to the detriment of more accurate analysis.

4.3.18 The data recorded in the Surgical Operations Register is only limited to the actual intervention. This dataset excludes information related to other key operating theatre performance indicators, such as those relating to the administration of anaesthesia and the transfer of patients from the ward to the Holding Bay.

The lack of information derived from daily intervention lists diminishes management control over elective surgery

4.3.19 Nursing Officers compile the daily intervention lists. These lists are compiled on an electronic spreadsheet and are, generally, drawn up two to three days in advance. These consultant based lists are circulated to all the parties involved in the operating theatres as well as MDH Management. However, the process of compiling and updating the daily intervention lists is subject to a number of limitations, which diminish their utility as planning and management control tools.

4.3.20 Due to a significant number of patient 'no-shows' and operation cancellations (mostly for medical reasons), the daily intervention list has to be considerably updated to include additional patients as replacements. However, the updating of the daily intervention lists is a rudimentary process involving the manual deletions and additions of patients. In the majority of these cases there is no audit trail indicating who has updated the daily list. Moreover, in certain instances – particularly when updating is carried out close to the time of the intervention MDH Management may not be informed of these updates.

4.3.21 The NAO reviewed the daily intervention lists pertaining to July 2012. This month was reviewed since it ranked among the period with the highest number of operations. During this month, 1,937 elective interventions were carried out in MDH's main theatres.[23] The analysis of the daily intervention lists reveals the resultant variances between the original daily intervention lists and the actual interventions performed. Table 9 refers.

4.3.22 Table 9 shows the continuous changes in the daily intervention lists. Most of these changes emanate through patient 'no-shows'. Given that cancellations for medical or MDH administrative reasons were minimal, then patient 'no-shows' is the primary reason leading to the continuous changes to daily intervention lists. The updating of the daily intervention lists is paramount to ensure that theatre time allocated to respective consultants is actually utilised. Such changes can only occur following an administrative process where the Hospital makes every endeavour to, as soon as possible, contact and admit other patients for elective interventions. In fact, other patients were not always called to fill in operating theatre slots arising from patients 'no-shows' from different Departments. This situation also impinges on operating theatre planning and administration. Since the conclusion of audit fieldwork, MDH has intensified its efforts to minimise patient 'no-shows' by contacting more patients to confirm their intention to keep their intervention appointment.

[23] During July 2012, there were 2,318 operations in MDH's 20 Main operating theatres. Apart from elective surgery, this number also includes emergency interventions.

Table 9 : Variances between the original daily intervention lists and the actual interventions (July 2012)

	Listed interventions	'No-shows' and cancellations	Additional interventions		Actual interventions carried out
			Updated on original lists	Not included in daily intervention lists	
Cardio-Thoracic Surgery	43	5	2	1	41
Dental Surgery	17	3	0	16	30
ENT	148	19	10	19	158
General Surgery	300	35	6	20	291
Gynaecology	371	39	7	56	395
Neurosurgery	14	0	0	9	23
Ophthalmology	317	46	19	30	320
Orthopaedics	320	54	5	23	294
Paediatrics	56	4	0	3	55
Pain Relief	108	17	0	15	106
Plastic Surgery	28	2	0	5	31
Unspecified	5	0	0	0	5
Urology	145	13	3	8	143
Vascular Surgery	45	3	2	1	45
Total	**1,917**	**240**	**54**	**206**	**1,937**

4.3.23 The determination of the reasons for patient 'no-shows' was beyond the scope of this audit. Nevertheless, the Hospital incurs extra expenses and efforts in circumstances when patients do not inform MDH in advance of their wish to cancel surgery.

4.3.24 The continuous changes in the intervention lists also render the management information contained therein as rather complex to analyse. In many cases, the manual notes indicated on the daily intervention lists do not make reference to who updated the list, and on whose authorisation. This is illustrated by Table 9, which shows that during the month under review, 206 elective operations were carried out without being included in any of the daily intervention lists for that month. Such circumstances diminish management control over the elective surgery process as well as raises issues of transparency and accountability.

4.4 The non-integration of the various stand-alone information systems limits the monitoring function of elective surgery processes

4.4.1 This Chapter has already discussed how MDH documents various information in connection with elective surgery on stand-alone systems. Despite the limitations of such information systems noted in the preceding Sections of this Chapter, these stand-alone systems provide ample management information. However, the non-integration of these systems result in fragmented management information, which to varying degrees, places limitations on MDH's monitoring function.

4.4.2 Admittedly, the integration of all of the Hospital's information systems is a costly and lengthy exercise. MDH initiatives in this regard have commenced in June 2012. Towards this end the Hospital sought approval from MHEC to integrate Information Technology (IT) based systems relating to operating theatres activities and bed-stock. The integration of these two systems was deemed important to enhance management control over operating theatre utilisation as well as bed blockage and bed movement. However, in view that the feasibility of integrating all of the Hospital's IT systems through the Integrated Health Information System 2 (IHIS2) system was in process, this request was not acceded to. However, it is to be noted that progress relating to this project has stalled.

4.4.3 The lack of integration of the various information systems maintained by the Hospital does not enable MDH Management to take cognizance of all information related to specific cases. Moreover, such a situation does not

enable the expedient generation of management reports linking two or more data sets. For instance, comprehensive reports depicting the various stages of the administrations associated with elective surgery, such as who referred the patient to MDH, when the patient was referred, the outpatients' visits, the date when the patient was added to the waiting list and follow-up visit. Similarly, the lack of integrated information management systems places various constraints on the compilation of comprehensive reports related to operating theatre management. An example in this regard relates to linking daily intervention lists, operation cancellations and related counteraction with the waiting lists attributed to each consultant.

4.5 Conclusions

4.5.1 This Chapter discussed how the lack of integrated management information systems at MDH is leading to data fragmentation through the various stand-alone systems, which were developed over a number of years. Moreover, this audit has also identified a number of issues, which impinge on the effectiveness of the stand-alone systems including the issues associated with the Centralised Waiting List System. Prolonging further the full implementation of the latter will continue to diminish MDH's control over elective surgery waiting lists.

4.5.2 Whilst the significant cost associated with the development of systems is acknowledged, the current situation may, to varying degrees, be effecting Hospital efficiency. However, to date, only minimal action has been taken in this regard, namely because of the marginal progress registered in the IHIS2 project. In fact, comprehensive feasibility studies determining the costs and benefits of implementing an integrated management information system at MDH has not yet been undertaken.

4.5.3 The management information issues discussed in the preceding paragraph has had a negative impact on the Hospital's governance. In some instance, the lack of data has weakened management control over the various elective surgery processes. In this context, the information weaknesses identified hampers the Hospital's planning, implementation and monitoring functions. Moreover, the management information limitations also minimise the transparency and accountability of the various elective surgery processes.

4.5.4 The next Chapter of this Report discusses the utilisation of MDH's operating theatres. These constitute a critical element in meeting the demand for elective surgery.

Chapter 5

Operating theatres utilisation

Chapter 5 – Operating theatres utilisation

5.1 Introduction

5.1.1 Optimising the use of operating theatres is of critical importance to increase the number of operations carried out and to reduce the waiting times for elective surgery. This review has showed that despite the significant increase in the number of operations carried out at Mater Dei Hospital (MDH), there is still scope to further increase theatre utilisation efficiency. There are many variables at play, which impinge on operating theatres' efficiency. This audit has found that utilisation rates may be compromised since there is no central authority or a clearly identified coordinating body to direct and oversee the daily operating theatres' activities. Operating theatre planning has to work around a number of constraints.

5.1.2 MDH houses 34 operating theatres, which include 20 Main operating theatres, two Catheterisation-labs (Cath-lab), six Endoscopy rooms and another six theatres used for various specialities. Most interventions are performed in the Main theatres. During the audit period, one of these theatres was designated as an emergency room, another for training and another for In Vitro Fertilisation (IVF).[24] Another of the Main theatres serves as a back-up to the Cath-lab where most of the cardiology surgery is performed. The Endoscopy rooms are mostly utilised by the Surgical Department to carry out diagnostic procedures. Most of the interventions performed in these rooms are of a day-case nature.

5.1.3 The Theatre Users Committee allocates operating theatre time to consultants following requests made by the respective departmental Chairs. Consequently, a process to assign supporting professionals and staff is triggered, leading to specific plans relating to the multidisciplinary teams working in each theatre. The main plan, however, allocates theatre sessions to respective consultants. This plan also considers the number of surgeons assigned to each consultant. Such an arrangement implies that consultants in a few instances may be allocated a number of parallel theatre sessions. This approach implies that consultants may be responsible for supervising operations being carried out in different theatres at the same time.

5.1.4 In view of the foregoing, the National Audit Office (NAO) examined MDH's use of its operating theatres. Additionally, a review of MDH's theatre management and control was undertaken. The scope of the latter review extended to the planning and organisation of theatre activity. The ensuing Sections of this Chapter aim to discuss:

- operating theatre leadership;
- planning of intervention sessions; and
- optimising the use of operating theatres.

5.2 There is no central control or coordination of operating theatres

5.2.1 Leadership aimed at steering and coordinating the activities within operating theatres is a critical

[24] At the time, the IVF designated theatre was unutilised.

function in any hospital. Leadership, in this context, would be responsible for strategic planning, monitoring and management of theatre performance.

5.2.2 The performance of operations encompasses various inputs. Consultant surgeons, consultant anaesthetists, theatre nursing staff and theatre support staff need to function as a team to ensure that theatre services are provided in the most efficient and effective manner while recognising the contribution made by each person involved. The multidisciplinary input necessary to deliver operations necessitates effective coordination, direction and monitoring. As discussed in the introductory Section of this Chapter, currently, each discipline contributing in the operating theatres answers to the head of the respective department.

The operating theatre management structure lacks a head to coordinate the various theatre functions

5.2.3 As discussed above, the multidisciplinary management approach implies that there is no central control or authority coordinating the daily activities within the operating theatres. Towards this end, MDH Management recognised this gap in the operating theatre management structure and sought to appoint an operating Theatre Director. Although the first official communication between MDH and the Ministry for Health, the Elderly and Community Care (MHEC) was in July 2011, to date this appointment remains outstanding. This situation directly impinges on theatre efficiency since coordination of the daily activities is limited and in many cases any corrective action, which may be required cannot be taken in a timely manner.

The management function of operating theatres is fragmented

5.2.4 The vacant position of a director to manage and control the daily activities in the operating theatres has led to a fragmented approach. The main management functions concerning the theatres are performed by various managerial positions within the Hospital. Consequently, this leads to the fragmentation of theatre management. The following refers:

i. The Theatre Users Committee has a critical role in the running of the theatres. Its major function is to allocate time to MDH Departments requesting additional theatre sessions. Generally, such requests are made to address waiting lists problems. The Head of the Surgical Department chairs this Committee. Its members include the Hospital's Chief Executive Officer (CEO), Chair Anaesthesia and Director Nursing. The Committee meets on a quarterly basis. The Committee's mandate is not formally defined since its terms of reference have not been officially established. Given that its function is mainly related to the allocation of theatre sessions, it is not generally recognised as the body, which coordinates or takes decisions relating to the daily theatre activities. In fact, the Committee does not perform any in-depth monitoring of theatre activities, especially in light that management information in this regard is limited. Furthermore, in 2013, the Committee functions were transferred to the Theatre's Action Team.

ii. The Medical Superintendent's duties regarding the operating theatres also include monitoring duties. This monitoring is aimed at ascertaining that all planned interventions are carried out. Towards this end theatre scheduling and the cancellation of operations are generally followed-up retrospectively.

iii. Departmental chairs aim to ensure that targets agreed with consultants under their responsibility are attained. However, chairs are generally more concerned with clinical issues concerning their Department. Moreover, their contractual allocation for administrative duties is limited in lieu of their clinical involvement.

5.2.5 The above functions illustrate the fragmented management approach adopted towards the operating theatres. Moreover, none of the above functions directly relate to the day-to-day running of the theatre. The vacant post of a Director responsible for the operating rooms implies that there is no single body or authority responsible for providing leadership within the theatres' area itself. Additionally, this situation has resulted in a weak interface between the Theatres, the Theatres Users Committee and the various Departments.

5.3 Planning function weaknesses impinge on operating theatres efficiency

5.3.1 The planning function relating to operating theatres is complex and dependant on the inputs of the medical professionals involved in performing surgery. The

main aim of the planning function is to optimise the use of MDH's operating theatre facilities and its highly trained staff in a way that takes into account clinical priorities and up to date waiting lists. This audit has revealed various concerns, which weaken the operating theatre planning function, and consequently impinge on optimisation levels.

The allocation of operating theatre sessions is based on a historic and negotiation process

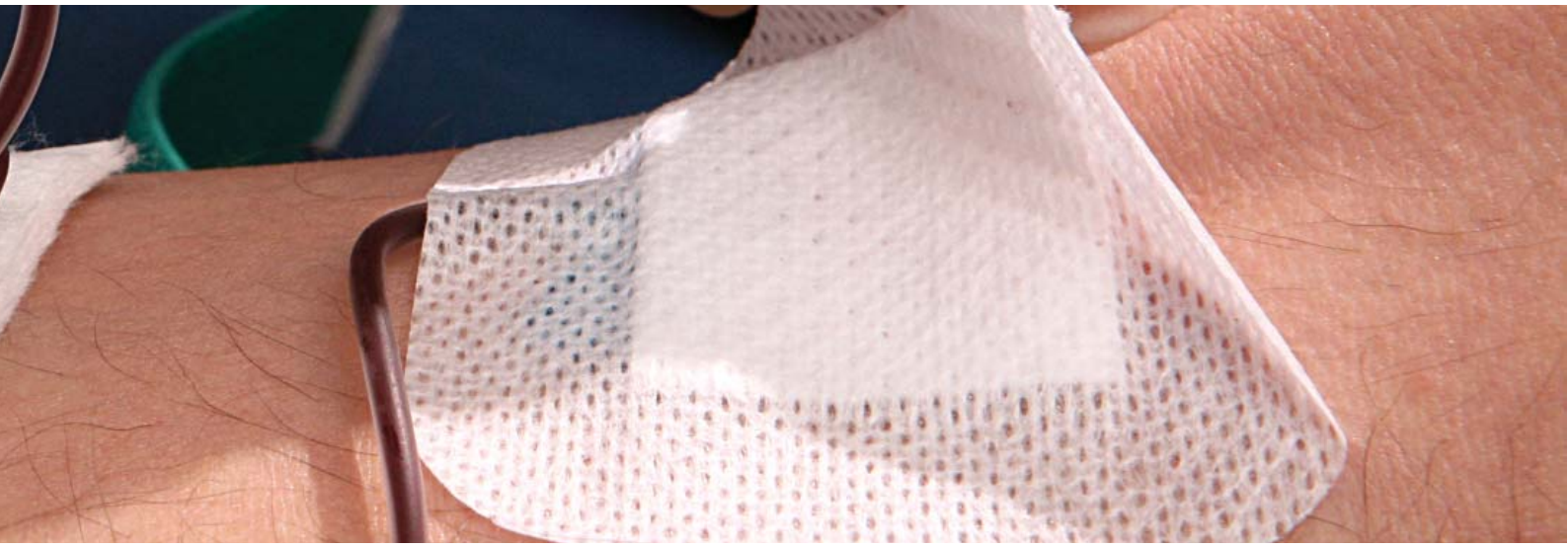
5.3.2 There has been a significant increase in the availability of operating theatres at MDH, especially when compared to the previous situation at St. Luke's Hospital (SLH). This has had a direct effect on the increase. To date, however, MDH does not have the appropriate planning tools, namely Information Technology (IT) based programmes, to allocate optimally theatre sessions by taking into consideration the variables involved when undertaking elective surgery. As discussed in Chapter 4, efforts to develop operating theatre related software through the Integrated Health Information System 2 (IHIS2) system are currently stalled.

