Report on the National Laboratory Pilot Projects

December 2004
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Prepared by Ursula Fox on behalf of the Joint Implementation Group
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Acknowledgements

The Joint Implementation Group wish to record its acknowledgement of the co-operation and assistance afforded to it by all members of the local teams of the seven pilot projects engaged in this process and to express its thanks to all who contributed in the evaluation and completion of the Report.

The Joint Implementation Group would also like to pay a special thanks to Ms Ursula Fox for her dedication to this project, both in her role as National Co-ordinator and in compiling this report on behalf of the Group.
INTRODUCTION

The purpose of this study was to review and evaluate selected Laboratory Pilot Projects as per recommendation of the Report of the Medical Laboratory Service Review Group October 2001. This Report was a joint process between Management from the Health Service Employers Agency (HSEA) and their management nominees throughout the Health Service, and members of the Medical Laboratory Scientists Association (MLSA). Their Terms of Reference were “to conduct a comprehensive review of the balance between the demands being placed upon and the resources available to provide pathology based Laboratory Services, with particular reference to Laboratory Technicians and Technologists”.

One of the recommendations of the Report was the initiation of pilot projects to address various aspects of delivery of laboratory services and the issues surrounding them. These common issues were outlined as follows:

- Increased workloads-routine, semi-routine and emergency
- Increasing demands for the provision of extended services outside traditional core hours
- Demand management systems
- Developments in the application of new technology
- Staffing resources to cope with demands
- Increasing pressure on individual staff to give more time to providing out of hours cover
- Dissatisfaction with present arrangements being voiced by users, staff and management

The pilots were to focus on service and staff needs by addressing the issues above, with a view to improving the quality of the service from both perspectives.

A Joint Implementation Group (JIG) was established to select the pilots and make recommendations following their evaluation. They were composed of seven management representatives from the HSEA and their nominees and six representatives from the MLSA.
HSEA/ Management Representatives

*Mr Se O Connor HSEA (Joint Chair)
Ms Mary Hehir HSEA
Mr John Delamere HSEA
Mr John Brehony NAHB
Mr Alan Price SEHB
Ms Bernie Ryan DOHC

***Mr Tom Moloney Mater Hospital

*Replaced Mr Martin McDonald

**Mr John Kane (Joint Chair)
Mr Gerry O Toole
Mr Roland Fitzgerald
Ms Kathryn Hanrick
Ms Clare Mulligan
Mr Pat Flynn

***Replaced Ms Helen Franklin

***Replaced Ms Ginny Hanrahan Beaumont Hospital

A Pilot Project Co-ordinator, Ms Ursula Fox, was seconded from the Pathology Department, Mater Hospital to develop and implement the pilot projects in specified agreed sites. Her role was to:

- Support the process through building close working relationships with all key players—hospital and laboratory management and staff representatives at local sites
- Ensure an understanding of the process among all stakeholders
- Contribute in assessing the impact of such projects by preparing evaluation reports on completion of 6-month pilot period

Terms of Reference of this study were as follows:

- To examine the processes and resources in relation to delivery, and evaluate the diagnostic services in practice at each pilot site
- For the Joint Implementation Group to make recommendations based on the findings with particular reference to the extension of the projects across the health service
Chapter 2

Pilot Project Selection Process
PILOT PROJECT SELECTION PROCESS

Several proposals were submitted through the MLSA Office and a number of these were selected, to be progressed by the Pilot Project Co-ordinator, for submission to the JIG. A number of local site meetings were set up with representatives of the JIG and the Project Co-ordinator to meet hospital and laboratory management and staff to discuss the proposal. It afforded an opportunity for all concerned to be briefed and familiarised with the approach being adopted in relation to the proposal and to ask/answer questions.

Following site visit and consideration of the potential benefits arising among the various such proposals under review, seven proposals were selected as National Laboratory Pilot Projects by the JIG under agreed criteria as follows:

- Pilot sites must include at least one small, medium and large hospital laboratory
- A pilot project must show evidence of at least one or more of the first seven criteria – see below (Phase 1)
- A proposal that does not fulfil criteria of Phase 1 cannot proceed for consideration under criteria in Phase 2

Phase One:

Each proposal submitted was examined under the following 7 criteria:

1. **Increased workloads**- routine, semi-routine and emergency- are they being addressed?