5.3.3 In the absence of such software, the operating theatre planning process is a manual task involving amongst others, consultants, anesthetists and nurses. In the circumstances, the allocation of theatre sessions entails discussions and negotiations involving the major stakeholders, including the Theatre Users Committee. This manual planning process, however, cannot fully consider the resources availability as the starting point of allocating theatre time to the various Departments.

5.3.4 The unavailability of the appropriate IT infrastructure to support operating theatres' planning has, to varying degrees, constrained MDH to base its theatre allocation sessions on practices prevailing at SLH. Such concerns were highlighted to the NAO through various interviews with key Hospital personnel. This situation was also outlined in the John Hopkins Medicine International (JHI) report where it was remarked that the last block model change to operating theatre sessions was done in 2001.

5.3.5 Subsequent changes to theatre sessions allocations following the transfer to MDH mainly ensued over time by allocating additional sessions to consultants. This situation materialised after the engagement of more surgeons within respective firms and a policy decision to introduce afternoon operating theatre sessions. These initiatives mainly focused and succeeded in increasing the throughput of operations. Nevertheless, the opportunity existed to further increase theatre efficiency through better coordination and utilisation of the available resources. Towards this end, efficiency may be compromised as various limitations arise when the planning base line dates back significantly.

5.3.6 The recently signed Collective Agreement between Government and the Medical Association of Malta aims to further increase theatre sessions, particularly in the afternoon. However, the issue of limited resources availability prevails. The Ministry for Health (MfH) contends that increasing afternoon sessions is primarily dependant on the availability of anaesthetists and nurses. Historically MDH have always encountered problems to engage nurses despite the ever improving



working conditions. Moreover, family friendly measures in place also limit the availability of staff. In this light, MDH resorts to the engagement of foreign employees.

The lack of key performance indicators in the consultant's job plans weakens the operating theatre planning function

5.3.7 Operating theatres throughput is significantly influenced by the availability of consultants and their respective firms. Theatres sessions are allocated to consultants, who in turn and in agreement with their departmental Chair, assign the allocated theatre time to surgeons within their firm. Consultants are engaged through contracts, which stipulate the number of clinical sessions to be performed. In turn, a yearly job plan, which specifies the daily clinical duties to be performed by each consultant is drawn. However, in many cases, the respective job plans do not distinguish between the allocation of clinical hours for surgery, ward rounds and outpatients duties. Furthermore, the job plans reviewed did not specify the type and number of operations to be performed, and/or supervised by respective consultants. The foregoing is deemed a critical issue impinging on the theatre planning function as two key variables involved in theatre planning, time and throughput, are not considered simultaneously.

Planning shortcomings and patient 'no-shows' influence the daily intervention throughput

5.3.8 Following the allocation of theatre time, the planning phase ensues by compiling daily operation lists. These lists are based on the consultants' clinical prerogative and are compiled by the respective nursing officers. In the preceding Chapter, this Report has already discussed the complexities and issues involved in the compilation of daily theatre lists from a Hospital management information system perspective. To varying extents, the issues already highlighted also impinge on the planning process due to the management information weaknesses noted therein.

5.3.9 One such issue related to patient 'no-shows'. To a certain extent, the Hospital tried to mitigate the negative effects on throughput by including additional patients on daily intervention lists. However, the number of additional patients called up to replace potential 'no-shows' is not scientifically calculated by considering the relative trends over time. Consequently, instances resulted where more interventions could have been performed in the allocated theatre session. It is to be noted that since the conclusion of fieldwork related with this performance audit, MDH extended the system whereby the patients awaiting interventions are contacted prior to their operation date, to confirm their availability.

5.4 Despite the significant increase in the number of operations there is still scope to further increase theatre utilisation efficiency

5.4.1 The NAO sought to determine the extent to which MDH operating theatres were being utilised. A primary objective of the Hospital is to optimise the use of the expensive infrastructure and equipment at its disposal. Moreover, operating theatre efficiency is considered to be directly related to waiting times for elective surgery.

5.4.2 As at end 2012, the number of elective operations performed at MDH has increased by around 35 per cent over the past six years. On the basis of its experience, MDH management sought to, and to varying extents, addressed efficiency concerns within the current operating theatres work practices. Hospital statistics in this regard illustrate the positive outcome since throughput has increased considerably.

The maximum number of operations that can be carried out at MDH under various scenarios is unknown

5.4.3 A critical element in increasing the efficiency of operating theatres relates to the Hospital's authorities being reliably informed of the intervention throughput capacity under various scenarios. The first scenario would be at current resources levels. Other scenarios would be at various other levels, which take into consideration projected resources availability over time and/or the economic considerations associated with increasing throughput. The latter considerations include estimating the marginal benefits of increasing throughput against other available options of offering healthcare, such as farming out through contracts with the private sector.

5.4.4 Currently, there are no studies available relating to the required human and financial resources to the number of operating theatres and the Hospital's bed-stock. The only information available to MDH Management relates to historical trends on surgery throughput. As a result, Hospital authorities and management are constrained to develop throughput practices and targets based on these statistics and other efficiency related elements, which they would have observed through their experience and expertise in the field. This approach, coupled by the cooperation of the Hospital's human resources led to the significant increase in intervention throughput over the past years.

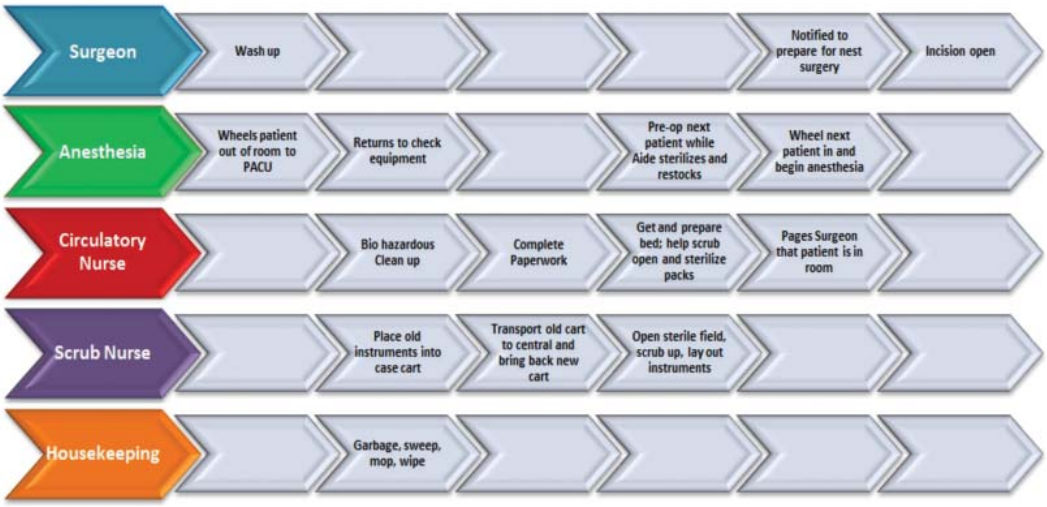
5.4.5 However, the approach referred to in the preceding paragraph has its limitations. It prohibits the Hospital's Management to establish realistic and, more importantly realisable throughput targets. To date the allocation of theatre sessions to consultants has its roots in historical practices rather than based on what throughput levels the Hospital can attain with the current resource availability.

5.4.6 In the absence of throughput capacity studies, the NAO cannot make any further comment on the appropriateness or otherwise of session allocations with respect to the theatres under review. The non-availability of these benchmarks is also seen to impinge on the allocation of resources and the development of more efficient work practices.

Operation turnaround policies are not established

5.4.7 Turnaround time is the time that elapses between one operation and the next. Maintaining such times to a minimum is key to operating theatres efficiency. In this context, long turnarounds imply the lack of coordination between the various players both within and external to the operating rooms. Figure 9 shows the main activities undertaken by the various professionals and support staff between operations.

Figure 9 : The main activities carried out during the turnaround time between operations



Source : Garner (2012), page 3.

5.4.8 Despite their importance, MDH has not yet drafted policies indicating turnaround benchmarks. In the absence of such targets, the risk increases that operation turnarounds take longer than necessary. The absence of MDH turnaround policies also impinges on the Hospital's Management efforts to identify any inherent inefficiencies in various processes involved in the conduct of interventions. Turnaround rates also constitute a critical element in estimating utilisation rates. Following discussions with MDH Management, it was deemed appropriate that for the purpose of this Report a 15-minute turnaround benchmark be adopted.

The Main operating theatres were on average utilised for 31 hours weekly

5.4.9 There are various performance indicators with which to gauge operating theatre efficiency on the basis of their respective utilisation rates. The first relates to throughput over time. This Report has already referred to and acknowledged the significant increase of interventions carried out over the past six years because of the continuous efforts made to optimise the use of the Hospital's operating theatres.

5.4.10 In this regard, other performance indicators relate to the number of hours that operating theatres are used. Ideally, as a first step, such an exercise would compare planned intervention sessions with actual utilisation. MDH Main theatres allocation plan is continuously changing as consultants may be accommodated extra sessions to address waiting lists demand. However, in many cases, the plan is not updated to reflect the dynamics of theatre activity. The only documentation indicating the changes to the planned theatre allocations are reflected in the daily intervention lists, which only provide basic patient and logistical information. In these circumstances, any comparison between the planned and actual operating theatre activity would not provide reliable results.

5.4.11 In view of the foregoing, the NAO's objective to determine the utilisation rates of operating theatres could only be partly realised. Although the average utilisation rate of the theatres could be determined, the resultant calculation could not be compared to any MDH benchmark to ascertain whether the Main operating theatres were being optimally utilised. Nevertheless, an assessment of the average operating theatre utilisation rate as a stand-alone variable is considered to be an adequate indicator to measure operating theatre performance and to identify potential inherent inefficiencies.

5.4.12 The NAO estimated the actual hours that the Main operating theatres were utilised on the basis of interventions carried out in July 2012. This month was selected as the basis for the NAO's case study since the number of operations carried out during this period ranked among the highest. In fact July 2010, 2011 and 2012 ranked third, fifth and sixth in comparison to other months in the respective years.[25] Although July is considered as a period with a high incidence for staff vacation leave, this appeared not to have a material impact on intervention throughput relating to most Departments. Moreover, July was selected as this was the latest possible month, which could be analysed within the schedule of this audit.

5.4.13 Records related to the duration of operations were sourced through the various operating theatre logs. These record the start and end time for each intervention as well as the medical professionals involved in the operation. The start-time documented in these logs relate to the time that the patient was actually in the theatre. These logs provide a sufficiently adequate input to estimate theatre activity. Moreover, in the absence of documented MDH policy, the NAO consulted with various theatre users. Most agreed that start-up time is considered as 08:30 and 13:30 for the morning and afternoon sessions. It is to be noted that the duration of each intervention was supplemented with an additional 15-minute turnaround time.

5.4.14 Estimating the number of operating theatre hours that were expended in the Main theatres necessitated that various assumptions be made in view of the prevailing theatre allocation practices. These issues revolved around the daily allocation of a Confidential Enquiry into Perioperative Death (CEPOD) theatre (dealing with emergencies), the IVF theatre, the Simulation theatre, the Orthopaedics Trauma operating room and another operating theatre used as a back-up for interventions carried out in the Cath-labs. These assumptions led to two out of the 20 Main theatres to be scoped out of this exercise on the basis of the following:

i. During July 2012, one of the Main theatres was, on a daily basis, designated as CEPOD (dealing with emergency cases). The inclusion of such a theatre when estimating the utilisation rate of the Main

[25] MDH Surgical Operations/Interventions at Operating Theatres Reports (2011 and 2012).

operating rooms would have distorted results since the Hospital is required to have medical and logistical arrangements to deal with emergency cases whether or not they actually materialised. Moreover, during the course of this audit, the CEPOD allocation practices have changed where the allocation is now based on the medical team rather than on a specific theatre. Based on the foregoing, it was deemed prudent to scope out one theatre per day when estimating the actual operating theatre hours utilised.

ii. A similar situation prevailed with respect to the operating room designated for orthopaedic trauma cases. During the period under review, this theatre solely dealt with orthopaedic emergency cases. Based on its 'emergency case' nature, this operating room was also scoped out of the exercise. In order to avoid 'double counting' all the operations carried out in this theatre were also excluded from the analysis.

iii. An operating room is designated as a back-up to the Cath-labs. In 90 per cent of cases, this theatre's activity related to elective interventions. Consequently, this theatre was considered for the utilisation rate exercise.

iv. During the period under review, two theatre were designated for IVF treatment and simulation exercises. Consequently, no interventions were being performed in these operating rooms. During the course of this performance audit MDH reviewed its policy and started to utilise these theatres for elective and emergency surgery. This illustrates that there were no clinical reasons impeding the use of these theatres. On the basis of the foregoing, these operating rooms were considered for the purpose of this exercise.

5.4.15 This exercise revealed that 2,455 hours were utilised in the 18 operating theatres under review during July 2012. Table 10 illustrates the average daily utilisation of these theatres based on emergency and elective surgery conducted.

5.4.16 In the absence of policy outlining benchmarks for theatre utilisation, any comments on the resultant hours of activity in the operating theatres under review shown in Table 10 would be of a subjective nature. However, MDH Management contends that Theatres are expected to function for eight hours a day on a Monday to Saturday basis. The Hospital, however, acknowledges that the potential to increase the number of operating theatre sessions exists and that efforts are to be stepped-up in view of current waiting lists demands and the imminent introduction of the Cross-Border Health Directive. Towards this end, MDH is also considering other factors impinging on theatre utilisation, namely, the availability of the medical team and the Hospital's bed-stock.

5.4.17 In January 2013, MDH Management has already taken concrete action to increase theatre activity by designating a specific operating room as the CEPOD theatre. This initiative was complemented with engaging four additional consultants to man the CEPOD theatre as well as to perform elective surgery in the other Main and Endoscopy operating rooms. Through these latter actions, the weekly theatre hours potentially expended with respect to the Main theatres would only increase marginally.

Table 10 : Average utilisation rate of the Main operating theatres (July 2012)

Intervention type	Total utilisation (hours)	Weekly average utilisation (hours)	Daily average utilisation based on a six day week (hours)	Daily average utilisation based on a seven day week (hours)
Emergency	296	4	0.6	0.5
Electives[26]	2,159	27	4.6	3.9
Total	**2,455**	**31**	**5.2**	**4.4**

[26] Includes around 52 hours for operations classified as unspecified.

The potential of increasing intervention throughput through better utilisation of Endoscopy rooms is not being realised

5.4.18 The operating theatres utilisation rate exercise was extended to five Endoscopy rooms housed at MDH. One of the Endoscopy theatres was scoped out on the basis of its specilised use. These operating rooms mainly deal with day cases, and generally the interventions carried out are of an elective nature. During July 2012, 881 interventions were carried out within the 610 hours of planned utilisation.

5.4.19 During July 2012, the five theatres reviewed were utilised for around 449 hours. For the purpose of this estimation, intervention duration data was retrieved through the theatre logs while a 15-minute turnaround time between each operation was assumed. Table 11 estimates the average weekly and daily utilisation rates of these operating rooms.

5.4.20 Table 11 shows that on average each of these theatres is utilised for around 20 hours per week, that is less than 3.5 hours daily when considering a six-day week. Discussions with MDH Management highlighted that such a low utilisation rate is mainly attributed to the fact that around half of the bed-stock of the Day-Surgery Department is occupied by patients who have an inpatient length of stay, exceeding one day. Consequently, the Hospital's ability to turnaround its bed-stock on a daily basis is severely constrained.

5.4.21 MDH contends that day-surgery constitutes less than 35 per cent of the total interventions held at the Hospital. This state of affairs further illustrates that the full potential of these theatres is not being realised.

5.4.22 The Hospital's Management is fully cognisant of this situation. An initiative aimed at increasing throughput of these theatres encompassed the appointment of four acute surgeons to perform extra sessions on alternate weeks. Since the conclusion of audit fieldwork, such initiatives have resulted in an increase in endoscopy interventions. Moreover, MDH is in the process of reviewing the situation concerning the use of these theatres with the aim of further increasing their utilisation and consequently their throughput. These initiatives mainly revolve around increasing the rate of day-surgery at MDH.

Endoscopy rooms were utilised for only 73 per cent of their planned allocated hours

5.4.23 The actual theatre hours expended in July 2012 in the five Endoscopy rooms under review amounted to 27 per cent less than the scheduled allocation. This comparison was possible since contrary to the situation relating to the Main theatres, the relative Endoscopy rooms plan outlining planned theatre sessions were considered to be appropriately robust to enable comparisons to be made with the actual theatre hours expended. Table 12 refers.

Table 11 : Average utilisation rate of Endoscopy operating rooms (July 2012)

Operating Room	Total utilisation (hours)	Weekly average utilisation based on a seven day week (hours)	Daily average utilisation based on a six day week (hours)	Daily average utilisation based on a seven day week (hours)
E1	84	18.98	3.23	2.71
E2	126	28.40	4.84	4.06
E3	159	35.88	6.11	5.13
E4	55	12.39	2.11	1.77
E5	25	5.57	0.95	0.80
Total	**449**	**20.24**	**3.45**	**2.89**

Table 12 : Variance between actual and planned theatre hours in Endoscopy rooms (July 2012)

Operating room	Planned Sessions (hours)	Actual Utilisation (hours)	Variance (hours)	Variance (%)
E1	144	84	60	(42)
E2	175	126	49	(28)
E3	157	159	-2	2
E4	83	55	28	(34)
E5	52	25	27	(52)
Total	**611**	**449**	**162**	**(27)**

5.4.24 Table 12 shows that the largest variances between planned and actual hours expended in the Endoscopy rooms resulted in E1 and E5. These two theatres were utilised for only 58 and 48 per cent respectively. This situation may arise due to inherent inefficiencies within the relative processes to perform surgery in these theatres.

5.4.25 Whilst it is acknowledged that elective surgery is also carried out in the Cath-lab, the absence of a formal plan to use for benchmarking purposes hindered the NAO from further analysis.

5.4.26 The next Section of this Chapter will discuss the inefficiency observed during the course of reviewing the operating theatres performance, through their utilisation rates. The discussion relates to both the Main and Endoscopy theatres.

5.5 Inefficiencies in operating theatre processes affect the intervention throughput

5.5.1 This performance audit revealed various operational inefficiencies, which, to varying degrees restricted MDH from further increasing the utilisation rates of its Main and Endoscopy operating theatres. In turn, these issues impinged on the Hospital's intervention throughput. The audit concerns raised in this Section are based on the data derived through the operating theatres' logs, theatre plans (whenever these were deemed as being appropriately updated) and discussions with the various operating theatres stakeholders. The observations mainly related to delays in intervention start-time, prolonged turnaround between operations, early finishing of theatre sessions, including under-running lists, session over-runs as well as human resources related issues.

Coordination issues are the primary factor leading to delays in operating theatre start-times

5.5.2 Although not documented in a policy document, operating theatre teams generally acknowledge that intervention start-times, denoted by the term 'knife-to-skin', is 08:30 and 13:30 hours for morning and afternoon sessions. During July 2012, the available operating theatre plans show that there were 424 and 81 morning and afternoon sessions in the Main and Endoscopy theatres. This audit revealed that in 145 of these 505 cases there were delays of more than 30 minutes in session start-up. Table 13 refers.

5.5.3 Table 13 illustrates that it is only a minority of the first morning and afternoon operating theatre sessions, which commence in accordance with their scheduled time. Session start-up delays of more than half an hour resulted in a loss of theatre utilisation, estimated at 174.42 and 13.2 hours in the Main and Endoscopy theatres. On the assumption that the Main theatres under review were to function for eight hours a day on a six-day week basis, then late session start-times constitute around five per cent of lost theatre time. The time lost in late session start-ups in the Endoscopy operating rooms constitute two per cent of the total planned theatre hours allocation. This amount of time is considered costly in terms of unutilised resources and throughput.

Table 13 : Delays in operating theatres' morning and afternoon session start-ups (July 2012)

Delays in session start-up (minutes)	Main theatres		Endoscopy rooms	
	Delays in session start-up (No.)	Delays in session start-up (%)	Delays in session start-up (No.)	Delays in session start-up (%)
0	72	17	21	26
1 – 15	104	25	35	43
16 – 30	118	28	10	13
31 – 45	39	9	9	11
46 – 60	43	10	5	6
61+	48	11	1	1
Total	**424**	**100**	**81**	**100**

5.5.4 There may be justifiable reasons for such delays – these relate mainly to clinical issues. However, there are various logistical issues, which contribute to session start-up delays. MDH does not maintain records in this regard. The main factors which emerged during interviews with operating theatre staff relate to delays in transferring patients from the ward to the Holding Bay and the late arrival of any of the medical team involved in the carrying out of the intervention.

5.5.5 The circumstances discussed in the preceding paragraph are indicative of coordination weaknesses. This situation is primarily brought about since a Theatre Director has not yet been appointed to oversee theatre activity on a strategic and day-to-day operational levels.

Prolonged turnaround times were observed in about 14 per cent of operations reviewed at the Main Theatres

5.5.6 Prolonged turnaround times are another potential source of inefficiencies, which limit intervention throughput. Additionally, turnaround times result in causing delays to the daily operation schedule, which may lead to operating theatre sessions over-runs. The latter constitute additional cost to the Hospital in terms of overtime payments.

5.5.7 This audit analysed turnaround times in the Main theatres with respect to interventions carried out in July 2012. Since turnaround times in the Endoscopy operating rooms were not material, these theatres were not included in this analysis.

5.5.8 In the absence of MDH policies, this exercise considered turnaround against a 15-minute benchmark (paragraph 5.4.8 refers). Moreover, this exercise also took into consideration circumstances, which, by their nature, have a greater incidence to prolonging turnaround times. Such situations generally materialised in the first scheduled operation within a session and following emergency surgery. Consequently, this review considered 1,544 operations carried out in the Main operating theatres during July 2012. In the Main theatres, turnaround times which exceeded the 15-minute benchmark amounted to around 34 per cent of the operations considered for this exercise. Table 14 refers.

Table 14 : Turnaround times in the Main theatres (July 2012)

Turnaround times (minutes)	Operations (No.)	Operations (%)	Lost time due to prolonged turnaround times (hours)
0 – 15	1,012	65	0
16 – 30	322	21	52
31 – 45	108	7	48
46 – 60	55	4	37
61+	47	3	70
Total	**1,544**	**100**	**207**

5.5.9 Table 14 indicates that MDH is not always managing to maintain turnaround within the 15-minute benchmark. This target was attained in around two thirds of the cases reviewed. Moreover, in 47 cases turnaround exceeded one hour. The resultant loss in time due to prolonged turnaround has been estimated at 207 hours. This estimate is exclusive of 15 minutes turnaround for each operation considered in this exercise.

5.5.10 It is to be noted that MDH sought to reduce waiting times by increasingly utilising the Holding Bay within the operating theatres area. The positive impact of this approach mainly emanates from minimising the time lost in the operating theatre staff waiting for the patient to arrive at the operating room from the respective ward.

Logistical issues and clinical complications are the major contributory factors leading to operating theatre session over-runs

5.5.11 MDH incurs additional expenditure equivalent to the extra variable costs involved in manning the theatres when over-runs occur. There are a number of reasons, which contribute to over-runs. In some cases, over-runs are unavoidable. These circumstances generally relate to clinical exigencies. To a lesser extent, over-runs may result due to logistical issues, such as delays in the commencement of sessions and prolonged turnaround times.

5.5.12 For the purpose of analysing the extent of over-runs, this audit reviewed 424 and 81 operating theatre sessions which occurred in July 2012 in the Main and Endoscopy operating rooms respectively. This evaluation excluded all emergency cases. During the period under review, over-runs in the Endoscopy rooms were considered as marginal. However, over-runs in the Main theatres were a more common occurrence. Table 15 refers.

Table 15 : Over-runs in the Main theatres (July 2012)

Minutes	Main theatres (sessions)	Main theatres (hours)
1 – 30	28	8
31 – 60	21	19
61 +	66	163
Total	**115**	**190**

5.5.13 Table 15 shows that over-runs occurred in 115 out of the 424 sessions reviewed. In total, these over-runs amounted to 190 hours. In 43 per cent of the cases the duration of these over-runs amounted to less than one hour in each session. However, the remaining over-running cases were of more than one hour in each session.

5.5.14 In view of their materiality, the NAO sought to determine the extent to which logistical issues contributed to the over-runs amounting to more than one hour. This entailed ascertaining whether late session starts and prolonged turnover times influenced session over-runs. Towards this end, the exercise considered only instances where the total excess turnaround time in any one session was more than one hour. In this context, the term 'excess' relates to the resultant turnaround time after deducting 15 minutes between each operation within the particular session. Figure 10 and 11 refer.

5.5.15 Figures 10 and 11 show that late session start-times and prolonged turnaround times between interventions are contributory elements to operating

Figure 10 : Potential influence of late session start-ups and prolonged turnaround on over-runs (July 2012)

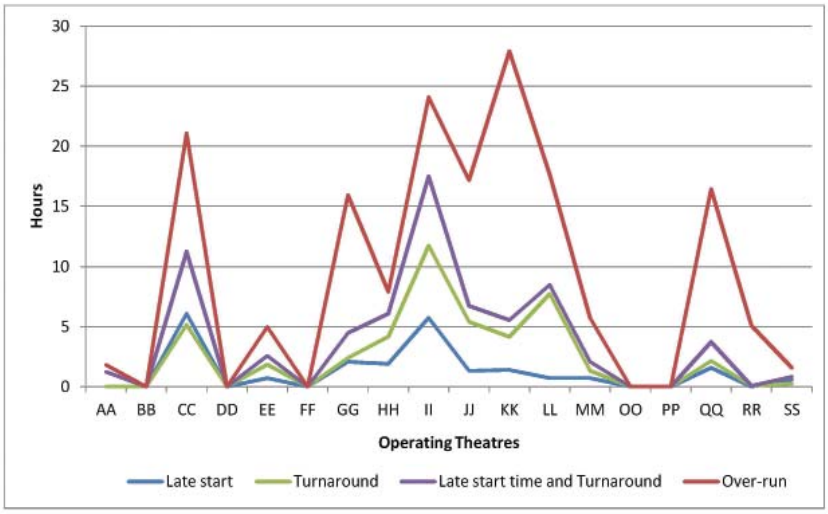
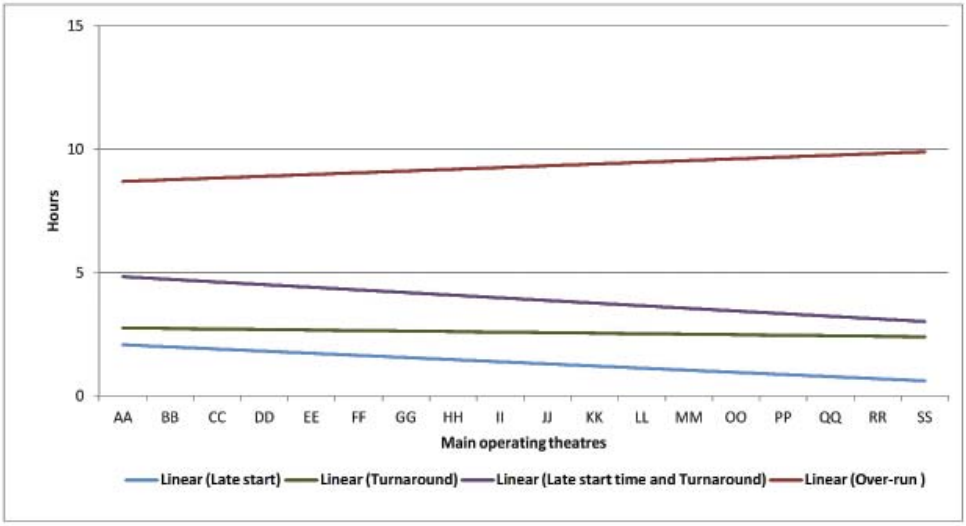


Figure 11 : Potential influence of late session start-ups and prolonged turnaround on over-runs (July 2012 – linear trend)



theatre session over-runs. As indicated by the trend lines in Figure 11, the sum of these two factors amount to nearly half of the total duration of over-runs accumulated by all theatres during July 2012.

5.5.16 The Figures also illustrate that excessive turnarounds is the more problematic issue. While it was estimated that late session start-times contributed to 14 per cent, excessive turnaround time amounted to 28 per cent of the duration of over-runs.

5.5.17 It is to be noted that the discussion in the two preceding paragraphs is based on averaging the duration of the variables under study across all the Main theatres. As indicated in Figure 10, there are significant fluctuations as to the extent to which late session start-times and prolonged theatre turnover times contribute to over-running sessions.

Over 18 and 31 per cent of theatre sessions in the Main and Endoscopy concluded theatre activity at least two hours before the scheduled time

5.5.18 The early conclusion of operating theatre sessions also implies a degree of inefficiency in the management of operating theatres. In order to determine the incidence of early theatre session finishes in the Main and Endoscopy operating rooms, this exercise considered the planned sessions scheduled for July 2012. These amounted to 424 and 81 theatre sessions respectively. Table 16 illustrates the extent of early session finishes with respect to these theatre sessions.

Table 16 : Early session finishes (July 2012)

Early session finishes (minutes)	Main Theatres			Endoscopy Rooms		
	Sessions (No.)	Sessions (%)	Lost time due to early session finishes (hours)	Sessions (No.)	Sessions (%)	Lost time due to early session finishes (hours)
0	220	52	0	15	19	0
1 – 30	32	7	11	6	7	2
31 – 60	35	8	31	10	12	8
61 – 120	62	15	98	25	31	41
121 +	75	18	243	25	31	81
Total	**424**	**100**	**383**	**81**	**100**	**132**

5.5.19 Table 16 clearly indicates that early session finishes of more than one hour are a frequent occurrence in both the Main and the Endoscopy theatres. Furthermore, 18 and 31 per cent of all Main and Endoscopy sessions considered concluded the respective theatre activity at least two hours before their scheduled time. Various factors lead to early session finishes. MDH does not maintain records outlining the causes, which led to the early finish of specific sessions.

5.5.20 Early finishes can partly be attributed to instances where no serious complications arose or that the potential problems anticipated with respect to the session's intervention list did not materialise.

5.5.21 On the other hand, early finishes may have resulted in cases where the number of patients included on the daily list was not sufficient to cover the allocated theatre time. Under-running lists are a source of inefficiency since the allocated resources for particular session would not be fully utilised.

5.5.22 Internal procedures relating to the number of patients included in the daily intervention lists are not always followed. Consequently, in such circumstances, MDH Management would not be in a position to vet the appropriateness of such lists, in terms of the number of patients included therein.