2. **Increased demand for the provision of extended services outside traditional core hours**- what demand is being met outside of the core hours? What demand is being met if core hours were extended?

3. **Demand management systems**- are systems in place? Where systems exist are they regularly audited and reviewed? Are they relevant to the users? (Consultants, NCHDS, GPs, etc.)

4. **Developments in the application of new technology**- have they reduced/increased workload? Has new technology helped laboratories to meet the growing workload? Has new technology introduced a larger repertoire of tests and increased complexity of tests?

5. **Staffing resources to cope with demands**- have staffing numbers increased proportionally with the increased hospital/community activity?

6. **Increasing pressure on individual staff to give more time to providing out of hours cover**- has this been the solution to an increased demand on laboratory services? Has this been the solution to an increased demand on laboratory services outside of core hours?
7. Dissatisfaction with present arrangements being voiced by users, staff and management—has change come from the laboratory staff/management and/or from hospital management? Can staff particularly in small/medium hospitals continue to cover increasing out-of-hours service? Can the increased cost of on-call in the larger/medium hospitals, to meet new demands, be sustained by hospital budgets?

Phase Two:

Following selection of proposal from Phase 1, evidence of the following criteria was then considered under Phase 2:

1. Partnership principles— is there evidence of Partnership? Is there good communication between laboratory staff /laboratory management/hospital management? Are they willing to work towards the same goal?

2. Benefit to patient/service— is the patient/service benefit clearly identified? Does the service meet the needs of the client (Patient/Doctor/Hospital/ Health Board/ DOHC)? Are they addressing issues in the National Health Strategy and Primary Care Strategy?

3. Benefit to staff—are they able to meet adequately the present/new demands of the service? Can they sustain the present service both during the core hours and on-call? Are changes going to improve their working life or are they going to cause more problems in the future? Does it address Health and Safety issues of employees?

4. Transferability— if it works in one site can it be easily implemented in another?

5. Sustainability (funding after the pilot phase)—how committed are hospital/laboratory management to the pilot project? How relevant are the benefits to the overall National Health Strategy?

6. Staff willingness to commit to provision of pilot project—how well has it been discussed with staff? Does laboratory and hospital management support it? Is there enough staff willing to undertake the pilot? In the event of lack of locum staff would present staff be able to accommodate during pilot stage?

7. Quality—does it improve the quality of work? Does it address risk management concerns?

8. Compliance with Legislation—does it breach/comply with the Working Time Act? Health and Safety Act?

9. IR issues— is it addressing present issues or potential issues? Is on-call sustainable particularly in the small/medium hospitals with fewer laboratory staff and increased demand on this service? Can the increased demand during the core hours be sustained?

Hospital management and laboratory management/staff were then informed in writing of the outcome and the basis for such a decision. In the event of agreement to proceed, the basis upon which the pilot project was being initiated was clearly outlined. The pilot was undertaken for a 6-month period.
Selected National Laboratory Pilot Projects

The seven selected pilots were located in five hospital sites and included a small, medium and large hospital laboratory as follows:

- Wexford General Hospital (Small)
- Midland Regional Hospital Tullamore (Medium)
- Waterford Regional Hospital (Large)
- St James’s Hospital (Large)
- Tralee General Hospital (Medium)

A summary of the pilots including their locations and the four headings under which they were broadly defined, with regard to the issues identified to be addressed, were as follows:

1. Alternative work practice for staff in providing out of hours cover reducing an individual’s exposure to 24-hour working periods

Project 1: Pathology Department, Wexford General Hospital
Night core hours for Medical Scientists 23.00-08.00 Monday-Sunday in place of ‘on-call’ between these hours.

Project 2: Haematology/Blood Transfusion Laboratory, Midland Regional Hospital, Tullamore
Pilot Period: 8th September 2003-5th March 2004
Earlier opening of the Haematology/Blood Transfusion Laboratory at 8.00am Monday-Friday to facilitate processing of samples from patients of the Regional Oncology Haematology Day Unit (ROHDU).

Project 4: Microbiology Laboratory, St James’s Hospital
Later opening hours of the Microbiology Laboratory to 20.30 on Monday, Tuesday and Thursday to facilitate processing of samples from patients of the Genitourinary Infectious Diseases Clinic (GUIDE)
Project 5: Histology Laboratory, Waterford Regional Hospital  
Later opening of the Histology Laboratory to 22.00 Monday-Friday to facilitate the rapid processing of Fine Needle Breast Aspirates and Endoscopy Biopsies.

Project 6: Haematology Department, St James's Hospital  
Earlier opening of the STAT Laboratory at 7.30am Monday-Friday to facilitate processing of samples from patients of the Warfarin Out-patient Clinic.

3. Extended hours of service to patients who do not fall within the “emergency” classification

Project 3: Microbiology Laboratory, Waterford Regional Hospital  
Increased staffing in the Microbiology Laboratory on Saturday morning to facilitate follow-up work on acutely ill patients and to process all samples received.

4. Effective use of resources and the reduction of inappropriate testing through agreed protocols

Project 7: Pathology Department, Tralee General Hospital  
Set up agreed protocols of laboratory testing for patients attending Accident/Emergency and the Medical Assessment Unit with the objective of implementing a demand management mechanism.
Chapter 3 Planning
PLANNING

The planning and structuring of each of the pilot projects involved discussion between the Project Co-ordinator and each of the teams at the local pilot site. The composition of the team included at minimum a hospital management representative, a pathology management representative, a MLSA representative and a Medical Scientist involved in working the pilot. Depending on the local site, also included on the teams were a finance representative, laboratory consultant and secretarial representative. Also identified were the relevant Medical and Nursing Staff and other healthcare professionals involved or impacted upon in the provision of the service and whose input would be valuable in the final evaluation of the pilot. The plan was developed and agreed under the following broad headings:

- Clarification of goals and objectives
- Agreed terms of reference
- Impact/outcome-subdivided into deliverables

Terms of Reference were drafted for each pilot and included the following headings:

- **Background**-brief description of the origins of the problem/situation.
- **Goal**-statement of agreed purpose describing the impact/ outcome
- **Scope**-summary of size of project and team's involvement
- **Time/Cost**-rough estimates of budget and allocated funding
- **Milestones**-review of progress at agreed intervals during 6-month period
- **Quality**-indication of the standard the project's impact will have and how will this be measured
- **Outline Pilot Plan**- outline of main phases and their output.
  - Planning and structuring
  - Implementing
  - Monitoring and auditing
  - Evaluating

Terms of Reference of each pilot are included in Appendix 2.1.

Laboratory staff were involved in design of the plan setting out a list of tasks, designated personnel to complete these tasks and the timescales in which they would be completed. A Risk Analysis was performed and a Contingency Plan put in place -Task Schedule and Risk Analysis for each pilot are also included in Appendix 2.1.
Chapter 4

Implementation
IMPLEMENTATION

Once the Planning and Structuring Phase was completed, the pilot was initiated with an agreed start date and completion date. Baseline data was established, key performance indicators were defined, pre-pilot surveys were completed and all aspects concerning the role out of the pilot were in place.

During the pilot, monitoring and auditing was continuous—milestones as agreed were met and data collated at agreed intervals. A designated Team leader returned weekly Status Reports to the Project Co-ordinator (Status Report Template—see Appendix 2.2). This communication was used to return feedback of progress of the pilots to the Joint Implementation Group at their monthly meetings. It facilitated the Project Co-ordinator in preparation of Progress Reports, which were reviewed by the Joint Implementation Group in November 2003 and February 2004. It also highlighted any issues or problems that were arising and ensured solutions could be put in place promptly.
Chapter 5
Evaluation
EVALUATION

An evidence-based approach formed an essential element of the project evaluation and ensured that all decisions would be based on this evidence, allowing the Joint Implementation Group to draw conclusions and make recommendations. Following the 6-month pilot period final evaluation took place under the following key headings:

- Impact on patient/service
- Impact on laboratory staff
- Other major impacts
- Actual cost
- Sustainability
- Transferability

A variety of qualitative and quantitative methodological approaches were employed to assess these criteria, including:

- Patient focus through User Satisfaction Surveys, where users were identified as medical and nursing staff involved in the care of the patient
- Patient focus through Clinical review by consultants to assess impact of laboratory service on treatment of patient
- Staff focus through Staff Satisfaction Surveys where staff included Medical Scientists and Medical Laboratory Assistants
- One to one interviews with other Health Care professionals to assess the impact of the pilot project on their services
- Audit trails developed by designing manual templates or exploiting computer technology where possible
- Regular meetings/reporting to discuss impact and identify problems and possible solutions with Project Co-ordinator
- Progress tracked and monitored as agreed with each local team
- Financial auditing and recording of actual cost

See Appendix 1 for full data analyses of each Pilot Project.
EXECUTIVE SUMMARY REPORT

Pilot Project 1: Pathology Department, Wexford General Hospital

Pilot Project 2: Haematology/Blood Transfusion Laboratory, Midland Regional Hospital, Tullamore

Pilot Project 3: Microbiology Laboratory, Waterford Regional Hospital

Pilot Project 4: Microbiology Laboratory, St James's Hospital

Pilot Project 5: Histology Laboratory, Waterford Regional Hospital

Pilot Project 6: Haematology Department, St James's Hospital

Pilot Project 7: Pathology Department, Tralee General Hospital
Pilot Project 1: Pathology Department Wexford General Hospital

**Hospital Profile:** Wexford General Hospital provides acute services for the people of county Wexford, which has a population of 116,596. This is an increase of 12% on the 1996 census and compares with an overall average increase of 8% in the South Eastern Health Board (SEHB). The hospital has 206 inpatient beds, 16-day beds and a 10-bed Medical Admission Unit. The hospital provides a comprehensive range of services including the following specialties: General Internal Medicine, Cardiology, Endocrinology, Respiratory Medicine, Geriatric Service, Gastroenterology, Paediatrics, Physiotherapy, Pathology, Dietetics, Occupational Therapy, Pharmacy, Radiology, Oncology, General Surgery, Obstetrics, Gynaecology. Consultant led outpatient clinics are provided in Medicine, Paediatrics, Surgery, Obstetrics/Gynaecology, ENT, Ophthalmology, Orthopaedics, Oncology, Dermatology, and Palliative Care.

**Pathology Profile:** Set up under a Regional Department of Laboratory Medicine and is managed by a Pathology Clinical Directorate which is based in Waterford Regional Hospital.

**Staffing:** 5 WTE Medical Scientist positions including one Senior Medical Scientist-in-Charge. Four Medical Scientists share two of these WTE positions.

**Activity:** Provides general testing for In-patients, Out-patient Clinics and General Practitioners in the area. Processed approximately 132,209 samples in 2003 covering the disciplines of Haematology, Biochemistry, Microbiology and Blood Transfusion.

**Out-of-Hours Cover:** 128 hours to be covered outside of core hours, which is equivalent to approx. 25.5 hours per week per WTE. All 7 Medical Scientists are available to cover these hours.

**Summary of Pilot:**

- Night core hours for staff between 23.00 and 08.00 in compliance with the Working Time Act 1997.
- Early 08.00am start Monday-Friday, introduced to facilitate compliance with the Working Time Act, and would be used to process samples earlier from patients of the Oncology Day Ward and Day Care Unit.
- Removal of quota system of payment as per 1981 Agreement (i.e. full payment per call).
- Recruitment of two Medical Scientists.
Background of Pilot: 1981 Emergency/On-call System Agreement\(^1\) had placed a Quota of 60 calls per week at full payment rate with calls above 60 paid at a reduced rate. The nature of multidisciplinary On-call was also an issue and staff were exposed to 24-hour working periods at least once a week in contravention of the organisation of the Working Time Act\(^2\). There was disruption to the core day workload as the laboratory was always down a staff member in a particular discipline due to the compensatory rest day off after covering on-call.

Deliverables:

- Alternative work practice, designed by laboratory staff themselves, in delivery of an out-of-hours service and reduction of 24-hour exposure to cover these hours.
- Decreased turnaround time of results between 23.00-08.00.
- Earlier laboratory service to patients of the Oncology Day Ward and Day Care Unit (DCU).