5.5.23 Under-running lists also result in cases relating to patient 'no-shows'. Despite MDH's efforts, patients are not always willing to undergo surgery at such short notice. Consequently, the resultant number of patients available for surgery would be insufficient to fully utilise the allocated theatre time.

5.5.24 The availability of beds is another factor, which indirectly contributes to the early conclusion of theatre sessions. Irrespective of the theatre time allocated, the number of patients that can be called up for the operation is restricted by the number of beds available in the respective wards. Approximately around 12 per cent of the total bed-stock is utilised by patients awaiting transfer to other healthcare institutions. This long-standing issue not only limits the number of elective interventions carried out but also affects other processes within the Hospital. Such circumstances are particularly evident with respect to Endoscopy theatres where around 50 per cent of the bed-stock at the day-surgery wards are utilised by patients requiring long-term care.

5.5.25 This audit was not able to fully determine the extent to which early session finishes were unavoidable or the result of process weaknesses. Despite this limitation, it is clearly evident that process inefficiencies exist. It is felt that to a great extent, better monitoring and coordination relating to theatre activity, would have addressed most of these issues. This would be facilitated through the assignment of a senior official with the responsibility to implement more effectively the relative internal control mechanisms within the Operating Theatre Department .

5.6 Conclusions

5.6.1 This Chapter sought to determine the extent to which MDH was optimising the use of its Main and Endoscopy operating theatres. Towards this end, such an assessment was carried out on two main levels. The first step of this review focused on the number of interventions carried out. The second approach entailed establishing the number of hours that theatres are actually being utilised. The primary limitation of the NAO's review is that it is based on a snapshot of operating theatres activity during July 2012. However, the findings that emerged are still considered to provide an appropriately reliable indicator on the performance of the operating theatres. Moreover, the exercise elevated a number of issues, which impinge negatively on operating theatres efficiency.

5.6.2 In recent years, MDH has managed to increase significantly the number of elective operations carried out by around 35 per cent. The basis of the continuous improvement in performance was that MDH Management was able to identify and rectify areas of inefficiencies by changing work practices. In turn, together with the engagement of more consultants, additional theatre sessions could be allocated. The increase in operating theatres throughput could only materialise through the consorted efforts and cooperation of MDH staff.

5.6.3 Despite the increase in throughput, this performance audit has also shown that the Main and Endoscopy theatres were only being used for an average of 31 and 27 hours weekly out of the 40 hours that MDH Management expected the theatres to function during July 2012. While acknowledging the continuous efforts and the resultant increase in throughput since this review, these figures show that the opportunity exists to further exploit the operating theatre infrastructure.

5.6.4 Despite the continuous improvements in throughput, ultimately more human resources would be required to enable more theatre sessions to be allocated and to be optimally utilised. Moreover, in some cases, theatre utilisation is restricted through the unavailability of beds. While the Hospital infrastructure was designed to cater for short length of stays, in practice a significant percentage of beds are occupied by patients requiring long-term care or patients who, due to capacity issues, cannot be accommodated in other institutions. Another situation over which MDH has marginal control relates to patient 'no-shows'. The Hospital's modus operandi is negatively affected when patients do not inform MDH that they do not intend or are unable to undergo surgery on the scheduled date.

5.6.5 However, a number of operating theatres efficiency issues are considered to be within the Hospital Authorities' control. Despite their complexity, most of these concerns can largely be identified and addressed if the appropriate software is available to facilitate the generation of comprehensive and reliable management information. Moreover, most of the inefficiencies pointed out in this Chapter relate to the day-to-day coordinating and management control issues. In this light the opportunity to mitigate some of these concerns through the appointment of a senior official to assume management responsibility for the running of the operating theatres remains foregone.

Appendices

Appendix I – Survey methodology

COVERAGE AND RESPONSE

The target population for this survey consisted of individuals who underwent elective surgery between 1 April 2011 and 31 March 2012. A total of 24,605 persons were eligible to participate in the survey. The demographic details of these persons, and other information on the Department and surgery category were provided by MDH through NAO.

Tables A and B below, illustrate the distribution of individuals by gender, age group, Department and surgery category:

Table A : Distribution of individuals by gender and age group

Age group	Male		Female		Total	
	No.	%	No.	%	No.	%
18-24	497	3.6	359	3.4	856	3.5
25-54	4,075	29.2	3,098	29.1	7,173	29.2
55-64	3,365	24.1	2,418	22.7	5,783	23.5
65+	6,014	43.1	4,779	44.9	10,793	43.9
Total	**13,951**	**100.0**	**10,654**	**100.0**	**24,605**	**100.0**

Table B : Distribution of individuals by Department and Category

Category	Cardiology		Ophthalmology		Ophthalmology - Outsourcing		Orthopaedics		Surgical		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	825	23.8	188	4.4	-	-	73	2.3	296	2.3	1,382	5.6
Major+	49	1.4	2,486	58.0	710	100.0	761	23.9	519	4.0	4,525	18.4
Major	322	9.3	155	3.6	-	-	251	7.9	1,564	12.1	2,292	9.3
Intermediate	2,232	64.5	183	4.3	-	-	1,993	62.5	5,296	40.9	9,704	39.4
Minor	34	1.0	1,277	29.8	-	-	109	3.4	5,282	40.8	6,702	27.2
Total	**3,462**	**100.0**	**4,289**	**100.0**	**710**	**100.0**	**3,187**	**100.0**	**12,957**	**100.0**	**24,605**	**100.0**

A gross sample of 2,015 individuals was drawn from the dataset. This was selected using a stratified random strategy to ensure a representative count of the sample by Department and surgery category. A total of 1,580 persons were contacted for this survey where 774 participated, while another group of 254 persons were not eligible to participate in the study, for e.g. due to wrong contact telephone numbers. This yielded a net effective response rate of 58.4 per cent.

Table C below includes the distribution of the effective gross sample by type of response:

Table C : Distribution of effective gross sample by type of response

Description	No.	%	No. (Effective)	% (Effective)
Good responses	774	49.0	774	58.4
Refusals	61	3.9	61	4.6
Other (No replies etc.)	491	31.1	491	37.0
Ineligibles (Wrong telephone numbers etc.)	254	16.1	-	-
Total	**1,580**	**100.0**	**1,326**	**100.0**

Tables D and E below illustrate the distribution of the net sample by gender, age group, Department and speciality:

Table D : Distribution of the sample by gender and age group

Age group	Male		Female		Total	
	No.	%	No.	%	No.	%
18-24	4	1.0	7	1.9	11	1.4
25-54	87	21.0	65	18.1	152	19.6
55-64	94	22.7	85	23.6	179	23.1
65+	229	55.3	203	56.4	432	55.8
Total	**414**	**100.0**	**360**	**100.0**	**774**	**100.0**

Table E : Distribution of the sample by Department and Category

Category	Cardiology		Ophthalmology		Ophthalmology - Outsourcing		Orthopaedics		Surgical		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	53	31.4	35	18.6	-	-	19	11.1	37	18.0	144	18.6
Major+	18	10.7	44	23.4	40	100.0	40	23.4	43	20.9	185	23.9
Major	38	22.5	35	18.6	-	-	35	20.5	43	20.9	151	19.5
Intermediate	46	27.2	32	17.0	-	-	45	26.3	40	19.4	163	21.1
Minor	14	8.3	42	22.3	-	-	32	18.7	43	20.9	131	16.9
Total	**169**	**100.0**	**188**	**100.0**	**40**	**100.0**	**171**	**100.0**	**206**	**100.0**	**774**	**100.0**

DATA COLLECTION

Data was collected by means of Computer Assisted Telephone Interview (CATI) between the 10 and the 17 of October 2012. In CATI, although respondents are contacted by telephone, computers are used to enter the data obtained from respondents during the interview. In addition, another important aspect of CATI surveys is that each sampling unit is randomly assigned among interviews, and hence reduces interviewer bias to a bare minimum.

QUALITY CONTROL

A series of measures were implemented to certify that optimum quality was achieved in this survey. These consisted of quality checks and in-built validation rules in the data collection program to limit the occurrence of non-sampling errors. The data-entry program had a number of in-built validations so that skip patterns are executed exactly as intended while responses are within a specific range. In addition, constant supervision during the data collection stage ensured a harmonised data collection process.

Missing data were imputed using statistical imputation techniques. The dataset was further subject to a series of other checks during the data-editing stage in order to identify any remaining incorrect or logically misleading data.

WEIGHTING OF RESULTS

Survey data was weighted and calibrated to correct for any biases present in the final sample of participating units arising from different response rates observed in different categories. This served to align and gross-up sample estimates with the benchmark distribution in terms of Department, and surgery category (for weights) as well as the individuals' gender and age group (for calibration).

ERRORS

The survey was subject to two main sources of errors, technically referred to as *Sampling* and *Non-Sampling errors.* While the errors attributed to each quantity estimated from the sample may be calculated, care must be taken when comparing such estimated figures with the population.

Of particular interest is the *margin of error*, which constitutes sampling error. The margin of error quantifies uncertainty about a survey result and expresses the amount of random sampling error in a survey's results. This is normally associated with a statistical level of confidence in such a way as to make it possible for us to calculate confidence intervals of the form estimate ± margin of error.

Consequently, the relative *margin of error* is simply the margin of error expressed as a percentage of the quantity to which it refers. Table F illustrates estimates of precision for a range of derived percentage rates (p) and the corresponding (weighted) number of persons (N) over which the rates are computed.

Table F : Estimates of precision

Percentage rate (p)	No. of persons (N)					
	5,485	11,257	16,566	20,080	22,831	24,605
1	1.5%	1.0%	0.8%	0.8%	0.7%	0.7%*
3	2.5%	1.8%	1.5%	1.3%	1.2%	1.2%*
6	3.5%	2.5%	2.0%	1.8%	1.7%	1.6%*
10	4.5%	3.1%	2.6%	2.3%	2.2%	2.1%*
20	6.0%	4.2%	3.4%	3.0%	2.9%	2.8%*
40	7.3%	5.1%	4.2%	3.7%	3.5%	3.4%*
50	7.5%	5.2%	4.3%	3.8%	3.6%	3.5%*
60	7.3%	5.1%	4.2%	3.7%	3.5%	3.4%*
70	6.8%	4.8%	3.9%	3.5%	3.3%	3.2%*
80	6.0%	4.2%	3.4%	3.0%	2.9%	2.8%*
90	4.5%	3.1%	2.6%	2.3%	2.2%	2.1%*

For example, the proportion of participants for whom it was necessary to visit the consultant after the operation stands at 81.6 per cent. This is calculated out of the total number of 24,605 individuals. In this case, if a precise calculation is carried out the margin of error equals 3.0 per cent. From the table above this may be estimated using data for p=80. In this case the margin of error equals 2.8 per cent*. Thus if the estimated value is considered, the 95 per cent confidence interval is the range 78.8 per cent to 84.4 per cent, i.e. 81.6 per cent ± 2.8 per cent.

It must be emphasised that figures based on a relative margin of error of 30 per cent or more or which are calculated on a small number of reporting individuals (for example 30 or less) must be treated with caution as they may not be statistically representative due to a large percentage of error assigned. These are shaded in the table above.

Appendix II – Questionnaire template

Questionnaire about Waiting Lists Management at Mater Dei Hospital

I <<name>> from the National Statistics Office. Currently, this Office is conducting a questionnaire on behalf of the National Audit Office (NAO) regarding waiting list management at Mater Dei Hospital. This survey is being performed with persons who have recently undergone an elective operation. You may already been informed by Mater Dei Hospital about this exercise.

<<Name and Surname >> was selected to participate in a survey which will only take five minutes of your time. The information required is about your most recent operation and will be treated confidential and only utilised for statistics purposes.
Can I speak to him/her?

Reference

1. Did you show any preference towards a particular consultant to do your operation? *(Tick one circle only)*

Yes	**O(1)**	
No	**O(2)**	**→ Go to question 3**

2. Were you allocated your desired consultant to do your operation? *(Tick one circle only)*

Yes	**O(1)**
No	**O(2)**

3. Did you retain the same consultant that was assigned to be responsible for your operation? *(Tick one circle only)*

Yes	**O(1)**	
No	**O(2)**	**→ Go to question 5**

4. Why did you retain this consultant? *(Tick one circle only)*

Due to his/her reputation	**O(1)**	**→ Go to question 6**
As I was a private client of this consultant	**O(2)**	**→ Go to question 7**
Due to his/her reputation and as I was a private client of this consultant	**O(3)**	
Others (Please specify) _____	**O(4)**	**→ Go to question 6**

5. Why you did not retain this consultant? *(Tick one circle only)*

Was visiting another consultant in a private clinic	**O(1)**	
There was a longer waiting time at the assigned consultant	**O(2)**	
Others (Please specify)	**O(3)**	_____

6. Were you already a client of the consultant assigned to you by Mater Dei Hospital? *(Tick one circle only)*

Yes	**O(1)**
No	**O(2)**
Do not know	**O(3)**

7. Did the consultant advise you that the operation may not necessarily be carried out by himself / herself? *(Tick one circle only)*

Yes	**O(1)**
No	**O(2)**
Do not know	**O(3)**

The impact of waiting on the *List*

8. Do you consider the time waiting (since you were placed on the Waiting List up to the date of your operation) was reasonable? *(Tick one circle only)*

Yes	**O(1)**	**→ Go to question 10**
No	**O(2)**	
Do not know	**O(3)**	

9. What do you consider to be a reasonable waiting time? *(The below answers are not be read to interviewee. Tick one circle only)*

Less than three months	**O(1)**	
Three months or more but less than six months	**O(2)**	
Six months or more but less than one year	**O(3)**	
One year or more	**O(4)**	
Others (Please specify)	**O(5)**	_____

10. Was it necessary to re-visit your consultant until your operation was carried out? *(Tick where applicable)*

Yes, at Mater Dei Hospital	**O(1)**
Yes, at a private clinic/hospital	**O(2)**
No	**O(3)**

Options available where to do the operation

Now, I am going to ask you a number of questions on the options available on where to do the operation.