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\(^1\)Revised Emergency/On-call System for Medical Laboratory Technicians/Technologist May 1981- (2) For up to 60 calls per week per Hospital, payment to be made on the basis of the existing A rate and for over 60 calls per week, payment to be made at a reduced rate (Payment of emergency calls to be pooled to determine the average rate of an individual call in any given week).

\(^2\)Working Time Act 1997-11 hours rest in each period of 24 hours. 24 hours rest period in each period of 7 days (pre-ceded by 11 hours rest) or alternatively 2 rest periods of 24 hours in a two week period (pre-ceded by 11 hours rest)
Key Findings

Core Night Hours perspective

Impact on Patient/Service:

- The pilot delivered reduced result turnaround times for patients during core night hours with an overall reduction of 34%. A 36% reduction was recorded in the time sample was taken to time sample was ready for analysis which would be a consequence of the Medical Scientist now being available in the laboratory during these hours as opposed to being on-call i.e. available off site and contactable by bleep.

- Regarding the complexity of multidiscipline call, of the 327 calls recorded for March 2004, when the complexity of sample type and tests done was taken into account, this was equivalent to 571 single discipline calls being performed. (Approximately 1:2 ratio i.e. for every patient sample two single discipline calls were indicated and each discipline could have a number of tests requested.) 33% of Blood Transfusion samples processed were x-matching units of blood, which not being an automated procedure, was more labour-intensive.

Impact on Laboratory Staff:

- The positive impact of working core night hours on staff included the elimination of 24-hour exposure to work (6 of 7 agreed); removal of the Quota system of payment (6 of 7 agreed) and its contribution to a reduction in personal fatigue (58% agreed)

- Only 2 of 7 staff were satisfied with working core night hours and 4 staff (other 3 undecided) would not be willing to continue working core night hours. The main issues that arose were increased frequency of weekend cover (5 out of 7 whereas pre-pilot 3 out of 7); in-equitable payment system (i.e. individual salary scale applied to payment of night duty for similar work and responsibility) and pilot payment system (1.25 times); pattern of roster too disruptive to routine core day hours; difficulty in swapping and the change in work practice with traditional core hours extending from a 5-day week to a 7-day week.

- 4 of 7 were not satisfied working part on-call hours’ and night core hours. The working of core night hours still left 60 hours per week to be covered on a ‘voluntary’ basis.

- Roster was complicated and required huge input at a supervisory level. Staff found it difficult from a continuum of work perspective.
Other major impacts:

Laboratory Service:

- **Training of locum staff (recruited for pilot period) in multi-discipline scientific work**: due to the night core hours being worked on a contingency there was not enough multi-disciplined staff available during core day hours to allow for adequate training of locum staff. This limited their ability to cover different disciplines during core day hours and also prevented their inclusion in working core night hours.

- **Continuity of the core day hour workload**: this was more disrupted during the working of the pilot due to less multi-disciplined staff being available. This was further added to by inadequate staff cover when the ‘early’ person left.

- **Supervisory role during core day hours**: the only Senior Medical Scientist was participating on the core night hour roster and so the laboratory was often left during core day hours without senior cover. This is a required standard of Laboratory Accreditation.

- **Increase in laboratory activity during the pilot period**: there was a 9% increase in the disciplines of Biochemistry and Haematology and 11% increase in Blood Transfusion. This increased workload further added to the pressure on the reduced number of multi-disciplined staff available covering core day hours.

*Actual Cost of Pilot: (28 weeks duration)*

2 Medical Scientists, Night Duty Allowances and Premiums, and Quota payment excess

**Total Cost** = €80,596

*Sustainability*: No. To their credit, the Medical Scientists undertook the running of this pilot on a contingency plan (7 multi-disciplined staff (one job-share) with the seventh position being filled from this pool). This may have contributed to the unfavourable bias and certainly exacerbated the many issues that arose in implementation of core night hours. Hospital management felt that if the core night hours had been rostered similar to other hospital staff (7 nights on/7 nights off), laboratory staff would have reaped greater benefit. It certainly may have resolved some of the issues that arose (weekend commitment, swapping, taking of annual leave and reduced the impact on core day service) but this was not favourable to the majority of staff with only 3 of 7 willing to consider (one individual providing on-call hours were not attached) working a maximum of 3 consecutive nights. The fact that 60 hours were still available to be covered on a ‘voluntary’ basis added further weight to the argument against the sustainability of core night hours.

From a Hospital Management perspective, the benefits of the core night hours did not justify the cost. They felt the number of calls involved (average of 10 per night) did not warrant having a full time person on duty in the laboratory. But they acknowledged the benefit of increased staffing during core day hours (in place for pilot) and the additional resources required to ensure adequate staffing levels to sustain the service in the long-term.

*Transferability*: No.
Key Findings

Earlier Laboratory Service perspective

Impact on Patient/Service:

- Firstly, it should be noted that the earlier opening of the laboratory was primarily a consequence of implementation of core night hours in accordance with the Working Time Act, allowing staff to finish at 8.00am. It was not targeted at a service demand but the benefits although limited during the pilot were worthy of note and particularly their potential benefits to the patient service in the future.

- The laboratory delivered an earlier laboratory service to patients of the Oncology Day Ward and Day Care Unit and potentially impacted positively on patients from other Wards and Clinics (although pre and post data was not collected to substantiate this). The fact that Analysers, Transfusion Tubes, etc. were Quality Controlled resulted in the laboratory ready to begin processing one hour earlier and samples received between 9.00 and 10.00 (14% of patient’s samples) could be analysed immediately.

- The limitation of this benefit was in the number of samples taken and received. For patients of the Oncology Day Ward the earliest recorded time of sample being taken was 9.00am with the earliest recorded time sample was received and ready for analysis was 9.27am (13% of total-11 patient samples). For patients of the Day Care Unit the earliest recorded time of sample being taken was 9.00am with the earliest recorded time sample was received and ready for analysis was 9.53am (4% of total-1 patient sample).

- During the pilot period there was a 22% increase in Oncology Day Ward patient attendances per month (78) compared with pre-pilot period (64). A 26% reduction in turnaround time of patient result was recorded during the pilot period, as a result of the earlier start in the laboratory. Of the 84 patient samples processed for Haematology analysis (Full Blood Count) during a one-month period, 42 of these patients underwent chemotherapy (approx 50%). These patients cannot undergo chemotherapy until their laboratory result has been reviewed. The benefit to this patient would be earlier start and finish of treatment, allowing earlier release from Day Ward.

- During the pilot period there was a 4% decrease in Day Care Unit (DCU) patient attendances per month (272) compared with pre-pilot period (283). A marginal decrease (4%) in turnaround time of Day Care Unit patient results was seen during pilot. As the Full Blood Count was used as marker test and only 26 were recorded over a one-month period, this was probably not representative of the real impact of samples from DCU on the laboratory service.

- Post 6-month pilot, Users (Nursing Staff only) of the Day Care Unit (3 respondents) and Oncology Day Ward (2 respondents) were agreed that that earlier opening of Laboratory benefited patient as follows: decreased patient turnaround time; improved quality of service to patient; offered a more timely service to patient and increased access of service to patient. Oncology Day Ward users did not agree that early opening of laboratory increased the number of patients treated and this would be borne out by the data above i.e. the earliest time blood was taken from patients. The fact that Consultant staff of the above wards did not participate in the Users Surveys was a limiting factor in assessing patient benefit.
Impact on Laboratory Staff:

- All staff surveyed were satisfied with the earlier core day hours with 6 of 7 staff willing to start work earlier and finish work earlier.
- 6 of 7 Medical Scientists were willing to consider more flexible working hours but only two were willing to change core day hours.

Other major impacts:

Laboratory Service:

- Inadequate staff cover: the early start impacted negatively on the core day service due to Medical Laboratory Staff deficit at end of day when 'early starter' left at 15.00. Also staff, rostered for the early start, were unavailable at times due to Annual Leave, Night duty, etc. resulting in the need for 'volunteers' to cover, further impacting on staff numbers to cover the service after 15.00. This had not been factored in the requirement of extra staff for pilot.