11. Where did you do your operation? *(Tick one circle only)*

At Mater Dei Hospital	**O(1)**	**→ Go to question 13**
At a private clinic/hospital	**O(2)**	

12. As your operation was held in a private clinic/hospital, were you operated by the same consultant you had at Mater Dei Hospital? *(Tick one circle only)*

Yes	**O(1)**
No	**O(2)**

13. Were you given the option to decide whether to undergo your operation at Mater Dei Hospital or at a private clinic/hospital? *(Tick one circle only)*

Yes, I was offered the option and I accepted to have the operation conducted in a private clinic/hospital	**O(1)**
Yes, I was offered the option but I did not accept to have the operation conducted in a private clinic/hospital	**O(2)**
No, I was not offered the option	**O(3)**

Post Operation visits

14. In the post operation period, did you visit the consultant who was in charge of your elective operation for any post operation visits? *(Tick one circle only or 1 and 2)*

Yes, I went to Mater Dei Hospitals' outpatients	**O(1)**
Yes, I went to a private clinic/hospital	**O(2)**
No, I did not go for any post operation visits	**O(3)**

Satisfaction Levels

15. How satisfied were you with the service provided to you **prior** to your operation (e.g. when you visited the Outpatients Department)? *(Tick one circle only)*

Very satisfied	**O(1)**
Satisfied	**O(2)**
Unsatisfied	**O(3)**
Highly unsatisfied	**O(4)**
Do not know	**O(5)**

16. How satisfied were you **during** your stay at Mater Dei Hospital or the private clinic/hospital for the operation? *(Tick one circle only)*

Very satisfied	**O(1)**
Satisfied	**O(2)**
Unsatisfied	**O(3)**
Highly unsatisfied	**O(4)**
Do not know	**O(5)**

17. How satisfied you were with the service provided during the **post-operation** visits? *(Tick one circle only)*

Very satisfied	**O(1)**
Satisfied	**O(2)**
Unsatisfied	**O(3)**
Highly unsatisfied	**O(4)**
Do not know	**O(5)**

Demographics

18. How old are you? _____ years

19. What is your gender? *(Tick one circle only)*

Male	**O(1)**
Female	**O(2)**

20. What is your education level? *(Tick one circle only)*

None	**O(1)**
Prior to Primary/Primary	**O(2)**
Secondary	**O(3)**
Post-secondary/Not tertiary	**O(4)**
Tertiary	**O(5)**

21. What is your current work status? *(Tick one circle only)*

Employed	**O(1)**	
Self-employed	**O(2)**	
Student/Trainee	**O(3)**	
Retired	**O(4)**	
Cannot work due to illnes or disability	**O(5)**	
Take care of household and/or family	**O(6)**	
Other status (Please specify)	**O(7)**	_____

Other comments

22. Do you have any other comments related to the operation in question? *(Tick one circle only)*

Yes (Please specify)	**O(1)**	_____
No	**O(2)**	

Thank you for your time

Stħarriġ dwar il-ġestjoni tal-*waiting lists* fl-Isptar Mater Dei

Jien <<isem>> mill-Uffiċċju Nazzjonali tal-Istatistika. Bħalissa dan l-uffiċċju qed jagħmel stħarriġ f'isem l-Uffiċċju Nazzjonali tal-Verifika (NAO-National Audit Office), dwar il-ġestjoni tal-*waiting lists* fl-Isptar Mater Dei. Dan l-istħarriġ qed isir fost dawk il-persuni li għamlu xi tip ta' operazzjoni reċentament. Jista ikun li fil-ġranet li għaddew irċevejtu ittra mingħand l-isptar Mater Dei dwar dan.

<<Isem u kunjom>> ġie/t magħżul/a biex j/tieħu sehem f'dan l-istħarriġ li jieħu madwar 5 minuti biex jitlesta. L-informazzjoni miġbura dwar l-aħħar operazzjoni li għamilt hi kunfidenzjali u ser tintuża biss għal skopijiet ta' statistika.

Nista' nitkellem miegħu/magħha?

Riferiment

1. Kellek xi preferenza għall-konsulent li kellu joperak fl-Isptar Mater Dei? *(Immarka ċirku wieħed biss)*

Iva	**O(1)**	
Le	**O(2)**	→ **Mur Mistoqsija 3**

2. Ġejt allokat/a l-konsulent li xtaqt biex joperak? *(Immarka ċirku wieħed biss)*

Iva	**O(1)**
Le	**O(2)**

3. Żammejt l-istess konsulent li kellu jkun responsabbli mill-operazzjoni tiegħek? *(Immarka ċirku wieħed biss)*

Iva	**O(1)**	
Le	**O(2)**	→ **Mur Mistoqsija 5**

4. Għalfejn żammejt lil dan il-konsulent? *(Immarka ċirku wieħed biss)*

Minħabba r-reputazzjoni tajba tiegħu/tagħha	**O(1)**	**→ Mur Mistoqsija 6**
Kont klijent privat tiegħu/tagħha	**O(2)**	**→ Mur Mistoqsija 7**
Minħabba r-reputazzjoni tajba tiegħu/tagħha u kont klijent privat tiegħu/tagħha	**O(3)**	
Oħrajn (jekk jogħġbok speċifika) _____	**O(4)**	**→ Mur Mistoqsija 6**

5. Għalfejn ma żammejtx lil dan il-konsulent? *(Immarka ċirku wieħed biss)*

Kont klijent privat ta' konsulent ieħor	**O(1)**	
Iż-żmien ta' stennija għall-operazzjoni kien twil	**O(2)**	
Oħrajn (jekk jogħġbok speċifika)	**O(3)**	_____

6. Ġieli kont klijent privat tal-konsulent li tpoġġejt taħtu fl-Isptar Mater Dei? *(Immarka ċirku wieħed biss)*

Iva	**O(1)**
Le	**O(2)**
Ma nafx	**O(3)**

7. Avżak il-konsultent li jista' jkun li ma joperakx hu / hi? *(Immarka ċirku wieħed biss)*

Iva	**O(1)**
Le	**O(2)**
Ma nafx	**O(3)**

L-impatt tad-dewmien fuq il-*Waiting List*

8. Tqis li ż-żmien li domt tistenna għall-operazzjoni tiegħek (minn meta tpoġġejt fuq il-*waiting list* sad-data tal-operazzjoni), kien wieħed raġonevoli? *(Immarka ċirku wieħed biss)*

Iva	**O(1)**	**→ Mur Mistoqsija 10**
Le	**O(2)**	
Ma nafx	**O(3)**	

9. Xi tqis kellu jkun żmien raġonevoli? *(It-tweġibiet hawn isfel imsemmija, m'għandhomx jissemmew lil min ser jirrispondi. Immarka ċirku wieħed biss)*

Inqas minn tlett xhur	**O(1)**	
Tliet xhur jew iktar imma inqas minn sitt xhur	**O(2)**	
Sitt xhur jew iktar imma inqas minn sena	**O(3)**	
Sena jew iktar	**O(4)**	
Oħrajn (jekk jogħġbok speċifika)	**O(5)**	_____

10. Kellek terġa' żżur il-konsulent sakemm ġejt operat/a? *(Immarka kull fejn japplika)*

Iva, fl-Isptar Mater Dei	**O(1)**
Iva, fi sptar/klinika privat/a	**O(2)**
Le	**O(3)**

L-Għażla ta' fejn tagħmel l-operazzjoni tiegħek

Issa ser nagħmillek xi mistoqsijiet dwar l-għażla ta' fejn kellek tagħmel l-operazzjoni tiegħek.

11. Fejn għamilt l-operazzjoni tiegħek? *(Immarka ċirku wieħed biss)*

Fl-isptar Mater Dei	**O(1)**	→ **Mur Mistoqsija 13**
Fi sptar/klinika privat/a	**O(2)**	

12. Peress li ġejt operat/a fi sptar privat, ġejt operat/a mill-istess konsulent li eżaminak *(Immarka ċirku wieħed biss)*

Iva	**O(1)**
Le	**O(2)**

13. Ingħatajt l-għażla jekk tagħmilx l-operazzjoni tiegħek fl-isptar Mater Dei, jew inkella fi klinika/sptar privat? *(Immarka ċirku wieħed biss)*

Iva, kelli l-għażla u aċċettajt li nagħmilha fi sptar/klinika privat/a	**O(1)**
Iva, kelli l-għażla u m'aċċettajtx li nagħmilha fi sptar/klinika privat/a	**O(2)**
Le, ma kellix għażla	**O(3)**

Visti wara l-operazzjoni

14. Wara l-operazzjoni mort għal xi visti għand il-konsulent li kien responsabbli mill-operazzjoni tiegħek? *(Immarka kull fejn japplika)*

Iva, mort l-*outpatients* fl-isptar Mater Dei	**O(1)**
Iva, mort fi sptar/klinika privat/a	**O(2)**
Le, ma mortx iżjed għall-visti	**O(3)**

Livell ta' sodisfazzjoni

15. Kemm kont kuntent/a bil-livell ta' servizz li ngħatajt **qabel** l-operazzjoni (eż. fl-*outpatients)*? *(Immarka ċirku wieħed biss)*

Kuntent/a ħafna	**O(1)**
Kuntent/a	**O(2)**
Mhux kuntent/a	**O(3)**
Ma kont kuntent/a xejn	**O(4)**
Ma nafx	**O(5)**

16. Kemm kont kuntent/a bil-livell ta' servizz li ngħatajt **meta kont fl-Isptar Mater Dei jew fil-klinika/sptar privat biex tagħmel** l-operazzjoni? *(Immarka ċirku wieħed biss)*

Kuntent/a ħafna	**O(1)**
Kuntent/a	**O(2)**
Mhux kuntent/a	**O(3)**
Ma kont kuntent/a xejn	**O(4)**
Ma nafx	**O(5)**

17. Kemm kont kuntent/a bil-livell ta' servizz li ngħatajt **għall-visti ta' wara** l-operazzjoni? *(Immarka ċirku wieħed biss)*

Kuntent/a ħafna	**O(1)**
Kuntent/a	**O(2)**
Mhux kuntent/a	**O(3)**
Ma kont kuntent/a xejn	**O(4)**
Ma nafx	**O(5)**

Dettalji demografiċi

18. Kemm għandek żmien? _____ snin

19. X'inhu s-sess tiegħek? *(Immarka ċirku wieħed biss)*

Raġel	**O(1)**
Mara	**O(2)**

20. Liema huwa l-ogħla livell ta' edukazzjoni li temmejt b'suċċess? *(Immarka ċirku wieħed biss)*

Bla skola	**O(1)**
Qabel il-Primarja / Primarja	**O(2)**
Sekondarja	**O(3)**
Post-sekondarja / Mhux terzjarja	**O(4)**
Terzjarja	**O(5)**

21. X'inhu l-istat ta' impjieg tiegħek? *(Immarka ċirku wieħed biss)*

Naħdem	**O(1)**	
Naħdem għal rasi	**O(2)**	
Student/a jew persuna fi żmien ta' taħriġ	**O(3)**	
Irtirat	**O(4)**	
Ma nistax naħdem minħabba mard jew diżabilità	**O(5)**	
Nieħu ħsieb id-dar u/jew il-familja	**O(6)**	
Stat ieħor (jekk jogħġbok speċifika)	**O(7)**	_____

Kummenti oħrajn

22. Tixtieq tgħaddi xi kumment/i oħra relatat/i ma' din l-operazzjoni?

Iva (jekk jogħġbok speċifika)	**O(1)**	_____
Le	**O(2)**	

Grazzi tal-ħin tiegħek

Appendix III – Survey results

This appendix presents the results of the Waiting List Management at Mater Dei Hospital survey. The table number refers to the corresponding question in the survey. The questions are also reproduced within the heading of each table. Results pertaining to each question are presented in four different formats.

The results presented reflect the weighted replies as extrapolated on the population of 24,605 persons who underwent elective surgery in the four Departments under review, between 1 April 2011 and 31 March 2012. The Departments reviewed for this performance audit were the Cardiology, Ophthalmology, Orthopeadic and Surgical. Estimates of precision relating to the survey are indicated in Appendix I.

The first two formats of the responses presented for each question, depicted by Tables 'a' and 'b' present the weighted response as a percentage of the total population. For example, Table 1a shows that four and 10 per cent of the 24,605 patients who underwent elective surgery at the Cardiology Department responded yes and no respectively to survey question 1.

The third and fourth tables, that is 'c' and 'd', show the weighted responses as a percentage of the departmental and categorisation population. For example, Table 1c illustrates that 27 and 73 per cent of the 3,462 patients who underwent elective surgery at the Cardiology Department responded yes and no respectively to question 1 in the survey.

Reference

Table 1a: Did you show any preference towards a particular consultant to do your intervention?

Department	Yes	%	No	%	Total	%
Cardiology	926	4	2,536	10	3,462	14
Ophthalmology – MDH	1,636	7	2,653	11	4,289	17
Ophthalmology - Outsourcing	214	1	496	2	710	3
Orthopaedics	1,619	7	1,568	6	3,187	13
Surgical	3,645	15	9,312	38	12,957	53
Total	8,039	33	16,566	67	24,605	100

Table 1b: Did you show any preference towards a particular consultant to do your intervention?

Category	Yes	%	No	%	Total	%
Complex Major Operation (CMO)	357	1	1,025	4	1,382	6
Major+	1,786	7	2,739	11	4,525	18
Major	733	3	1,559	6	2,292	9
Intermediate	3,434	14	6,270	25	9,704	39
Minor	1,729	7	4,973	20	6,702	27
Total	8,039	33	16,566	67	24,605	100

Table 1c: Did you show any preference towards a particular consultant to do your intervention? (By Department)

Department	Yes	%	No	%	Total	%
Cardiology	926	27	2,536	73	3,462	100
Ophthalmology – MDH	1,636	38	2,653	62	4,289	100
Ophthalmology - Outsourcing	214	30	496	70	710	100
Orthopaedics	1,619	51	1,568	49	3,187	100
Surgical	3,645	28	9,312	72	12,957	100
Total	8,039	33	16,566	67	24,605	100

Table 1d: Did you show any preference towards a particular consultant to do your intervention? (By Category)

Category	Yes	%	No	%	Total	%
CMO	357	26	1,025	74	1,382	100
Major+	1,786	39	2,739	61	4,525	100
Major	733	32	1,559	68	2,292	100
Intermediate	3,434	35	6,270	65	9,704	100
Minor	1,729	26	4,973	74	6,702	100
Total	8,039	33	16,566	67	24,605	100

Table 2a: Were you allocated your desired consultant to do your intervention?

Department	Yes	%	No	%	Total	%
Cardiology	673	8	253	3	926	12
Ophthalmology – MDH	1,334	17	302	4	1,636	20
Ophthalmology – Outsourcing	175	2	39	0	214	3
Orthopaedics	1,394	17	225	3	1,619	20
Surgery	3,016	38	629	8	3,645	45
Total	6,592	82	1,447	18	8,039	100

Table 2b: Were you allocated your desired consultant to do your intervention?

Category	Yes	%	No	%	Total	%
CMO	321	4	36	0	357	4
Major+	1,563	19	224	3	1,786	22
Major	628	8	105	1	733	9
Intermediate	2,537	32	898	11	3,434	43
Minor	1,543	19	186	2	1,729	22
Total	6,592	82	1,447	18	8,039	100

Table 2c: Were you allocated your desired consultant to do your intervention? (By Department)

Department	Yes	%	No	%	Total	%
Cardiology	673	73	253	27	926	100
Ophthalmology – MDH	1,334	82	302	18	1,636	100
Ophthalmology – Outsourcing	175	82	39	18	214	100
Orthopaedics	1,394	86	225	14	1,619	100
Surgical	3,016	83	629	17	3,645	100
Total	6,592	82	1,447	18	8,039	100

Table 2d: Were you allocated your desired consultant to do your intervention? (By Category)

Category	Yes	%	No	%	Total	%
CMO	321	90	36	10	357	100
Major+	1,563	87	224	13	1,786	100
Major	628	86	105	14	733	100
Intermediate	2,537	74	898	26	3,434	100
Minor	1,543	89	186	11	1,729	100
Total	6,592	82	1,447	18	8,039	100

Table 3a: Did you retain the same consultant that was assigned to be responsible for your operation?

Department	Yes	%	No	%	Total	%
Cardiology	3,238	13	224	1	3,462	14
Ophthalmology – MDH	3,936	16	353	1	4,289	17
Ophthalmology – Outsourcing	586	2	124	1	710	3
Orthopaedics	2,976	12	211	1	3,187	13
Surgical	11,855	48	1,102	4	12,957	53
Total	22,591	92	2,014	8	24,605	100

Table 3b: Did you retain the same consultant that was assigned to be responsible for your operation?

Category	Yes	%	No	%	Total	%
CMO	1,320	5	62	0	1,382	6
Major+	4,161	17	364	1	4,525	18
Major	2,022	8	270	1	2,292	9
Intermediate	8,935	36	769	3	9,704	39
Minor	6,153	25	549	2	6,702	27
Total	22,591	92	2,014	8	24,605	100

Table 3c: Did you retain the same consultant that was assigned to be responsible for your operation? (By Department)

Department	Yes	%	No	%	Total	%
Cardiology	3,238	94	224	6	3,462	100
Ophthalmology – MDH	3,936	92	353	8	4,289	100
Ophthalmology – Outsourcing	586	83	124	17	710	100
Orthopaedics	2,976	93	211	7	3,187	100
Surgery	11,855	91	1,102	9	12,957	100
Total	22,591	92	2,014	8	24,605	100

Table 3d: Did you retain the same consultant that was assigned to be responsible for your operation? (By Category)

Category	Yes	%	No	%	Total	%
CMO	1,320	96	62	4	1,382	100
Major+	4,161	92	364	8	4,525	100
Major	2,022	88	270	12	2,292	100
Intermediate	8,935	92	769	8	9,704	100
Minor	6,153	92	549	8	6,702	100
Total	22,591	92	2,014	8	24,605	100

Table 4a: Why did you retain this consultant?

Department	Good reputation		Good reputation and I was a private client of the consultant		I was a private client of the consultant		Kept same consultant assigned to me by hospital		Trust in retained consultant, and/or satisfied by previous interventions		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	1,238	5	243	1	41	0	1,260	6	218	1	238	1	3,238	14
Ophthalmology - MDH	1,235	5	657	3	307	1	1,379	6	310	1	47	0	3,936	17
Ophthalmology – Outsourcing	198	1	66	0	54	0	159	1	89	0	19	0	586	3
Orthopaedics	895	4	613	3	444	2	686	3	238	1	101	0	2,976	13
Surgical	3,064	14	1,164	5	1,450	6	4,707	21	1,067	5	403	2	11,855	52
Total	6,631	29	2,743	12	2,296	10	8,191	36	1,922	9	808	4	22,591	100

Table 4b: Why did you retain this consultant?

Category	Good reputation		Good reputation and I was a private client of the consultant		I was a private client of the consultant		Kept same consultant assigned to me by hospital		Trust in retained consultant, and/or satisfied by previous interventions		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	528	2	70	0	27	0	463	2	102	0	130	1	1,320	6
Major+	1,429	6	609	3	450	2	1,193	5	449	2	30	0	4,161	18
Major	687	3	181	1	289	1	656	3	173	1	35	0	2,022	9
Intermediate	2784	12	1,012	4	1,067	5	3,042	13	570	3	460	2	8,935	40
Minor	1,203	5	871	4	463	2	2,836	13	628	3	154	1	6,153	27
Total	6,631	29	2,743	12	2,296	10	8,191	36	1,922	9	808	4	22,591	100

Table 4c: Why did you retain this consultant?
(By Department)

Department	Good reputation		Good reputation and I was a private client of the consultant		I was a private client of the consultant		Kept same consultant assigned to me by hospital		Trust in retained consultant, and/or satisfied by previous interventions		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	1,238	38	243	8	41	1	1,260	39	218	6	238	8	3,238	100
Ophthalmology – MDH	1,235	32	657	16	307	8	1,379	35	310	8	47	1	3,936	100
Ophthalmology – Outsourcing	198	34	66	11	54	9	159	27	89	15	19	4	586	100
Orthopaedics	895	30	613	21	444	15	686	23	238	8	101	3	2,976	100
Surgical	3,064	26	1,164	10	1,450	12	4,707	40	1,067	9	403	3	11,855	100
Total	6,631	29	2,743	12	2,296	10	8,191	36	1,922	9	808	4	22,591	100

Table 4d: Why did you retain this consultant?
(By Category)

Category	Good reputation		Good reputation and I was a private client of the consultant		I was a private client of the consultant		Kept same consultant assigned to me by hospital		Trust in retained consultant, and/or satisfied by previous interventions		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	528	40	70	5	27	2	463	35	102	8	130	10	1,320	100
Major+	1,429	34	609	15	450	11	1,193	29	449	11	30	1	4,161	100
Major	687	34	181	9	289	14	656	32	173	9	35	2	2,022	100
Intermediate	2784	31	1,012	11	1,067	12	3,042	34	570	6	460	5	8,935	100
Minor	1,203	20	871	14	463	8	2,836	46	628	10	154	2	6,153	100
Total	6,631	29	2,743	12	2,296	10	8,191	36	1,922	9	808	4	22,591	100

Table 5a: Why you did not retain this consultant?

Department	Another consultant's client		Longer waiting time		Others		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	0	0	13	1	211	10	224	11
Ophthalmology – MDH	0	0	27	1	326	16	353	18
Orthopaedics	11	1	34	2	165	8	211	10
Ophthalmology – Outsourcing	0	0	35	2	89	4	124	6
Surgical	44	2	196	10	863	43	1,102	55
Total	55	3	305	15	1,654	82	20,14	100

Table 5b: Why you did not retain this consultant?

Category	Another consultant's client		Longer waiting time		Others		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	0	0	13	1	49	2	62	3
Major+	8	0	45	2	311	15	364	18
Major	46	2	60	3	164	8	270	13
Intermediate	0	0	164	8	605	30	769	38
Minor	0	0	23	1	526	26	549	27
Total	55	3	305	15	1,654	82	2,014	100

Table 5c: Why you did not retain this consultant? (By Department)

Department	Another consultant's client		Longer waiting time		Others		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	0	0	13	6	211	94	224	100
Ophthalmology – MDH	0	0	27	8	326	92	353	100
Ophthalmology – Outsourcing	0	0	35	28	89	72	124	100
Orthopaedics	11	6	34	16	165	78	211	100
Surgical	44	4	196	18	863	78	1,102	100
Total	55	3	305	15	1,654	82	2,014	100

Table 5d: Why you did not retain this consultant? (By Category)

Category	Another consultant's client		Longer waiting time		Others		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	0	0	13	21	49	79	62	100
Major+	8	2	45	12	311	85	364	100
Major	46	17	60	22	164	61	270	100
Intermediate	0	0	164	21	605	79	769	100
Minor	0	0	23	4	526	96	549	100
Total	55	3	305	15	1,654	82	2,014	100

Table 6a: Were you already a client of the consultant assigned to you by Mater Dei Hospital?

Department	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	660	3	2,518	13	0	0	3,178	16
Ophthalmology – MDH	1,155	6	2,130	11	40	0	3,325	17
Ophthalmology – Outsourcing	105	1	485	2	0	0	590	3
Orthopaedics	831	4	1,299	7	0	0	2,130	11
Surgical	2,834	14	7,484	38	26	0	10,344	53
Total	5,584	29	13,916	71	66	0	19,566	100

Table 6b: Were you already a client of the consultant assigned to you by Mater Dei Hospital?

Category	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	268	1	1,018	5	0	0	1,285	7
Major+	1,148	6	2,292	12	26	0	3,466	18
Major	424	2	1,398	7	0	0	1,821	9
Intermediate	2,051	10	5,574	28	0	0	7,625	39
Minor	1,694	9	3,634	19	40	0	5,369	27
Total	5,584	29	13,916	71	66	0	19,566	100

Table 6c: Were you already a client of the consultant assigned to you by Mater Dei Hospital? (By Department)

Department	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	660	21	2,518	79	0	0	3,178	100
Ophthalmology – MDH	1,155	35	2,130	64	40	1	3,325	100
Ophthalmology – Outsourcing	105	18	485	82	0	0	590	100
Orthopaedics	831	39	1,299	61	0	0	2,130	100
Surgical	2,834	28	7,484	72	26	0	10,344	100
Total	5,584	29	13,916	71	66	0	19,566	100

Table 6d: Were you already a client of the consultant assigned to you by Mater Dei Hospital? (By Category)

Category	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	268	21	1,018	79	0	0	1,285	100
Major+	1,148	33	2,292	66	26	1	3,466	100
Major	424	23	1,398	77	0	0	1,821	100
Intermediate	2,051	27	5,574	73	0	0	7,625	100
Minor	1,694	32	3,634	68	40	1	5,369	100
Total	5,584	29	13,916	71	66	0	19,566	100

Table 7a: Did the consultant advise you that the operation may not necessarily be carried out by himself / herself?

Department	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	645	3	2,452	10	365	1	3,462	14
Ophthalmology – MDH	747	3	3,104	13	438	2	4,289	17
Ophthalmology – Outsourcing	125	1	551	2	35	0	710	3
Orthopaedics	900	4	2075	8	211	1	3,187	13
Surgical	3,178	13	8,444	34	1,334	5	12,957	53
Total	5,594	23	16,627	68	2,384	10	24,605	100

Table 7b: Did the consultant advise you that the operation may not necessarily be carried out by himself / herself?

Category	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	179	1	1,090	4	113	0	1,382	6
Major+	680	3	3,372	14	473	2	4,525	18
Major	485	2	1,491	6	316	1	2,292	9
Intermediate	2,744	11	5,938	24	1,021	4	9,704	39
Minor	1,505	6	4,736	19	461	2	6,702	27
Total	5,594	23	16,627	68	2,384	10	24,605	100

Table 7c: Did the consultant advise you that the operation may not necessarily be carried out by himself / herself?
(By Department)

Department	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	645	19	2,452	71	365	10	3,462	100
Ophthalmology – MDH	747	17	3,104	73	438	10	4,289	100
Ophthalmology – Outsourcing	125	1	551	2	35	5	710	100
Orthopaedics	900	4	2075	8	211	7	3,187	100
Surgical	3,178	25	8,444	65	1,334	10	12,957	100
Total	5,594	23	16,627	67	2,384	10	24,605	100

Table 7d: Did the consultant advise you that the operation may not necessarily be carried out by himself / herself?
(By Category)

Category	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	179	13	1,090	79	113	8	1,382	100
Major+	680	15	3,372	75	473	10	4,525	100
Major	485	21	1,491	65	316	14	2,292	100
Intermediate	2,744	28	5,938	61	1,021	11	9,704	100
Minor	1,505	22	4,736	71	461	7	6702	100
Total	5,594	23	16,627	68	2,384	10	24,605	100

The impact of waiting on the List

Table 8a: Do you consider the time waiting (since you were placed on the Waiting List up to the date of your intervention) was reasonable?

Department	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	2,932	12	369	1	161	1	3,462	14
Ophthalmology – MDH	3,228	13	994	4	67	0	4,289	17
Ophthalmology – Outsourcing	466	2	205	1	39	0	710	3
Orthopaedics	1,823	7	1,276	5	88	0	3,187	13
Surgical	10,298	42	2,641	11	18	0	12,957	53
Total	18,747	76	5,485	22	373	2	24,605	100

Table 8b: Do you consider the time waiting (since you were placed on the Waiting List up to the date of your intervention) was reasonable?

Category	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	1,164	5	196	1	22	0	1,382	6
Major+	3,222	13	1,174	5	129	1	4,525	18
Major	2,042	8	245	1	5	0	2,292	9
Intermediate	6,921	28	2,565	10	218	1	9,704	39
Minor	5,398	22	1,304	5	0	0	6,702	27
Total	18,747	76	5,485	22	373	2	24,605	100

Table 8c: Do you consider the time waiting (since you were placed on the Waiting List up to the date of your intervention) was reasonable? (By Department)

Department	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	2,932	85	369	11	161	5	3,462	100
Ophthalmology – MDH	3,228	75	994	23	67	2	4,289	100
Ophthalmology – Outsourcing	466	66	205	29	39	5	710	100
Orthopaedics	1,823	57	1,276	40	88	3	3,187	100
Surgical	10,298	79	2,641	20	18	0	12,957	100
Total	18,747	76	5,485	22	373	2	24,605	100

Table 8d: Do you consider the time waiting (since you were placed on the Waiting List up to the date of your intervention) was reasonable? (By Category)

Category	Yes		No		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	1,164	84	196	14	22	2	1,382	100
Major+	3,222	71	1,174	26	129	3	4,525	100
Major	2,042	89	245	11	5	0	2,292	100
Intermediate	6,921	71	2,565	26	218	2	9,704	100
Minor	5,398	81	1,304	19	0	0	6,702	100
Total	18,747	76	5,485	22	373	2	24,605	100

Table 9a: What do you consider to be a reasonable waiting time?

Department	Less than 3 months		3 months or more but less than 6 months		6 months or more but less than 1 year		1 year or more		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	348	6	22	0	13	0	7	0	139	2	530	9
Ophthalmology – MDH	180	3	317	5	178	3	149	3	237	4	1,061	18
Ophthalmology – Outsourcing	31	1	70	1	50	1	74	1	19	0	244	4
Orthopaedics	499	9	239	4	351	6	180	3	95	2	1,364	23
Surgical	951	16	529	9	626	11	92	2	461	8	2,659	45
Total	2,008	34	1,177	20	1,218	21	503	9	952	16	5,858	100

Table 9b: What do you consider to be a reasonable waiting time?

Category	Less than 3 months		3 months or more but less than 6 months		6 months or more but less than 1 year		1 year or more		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	96	2	32	1	26	0	7	0	57	1	218	4
Major+	188	3	373	6	184	3	330	6	227	4	1,303	22
Major	90	2	35	1	60	1	20	0	44	1	250	4
Intermediate	1,296	22	522	9	438	7	53	1	474	8	2,783	48
Minor	337	6	215	4	510	9	92	2	150	3	1,304	22
Total	2,008	34	1,177	20	1,218	21	503	9	952	16	5,858	100

Table 9c: What do you consider to be a reasonable waiting time? (By Department)

Department	Less than 3 months		3 months or more but less than 6 months		6 months or more but less than 1 year		1 year or more		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	348	66	22	4	13	2	7	1	139	26	530	100
Ophthalmology – MDH	180	17	317	30	178	17	149	14	237	22	1,061	100
Ophthalmology – Outsourcing	31	13	70	29	50	21	74	30	19	8	244	100
Orthopaedics	499	37	239	18	351	26	180	13	95	7	1,364	100
Surgical	951	36	529	20	626	24	92	3	461	17	2,659	100
Total	2,008	34	1,177	20	1,218	21	503	9	952	16	5,858	100

Table 9d: What do you consider to be a reasonable waiting time? (By Category)

Category	Less than 3 months		3 months or more but less than 6 months		6 months or more but less than 1 year		1 year or more		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	96	44	32	15	26	12	7	3	57	26	218	100
Major+	188	14	373	29	184	14	330	25	227	17	1,303	100
Major	90	36	35	14	60	24	20	8	44	17	250	100
Intermediate	1,296	47	522	19	438	16	53	2	474	17	2,783	100
Minor	337	26	215	16	510	39	92	7	150	11	1,304	100
Total	2,008	34	1,177	20	1,218	21	503	9	952	16	5,858	100

Table 10a: Was it necessary to re-visit your consultant until your operation was carried out?

Department	Yes		No		Total	
	No.	%	No.	%	No.	%
Cardiology	1,478	6	1,984	8	3,462	14
Ophthalmology – MDH	2,720	11	1,569	6	4,289	17
Ophthalmology – Outsourcing	392	2	318	1	710	3
Orthopaedics	1,750	7	1,437	6	3,187	13
Surgery	6,789	28	6,168	25	12,957	53
Total	13,129	53	11,476	47	24,605	100

Table 10b: Was it necessary to re-visit your consultant until your operation was carried out?

Category	Yes		No		Total	
	No.	%	No.	%	No.	%
CMO	790	3	592	2	1,382	6
Major+	2,815	11	1,710	7	4,525	18
Major	1,541	6	751	3	2,292	9
Intermediate	4,191	17	5,513	22	9,704	39
Minor	3,793	15	2,909	12	6,702	27
Total	13,129	53	11,476	47	24,605	100

Table 10c: Was it necessary to re-visit your consultant until your operation was carried out? (By Department)

Department	Yes		No		Total	
	No.	%	No.	%	No.	%
Cardiology	1,478	43	1,984	57	3,462	100
Ophthalmology – MDH	2,720	63	1,569	37	4,289	100
Ophthalmology – Outsourcing	392	55	318	45	710	100
Orthopaedics	1,750	55	1,437	45	3,187	100
Surgical	6,789	52	6,168	48	12,957	100
Total	13,129	53	11,476	47	24,605	100

Table 10d: Was it necessary to re-visit your consultant until your operation was carried out? (By Category)

Category	Yes		No		Total	
	No.	%	No.	%	No.	%
CMO	790	57	592	43	1,382	100
Major+	2,815	62	1,710	38	4,525	100
Major	1,541	67	751	33	2,292	100
Intermediate	4,191	43	5,513	57	9,704	100
Minor	3,793	57	2,909	43	6,702	100
Total	13,129	53	11,476	47	24,605	100

Table 10e: Was it necessary to re-visit your consultant until your operation was carried out? – *combination*[27]

Department	MDH		Private clinic / hospital		Both at MDH and private clinic / hospital		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	1,076	8	234	2	168	1	1,478	11
Ophthalmology – MDH	2,138	16	463	4	120	1	2,720	21
Ophthalmology – Outsourcing	338	3	54	0	0	0	392	3
Orthopaedics	1,181	9	492	4	77	1	1,750	13
Surgical	5,401	41	626	5	762	6	6,789	52
Total	10,134	77	1,869	14	1,126	9	13,129	100

Table 10f: Was it necessary to re-visit your consultant until your operation was carried out? – *combination*

Category	MDH		Private clinic / hospital		Both at MDH and private clinic / hospital		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	613	5	82	1	95	1	790	6
Major+	2,126	16	580	4	108	1	2,815	21
Major	1,398	11	81	1	61	0	1,541	12
Intermediate	2,845	22	865	7	481	4	4,191	32
Minor	3,152	24	260	2	381	3	3,793	29
Total	10,134	77	1,869	14	1,126	9	13,129	100

Table 10g: Was it necessary to re-visit your consultant until your operation was carried out? – *combination* (By Department)

Department	MDH		Private clinic / hospital		Both at MDH and private clinic / hospital		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	1,076	73	234	16	168	11	1,478	100
Ophthalmology – MDH	2,138	79	463	17	120	4	2,720	100
Ophthalmology – Outsourcing	338	86	54	14	0	0	392	100
Orthopaedics	1,181	67	492	28	77	4	1,750	100
Surgical	5,401	80	626	9	762	11	6,789	100
Total	10,134	77	1,869	14	1,126	9	13,129	100

Table 10h: Was it necessary to re-visit your consultant until your operation was carried out? – *combination* (By Category)

Category	MDH		Private clinic / hospital		Both at MDH and private clinic / hospital		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	613	5	82	1	95	1	790	100
Major+	2,126	16	580	4	108	1	2,815	100
Major	1,398	11	81	1	61	0	1,541	100
Intermediate	2,845	22	865	7	481	4	4,191	100
Minor	3,152	24	260	2	381	3	3,793	100
Total	10,134	77	1,869	14	1,126	9	13,129	100

[27] Tables 10e – 10h relate to sub-responses related to Question 10.

Options available where to do the intervention

Table 13a: Were you given the option to decide whether to undergo your operation at Mater Dei Hospital or at a private clinic/hospital?

Department	Yes, option offered and accepted		Yes, option offered but rejected		No		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	69	0	136	1	3,257	13	3,462	14
Ophthalmology	463	2	291	1	4,245	17	4,999	20
Orthopaedics	0	0	238	1	2,949	12	3,187	13
Surgical	34	0	969	4	11,954	49	12,957	53
Total	565	2	1,635	7	22,405	91	24,605	100

Post operation visits

Table 14a: In the post operation period, did you visit the consultant who was in charge of your elective operation for any post operation visits?

Department	Yes		No		Total	
	No.	%	No.	%	No.	%
Cardiology	2,814	11	648	3	3,462	14
Ophthalmology – MDH	3,611	15	678	3	4,289	17
Ophthalmology – Outsourcing	481	2	229	1	710	3
Orthopaedics	2,392	10	795	3	3,187	13
Surgical	10,782	44	2,175	9	12,957	53
Total	20,080	82	4,525	18	24,605	100

Table 14b: In the post operation period, did you visit the consultant who was in charge of your elective operation for any post operation visits?

Category	Yes		No		Total	
	No.	%	No.	%	No.	%
CMO	1,258	5	124	1	1,382	6
Major+	3,697	15	828	3	4,525	18
Major	2,068	8	224	1	2,292	9
Intermediate	7,623	31	2,081	8	9,704	39
Minor	5,435	22	1,267	5	6,702	27
Total	20,080	82	4,525	18	24,605	100

Table 14c: In the post operation period, did you visit the consultant who was in charge of your elective operation for any post operation visits?
(By Department)

Department	Yes		No		Total	
	No.	%	No.	%	No.	%
Cardiology	2,814	81	648	19	3,462	100
Ophthalmology – MDH	3,611	84	678	16	4,289	100
Ophthalmology – Outsourcing	481	68	229	32	710	100
Orthopaedics	2,392	75	795	25	3,187	100
Surgical	10,782	83	2,175	17	12,957	100
Total	20,080	82	4,525	18	24,605	100

Table 14d: In the post operation period, did you visit the consultant who was in charge of your elective operation for any post operation visits?
(By Category)

Category	Yes		No		Total	
	No.	%	No.	%	No.	%
CMO	1,258	91	124	9	1,382	100
Major+	3,697	82	828	18	4,525	100
Major	2,068	90	224	10	2,292	100
Intermediate	7,623	79	2,081	21	9,704	100
Minor	5,435	81	1,267	19	6,702	100
Total	20,080	82	4,525	18	24,605	100

Table 14e: In the post operation period, did you visit the consultant who was in charge of your elective operation for any post operation visits? – *combination*[28]

Department	MDH		Private clinic / hospital		Both at MDH and private clinic / hospital		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	2,322	12	286	1	206	1	2,814	14
Ophthalmology – MDH	2,953	15	368	2	291	1	3,611	18
Ophthalmology – Outsourcing	342	2	74	0	66	0	481	2
Orthopaedics	2,021	10	243	1	128	1	2,392	12
Surgical	8,672	43	941	5	1,169	6	10,782	54
Total	16,309	81	1,912	10	1,860	9	20,080	100

Table 14f: In the post operation period, did you visit the consultant who was in charge of your elective operation for any post operation visits? – *combination*

Category	MDH		Private clinic / hospital		Both at MDH and private clinic / hospital		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	1,030	5	104	1	125	1	1,258	6
Major+	3,006	15	437	2	253	1	3,697	18
Major	1,810	9	154	1	104	1	2,068	10
Intermediate	6,063	30	838	4	722	4	7,623	38
Minor	4,400	22	379	2	656	3	5,435	27
Total	16,309	81	1,912	10	1,860	9	20,080	100

Table 14g: In the post operation period, did you visit the consultant who was in charge of your elective operation for any post operation visits? – *combination*
(By Department)

Department	MDH		Private clinic / hospital		Both at MDH and private clinic / hospital		Total	
	No.	%	No.	%	No.	%	No.	%
Cardiology	2,322	83	286	10	206	7	2,814	100
Ophthalmology – MDH	2,953	82	368	10	291	8	3,611	100
Ophthalmology – Outsourcing	342	71	74	15	66	14	481	100
Orthopaedics	2,021	84	243	10	128	5	2,392	100
Surgical	8,672	80	941	9	1,169	11	10,782	100
Total	16,309	81	1,912	10	1,860	9	20,080	100

Table 14h: In the post operation period, did you visit the consultant who was in charge of your elective operation for any post operation visits? – *combination*
(By Category)

Category	MDH		Private clinic / hospital		Both at MDH and private clinic / hospital		Total	
	No.	%	No.	%	No.	%	No.	%
CMO	1,030	82	104	8	125	10	1,258	100
Major+	3,006	81	437	12	253	7	3,697	100
Major	1,810	88	154	7	104	5	2,068	100
Intermediate	6,063	80	838	11	722	9	7,623	100
Minor	4,400	81	379	7	656	12	5,435	100
Total	16,309	81	1,912	10	1,860	9	20,080	100

[28] Tables 14e – 14h relate to sub-responses related to Question 14.

Satisfaction levels

Table 15a: How satisfied were you with the service provided to you prior to your operation (e.g. when you visited the outpatients department)?

Department	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	1,769	7	1,388	6	127	1	79	0	99	0	3,462	14
Ophthalmology – MDH	1,899	8	1,975	8	134	1	40	0	241	1	4289	17
Ophthalmology – Outsourcing	353	1	248	1	109	0	0	0	0	0	710	3
Orthopaedics	1,086	4	1,540	6	127	1	145	1	290	1	3,187	13
Surgical	5,250	21	6,106	25	1,404	6	22	0	175	1	12,957	53
Total	10,356	42	11,257	46	1,901	8	286	1	805	3	24,605	100

Table 15b: How satisfied were you with the service provided to you prior to your operation (e.g. when you visited the outpatients department)?

Category	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	801	3	489	2	41	0	14	0	37	0	1,382	6
Major+	2,181	9	1,812	7	291	1	11	0	231	1	4,525	18
Major	1,201	5	959	4	65	0	14	0	54	0	2,292	9
Intermediate	3,576	15	4,705	19	802	3	200	1	421	2	9,704	39
Minor	2,598	11	3,292	13	702	3	48	0	63	0	6,702	27
Total	10,356	42	11,257	46	1,901	8	286	1	805	3	24,605	100

Table 15c: How satisfied were you with the service provided to you prior to your operation (e.g. when you visited the outpatients department)?
(By Department)

Department	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	1,769	51	1,388	40	127	4	79	2	99	3	3,462	100
Ophthalmology – MDH	1,899	44	1,975	46	134	3	40	1	241	6	4,289	100
Ophthalmology – Outsourcing	353	50	248	35	109	15	0	0	0	0	710	100
Orthopaedics	1,086	34	1,540	48	127	4	145	5	290	9	3,187	100
Surgical	5,250	41	6,106	47	1,404	11	22	0	175	1	12,957	100
Total	10,356	42	11,257	46	1,901	8	286	1	805	3	24,605	100

Table 15d: How satisfied were you with the service provided to you prior to your operation (e.g. when you visited the outpatients department)?
(By Category)

Category	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	801	58	489	35	41	3	14	1	37	3	1,382	100
Major+	2,181	48	1,812	40	291	6	11	0	231	5	4,525	100
Major	1,201	52	959	42	65	3	14	1	54	2	2,292	100
Intermediate	3,576	37	4,705	48	802	8	200	2	421	4	9,704	100
Minor	2,598	39	3,292	49	702	10	48	1	63	1	6,702	100
Total	10,356	42	11,257	46	1,901	8	286	1	805	3	24,605	100

Table 16a: How satisfied were you during your stay at Mater Dei Hospital or the private clinic/hospital for the operation?

Department	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	2,191	9	1,174	5	83	0	0	0	13	0	3,462	14
Ophthalmology – MDH	2,263	9	1,620	7	319	1	45	0	41	0	4,289	17
Ophthalmology – Outsourcing	264	1	314	1	59	0	0	0	74	0	710	3
Orthopaedics	1,548	6	1,475	6	79	0	63	0	22	0	3,187	13
Surgery	6,117	25	6,228	25	487	2	6	0	119	0	12,957	53
Total	12,384	50	10,812	44	1,026	4	114	0	269	1	24,605	100

Table 16b: How satisfied were you during your stay at Mater Dei Hospital or the private clinic/hospital for the operation?

Category	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	841	3	509	2	6	0	8	0	18	0	1,382	6
Major+	2,520	10	1,634	7	277	1	0	0	93	0	4,525	18
Major	1,293	5	882	4	113	0	0	0	4	0	2,292	9
Intermediate	4,724	19	4,812	20	112	0	53	0	4	0	9,704	39
Minor	3,006	12	2,976	12	518	2	53	0	150	1	6,702	27
Total	12,384	50	10,812	44	1,026	4	114	0	269	1	24,605	100

Table 16c: How satisfied were you during your stay at Mater Dei Hospital or the private clinic/hospital for the operation? (By Department)

Department	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	2,191	63	1,174	34	83	2	0	0	13	0	3,462	100
Ophthalmology – MDH	2,263	53	1,620	38	319	7	45	1	41	1	4,289	100
Ophthalmology – Outsourcing	264	37	314	44	59	8	0	0	74	10	710	100
Orthopaedics	1,548	49	1,475	46	79	2	63	2	22	1	3,187	100
Surgery	6,117	47	6,228	48	487	4	6	0	119	1	12,957	100
Total	12,384	50	10,812	44	1,026	4	114	0	269	1	24,605	100

Table 16d: How satisfied were you during your stay at Mater Dei Hospital or the private clinic/hospital for the operation? (By Category)

Category	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	841	61	509	37	6	0	8	1	18	1	1,382	100
Major+	2,520	56	1,634	36	277	6	0	0	93	2	4,525	100
Major	1,293	56	882	38	113	5	0	0	4	0	2,292	100
Intermediate	4,724	49	4,812	50	112	1	53	1	4	0	9,704	100
Minor	3,006	45	2,976	44	518	8	53	1	150	2	6,702	100
Total	12,384	50	10,812	44	1,026	4	114	0	269	1	24,605	100

Table 17a: How satisfied you were with the service provided during the post-operation visits?

Department	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	1,638	7	1,253	5	252	1	32	0	287	1	3,462	14
Ophthalmology – MDH	1,587	6	1,935	8	373	2	119	0	274	1	4,289	17
Ophthalmology – Outsourcing	318	1	322	1	55	0	0	0	15	0	710	3
Orthopaedics	971	4	1,323	5	323	1	198	1	371	2	3,187	13
Surgical	4,113	17	6,204	25	1,307	5	332	1	1,001	4	12,957	53
Total	8,627	35	11,037	45	2,310	9	682	3	1,949	8	24,605	100

Table 17b: How satisfied you were with the service provided during the post-operation visits?

Category	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	590	2	581	2	98	0	52	0	61	0	1,382	6
Major+	1,917	8	1,930	8	362	1	105	0	211	1	4,525	18
Major	931	4	1,021	4	138	1	103	0	99	0	2,292	9
Intermediate	3,211	13	4,509	18	641	3	375	2	969	4	9,704	39
Minor	1,978	8	2,997	12	1,072	4	46	0	608	2	6,702	27
Total	8,627	35	11,037	45	2,310	9	682	3	1,949	8	24,605	100

Table 17c: How satisfied you were with the service provided during the post-operation visits? (By Department)

Department	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	1,638	47	1,253	36	252	7	32	1	287	8	3,462	100
Ophthalmology – MDH	1,587	37	1,935	45	373	9	119	3	274	6	4,289	100
Ophthalmology – Outsourcing	318	45	322	45	55	8	0	0	15	2	710	100
Orthopaedics	971	30	1,323	42	323	10	198	6	371	12	3,187	100
Surgical	4,113	32	6,204	48	1,307	10	332	3	1,001	8	12,957	100
Total	8,627	35	11,037	45	2,310	9	682	3	1,949	8	24,605	100

Table 17d: How satisfied you were with the service provided during the post-operation visits? (By Category)

Category	Very satisfied		Satisfied		Unsatisfied		Highly unsatisfied		Do not know		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	590	43	581	42	98	7	52	4	61	4	1,382	100
Major+	1,917	42	1,930	43	362	8	105	2	211	5	4,525	100
Major	931	41	1,021	45	138	6	103	5	99	4	2,292	100
Intermediate	3,211	33	4,509	46	641	7	375	4	969	10	9,704	100
Minor	1,978	30	2,997	45	1,072	16	46	1	608	9	6,702	100
Total	8,627	35	11,037	45	2,310	9	682	3	1,949	8	24,605	100

Demographics

Table 18a: How old are you?

Department	Less than 25		25-54		55-64		65+		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	14	0	591	2	1,002	4	1,856	8	3,462	14
Ophthalmology – MDH	29	0	497	2	884	4	2,878	12	4,289	17
Ophthalmology – Outsourcing	0	0	0	0	40	0	670	3	710	3
Orthopaedics	428	2	1,080	4	618	3	1,061	4	3,187	13
Surgical	363	1	4,968	20	3,233	13	4,393	18	12,957	53
Total	835	3	7,137	29	5,777	23	10,857	44	24,605	100

Table 18b: How old are you?

Category	Less than 25		25-54		55-64		65+		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	30	0	230	1	362	1	760	3	1,382	6
Major+	14	0	264	1	741	3	3,507	14	4,525	18
Major	73	0	513	2	472	2	1,234	5	2,292	9
Intermediate	346	1	3,700	15	2,501	10	3,157	13	9,704	39
Minor	372	2	2,430	10	1,701	7	2,200	9	6,702	27
Total	835	3	7,137	29	5,777	23	10,857	44	24,605	100

Table 18c: How old are you? (By Department)

Department	Less than 25		25-54		55-64		65+		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	14	0	591	17	1,002	29	1,856	54	3,462	100
Ophthalmology – MDH	29	1	497	12	884	21	2,878	67	4,289	100
Ophthalmology – Outsourcing	0	0	0	0	40	6	670	94	710	100
Orthopaedics	428	13	1,080	34	618	19	1,061	33	3,187	100
Surgical	363	3	4,968	38	3,233	25	4,393	34	12,957	100
Total	835	3	7,137	29	5,777	23	10,857	44	24,605	100

Table 18d: How old are you? (By Category)

Category	Less than 25		25-54		55-64		65+		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	30	2	230	17	362	26	760	55	1,382	100
Major+	14	0	264	6	741	16	3,507	78	4,525	100
Major	73	3	513	22	472	21	1,234	54	2,292	100
Intermediate	346	4	3,700	38	2,501	26	3,157	33	9,704	100
Minor	372	6	2,430	36	1,701	25	2,200	33	6,702	100
Total	835	3	7,137	29	5,777	23	10,857	44	24,605	100

Table 19a: What is your gender?

Department	Females		Males		Total	
	No.	%	No.	%	No.	%
Cardiology	1,086	4	2,376	10	3,462	14
Ophthalmology – MDH	2,627	11	1,662	7	4,289	17
Ophthalmology – Outsourcing	408	2	302	1	710	3
Orthopaedics	2,015	8	1,172	5	3,187	13
Surgical	4,514	18	8,443	34	12,957	53
Total	10,650	43	13,955	57	24,605	100

Table 19b: What is your gender?

Category	Females		Males		Total	
	No.	%	No.	%	No.	%
CMO	644	3	738	3	1,382	6
Major+	2,831	12	1,694	7	4,525	18
Major	1,353	5	939	4	2,292	9
Intermediate	3,905	16	5,799	24	9,704	39
Minor	1,918	8	4,784	19	6,702	27
Total	10,650	43	13,955	57	24,605	100

Table 19c: What is your gender? (By Department)

Department	Females		Males		Total	
	No.	%	No.	%	No.	%
Cardiology	1,086	31	2,376	69	3,462	100
Ophthalmology – MDH	2,627	61	1,662	39	4,289	100
Ophthalmology – Outsourcing	408	57	302	43	710	100
Orthopaedics	2,015	63	1,172	37	3,187	100
Surgical	4,514	35	8,443	65	12,957	100
Total	10,650	43	13,955	57	24,605	100

Table 19d: What is your gender? (By Category)

Category	Females		Males		Total	
	No.	%	No.	%	No.	%
CMO	644	47	738	53	1,382	100
Major+	2,831	63	1,694	37	4,525	100
Major	1,353	59	939	41	2,292	100
Intermediate	3,905	40	5,799	60	9,704	100
Minor	1,918	29	4,784	71	6,702	100
Total	10,650	43	13,955	57	24,605	100

Table 20a: What is your education level?

Department	No formal level of education		Pre-primary/Primary		Secondary		Post-secondary/Non tertiary		Tertiary		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	159	1	1,592	6	1,082	4	496	2	133	1	3,462	14
Ophthalmology – MDH	538	2	1,983	8	1,265	5	302	1	200	1	4,289	17
Ophthalmology – Outsourcing	124	1	376	2	175	1	35	0	0	0	710	3
Orthopaedics	204	1	973	4	1,285	5	489	2	236	1	3,187	13
Surgery	554	2	2,930	12	5,729	23	2,248	9	1,496	6	12,957	53
Total	1,580	6	7,854	32	9,536	39	3,570	15	2,065	8	24,605	100

Table 20b: What is your education level?

Category	No formal level of education		Pre-primary/Primary		Secondary		Post-secondary/Non tertiary		Tertiary		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	67	0	592	2	413	2	210	1	100	0	1,382	6
Major+	601	2	2,242	9	1,237	5	251	1	195	1	4,525	18
Major	184	1	809	3	768	3	348	1	182	1	2,292	9
Intermediate	383	2	2,581	10	4,522	18	1,620	7	598	2	9,704	39
Minor	345	1	1,630	7	2,595	11	1,142	5	990	4	6,702	27
Total	1,580	6	7,854	32	9,536	39	3,570	15	2,065	8	24,605	100

Table 20c: What is your education level? (By Department)

Department	No formal level of education		Pre-primary/Primary		Secondary		Post-secondary/Non tertiary		Tertiary		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cardiology	159	5	1,592	46	1,082	31	496	14	133	4	3,462	100
Ophthalmology – MDH	538	13	1,983	46	1,265	29	302	7	200	5	4,289	100
Ophthalmology – Outsourcing	124	17	376	53	175	25	35	5	0	0	710	100
Orthopaedics	204	6	973	31	1,285	40	489	15	236	7	3,187	100
Surgical	554	4	2,930	23	5,729	44	2,248	17	1,496	12	12,957	100
Total	1,580	6	7,854	32	9,536	39	3,570	15	2,065	8	24,605	100

Table 20d: What is your education level? (By Category)

Category	No formal level of education		Pre-primary/Primary		Secondary		Post-secondary/Non tertiary		Tertiary		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
CMO	67	5	592	43	413	30	210	15	100	7	1,382	100
Major+	601	13	2,242	50	1,237	27	251	6	195	4	4,525	100
Major	184	8	809	35	768	34	348	15	182	8	2,292	100
Intermediate	383	4	2,581	27	4,522	47	1,620	17	598	6	9,704	100
Minor	345	5	1,630	24	2,595	39	1,142	17	990	15	6,702	100
Total	1,580	6	7,854	32	9,536	39	3,570	15	2,065	8	24,605	100

Table 21a: What is your current work status?

Employment		Department					Total
		Cardiology	Ophthalmology – MDH	Ophthalmology – Outsourcing	Orthopaedics	Surgical	
Student/Trainee	No.	0	45	0	59	0	104
	%	0	0	0	0	0	0
Employed	No.	708	521	0	1,053	4,756	7,039
	%	3	2	0	4	19	29
Self-employed	No.	74	4	15	44	384	522
	%	0	0	0	0	2	2
Retired	No.	1,640	1,442	364	606	4,644	8,697
	%	7	6	1	2	19	35
Unemployed	No.	61	0	0	148	55	264
	%	0	0	0	1	0	1
Cannot work due to illness or disability	No.	103	100	19	37	336	595
	%	0	0	0	0	1	2
Take care of household and/or family	No.	875	2,176	311	1,240	2,782	7,384
	%	4	9	1	5	11	30
Total	No.	3,462	4,289	710	3,187	12,957	24,605
	%	14	17	3	13	53	100

Table 21b: What is your current work status?

Employment		Category					Total
		CMO	Major+	Major	Intermediate	Minor	
Student/Trainee	No.	0	0	59	0	45	104
	%	0	0	0	0	0	0
Employed	No.	202	444	530	3,610	2,251	7,039
	%	1	2	2	15	9	29
Self-employed	No.	33	20	44	304	121	522
	%	0	0	0	1	0	2
Retired	No.	549	1,616	701	3,163	2,668	8,697
	%	2	7	3	13	11	35
Unemployed	No.	52	0	45	156	11	264
	%	0	0	0	1	0	1
Cannot work due to illness or disability	No.	50	120	61	122	241	595
	%	0	0	0	0	1	2
Take care of household and/or family	No.	496	2,325	852	2,348	1,363	7,384
	%	2	9	3	10	6	30
Total	No.	1,382	4,525	2,292	9,704	6,702	24,605
	%	6	18	9	39	27	100

Table 21c: What is your current work status? (By Department)

Employment		Department					Total
		Cardiology	Ophthalmology – MDH	Ophthalmology – Outsourcing	Orthopaedics	Surgical	
Student/Trainee	No.	0	45	0	59	0	104
	%	0	1	0	2	0	0
Employed	No.	708	521	0	1,053	4,756	7,039
	%	20	12	0	33	37	29
Self-employed	No.	74	4	15	44	384	522
	%	2	0	2	1	3	2
Retired	No.	1,640	1,442	364	606	4,644	8,697
	%	47	34	51	19	36	35
Unemployed	No.	61	0	0	148	55	264
	%	2	0	0	5	0	1
Cannot work due to illness or disability	No.	103	100	19	37	336	595
	%	3	2	3	1	3	2
Take care of household and/or family	No.	875	2,176	311	1,240	2,782	7,384
	%	25	51	44	39	21	30
Total	No.	3,462	4,289	710	3,187	12,957	24,605
	%	100	100	100	100	100	100

Table 21d: What is your current work status? (By Category)

Employment		Category					Total
		CMO	Major+	Major	Intermediate	Minor	
Student/Trainee	No.	0	0	59	0	45	104
	%	0	0	3	0	1	0
Employed	No.	202	444	530	3,610	2,251	7,039
	%	15	10	23	37	34	29
Self-employed	No.	33	20	44	304	121	522
	%	2	0	2	3	2	2
Retired	No.	549	1,616	701	3,163	2,668	8,697
	%	40	36	31	33	40	35
Unemployed	No.	52	0	45	156	11	264
	%	4	0	2	2	0	1
Cannot work due to illness or disability	No.	50	120	61	122	241	595
	%	4	3	3	1	4	2
Take care of household and/or family	No.	496	2,325	852	2,348	1,363	7,384
	%	36	51	37	24	20	30
Total	No.	1,382	4,525	2,292	9,704	6,702	24,605
	%	100	100	100	100	100	100

Other comments

Table 22a: Do you have any other comments related to the operation in question?

Department	Yes		No		Total	
	No.	%	No.	%	No.	%
Cardiology	1,296	5	2,166	9	3,462	14
Ophthalmology – MDH	1,487	6	2,802	11	4,289	17
Ophthalmology – Outsourcing	210	1	500	2	710	3
Orthopaedics	1,111	5	2,076	8	3,187	13
Surgery	5,784	24	7,173	29	12,957	53
Total	9,888	40	14,717	60	24,605	100

Table 22b: Do you have any other comments related to the operation in question?

Category	Yes		No		Total	
	No.	%	No.	%	No.	%
CMO	550	2	832	3	1,382	6
Major+	1,533	6	2,992	12	4,525	18
Major	805	3	1,487	6	2,292	9
Intermediate	4,234	17	5,470	22	9,704	39
Minor	2,767	11	3,935	16	6,702	27
Total	9,888	40	14,717	60	24,605	100

Table 22c: Do you have any other comments related to the operation in question? (By Department)

Department	Yes		No		Total	
	No.	%	No.	%	No.	%
Cardiology	1,296	37	2,166	63	3,462	100
Ophthalmology – MDH	1,487	35	2,802	65	4,289	100
Ophthalmology – Outsourcing	210	30	500	70	710	100
Orthopaedics	1,111	35	2,076	65	3,187	100
Surgery	5,784	45	7,173	55	12,957	100
Total	9,888	40	14,717	60	24,605	100

Table 22d: Do you have any other comments related to the operation in question? (By Category)

Category	Yes		No		Total	
	No.	%	No.	%	No.	%
CMO	550	40	832	60	1,382	100
Major+	1,533	34	2,992	66	4,525	100
Major	805	35	1,487	65	2,292	100
Intermediate	4,234	44	5,470	56	9,704	100
Minor	2,767	41	3,935	59	6,702	100
Total	9,888	40	14,717	60	24,605	100

Table 22e: Do you have any other comments related to the operation in question? – *other comments collapsed*

Other comments		Department					Total
		Cardiology	Ophthalmology - MDH	Ophthalmology - Outsourcing	Orthopaedics	Surgical	
Emergency department complaints	No.	78	64	19	4	250	416
	%	1	1	0	0	3	4
Appointment times at out-patients are not respected and/or relatives of medical staff are prioritised	No.	94	381	0	108	789	1,373
	%	1	4	0	1	8	14
Date of next appointment is very far	No.	80	118	0	34	146	379
	%	1	1	0	0	1	4
Dissatisfied with post-operation service	No.	144	91	20	41	28	324
	%	1	1	0	0	0	3
Long time for admissions and discharge letter to be issued	No.	75	45	0	4	173	297
	%	1	0	0	0	2	3
Complaints related to medical staff	No.	14	14	0	72	188	288
	%	0	0	0	1	2	3
Suggest better communication between the various departments as well as between consultant and patient	No.	0	4	0	87	152	243
	%	0	0	0	1	2	2
Complaints on the quality of the medical service provided	No.	2	58	0	93	0	153
	%	0	1	0	1	0	2
Complaints on the hospital environment	No.	10	65	39	50	184	349
	%	0	1	0	1	2	4
Complaints related to the food provided	No.	0	7	0	19	116	142
	%	0	0	0	0	1	1
Lack of resources	No.	54	7	0	26	323	409
	%	1	0	0	0	3	4
Foreign patients are prioritised	No.	13	0	0	0	0	13
	%	0	0	0	0	0	0
I prefer services offered at a private clinic/hospital, however, this is done at a cost	No.	19	0	0	0	36	55
	%	0	0	0	0	0	1
I was not happy with the consultant assigned to me	No.	0	4	0	0	0	4
	%	0	0	0	0	0	0
In general, waiting time is not reasonable	No.	100	186	54	254	1,413	2,008
	%	1	2	1	3	14	20
There are instances where due to a long waiting time, one has to do the intervention privately at a cost	No.	0	29	0	31	12	71
	%	0	0	0	0	0	1
Service at hospital is not provided if one is not a private client of the consultant	No.	0	0	0	0	6	6
	%	0	0	0	0	0	0
It would be better if one is always visited by the same consultant	No.	0	0	0	23	0	23
	%	0	0	0	0	0	0
Management is unsatisfactory	No.	0	4	0	0	0	4
	%	0	0	0	0	0	0
Satisfied with service provide	No.	612	410	77	263	1,876	3,238
	%	6	4	1	3	19	33
Hospital is clean	No.	0	0	0	0	92	92
	%	0	0	0	0	1	1
Total	No.	1,296	1,487	210	1,111	5,784	9,888
	%	13	15	2	11	58	100

Appendix IV – Selected bibliography

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