Sustainability: Not in its present format both from a staffing and a service viewpoint. There was willingness by laboratory staff to commence work earlier and be flexible but consideration of the fact that only about a quarter of staff (2 of 7) were willing to change core day hours would have to be addressed for sustainability in the long-term. There would also be a need for an increase in staff to cover the later end of day. From a general service viewpoint it was noted that only 8% of hospital samples recorded were taken by 9.00am with none received in the laboratory. By 10.00 about a third of patient samples (32%) had been taken with (14%) just under half of these received in the laboratory and ready for analysis. An earlier Phlebotomy Service and an earlier transport system would be required to enhance the potential benefits of the earlier laboratory opening to patients.

Hospital Management did not feel the earlier laboratory service was required as it did not contribute significantly to the patient service, apart from an earlier organisation of the laboratory service to begin processing specimens earlier.

Transferability: No
Pilot Project 2: Haematology/Blood Transfusion Laboratory Midland Regional Hospital Tullamore

Hospital Profile: The Midland Health Board provides acute hospital services at three main sites including the Midland Regional Hospital at Tullamore, Midland Regional Hospital at Mullingar and Midland Regional Hospital at Portlaoise. The Midland Regional Hospital at Tullamore serves a population of 63,663, which is equivalent to 28% of total population base served by the Midland Health Board (225,363). It has a 228-bed facility including 19 day beds. Services include Accident/Emergency, General Medicine and General Surgery. In addition, the Hospital offers a Regional Service in Orthopaedics, ENT, Haematology and Oncology.

Laboratory Profile: Pathology Department under the management of a Chief Medical Scientist with one Senior Medical Scientist designated in charge of each of the five disciplines.

Haematology/Blood Transfusion Staffing: 6.5 WTE Medical Scientist positions including 2.5 Senior Medical Scientists.

Activity: Provides routine testing for In-patients, Out-patient Clinics and General Practitioners in the area (approximately 33% of workload). Also provides some regional diagnostic services for the Midland Health Board. The laboratory processed 67,230 Haematology samples, 33,427 Coagulation samples and 3,567 Blood Transfusion samples in 2003.

Summary of Pilot

- Early start Monday-Friday at 8.00am introduced to process samples only from patients of the Regional Oncology Haematology Day Unit (ROHDU). The test performed was a full Blood Count but also Blood Grouping and Screen and x-match were included on request. Other start-up duties were performed by the ‘early start’ Medical Scientist.
- Double time in lieu for Medical Scientist covering early morning start.
- Recruitment of one Medical Scientist.

Background of Pilot: A Consultant Haematologist, based in Tullamore, was appointed to the Midland Health Board in September 2000, followed by the appointment of a Consultant Oncologist in June 2002. The above consultants had looked for an early morning start in the Haematology laboratory to process samples from patients on cytotoxic drugs. But Haematology/Blood Transfusion laboratory staff were unable to facilitate this early morning start due to inadequate staff numbers and also additional pressure of training, following the commissioning of new equipment in the laboratory.

Deliverables:

- Earlier laboratory service to patients of the Regional Oncology Haematology Day Unit (ROHDU).
- Flexible working pattern for Medical Scientists.
Key Findings

Impact on Patient/Service:

- An earlier laboratory service was delivered to the patients attending ROHDU with approximately 3 patients per day (14% of daily patient attendances) now having their samples processed between the hours of 8.00 to 9.30. It should be noted that up to 7 patient samples were analysed on some mornings (30% of daily attendances). Patient result turnaround times averaged 7 minutes (Range 3-25 minutes).

- Approximately 2 patients per month also benefited from the earlier processing of their samples for Group, Screen and X-match and were able to commence and complete their infusions of blood/blood products much earlier. In addition, a patient who needed to undergo a blood transfusion, due to earlier result review, could now have this done within the ROHDU opening hours rather than be scheduled for a return visit.

- During the 6-month pilot, 47% of patients who had samples processed before 9.30 underwent chemotherapy infusions. The earlier result turnaround time impacted positively on this patient allowing earlier commencement of treatment. Feedback from patients was verbalised to nursing staff - "earliest time ever". Patients were finished their infusion regimes earlier, some patients by as much as 2.5 hours.

- During the pilot period, 364 patients benefited from an earlier laboratory start, with 94% of these patients having their results reported by 9.30. This allowed for earlier patient review by Consultants and facilitated earlier clinical decision-making. Of the patients required to undergo chemotherapy, 40% now commenced their therapy between 9.31-11.00. Allowing the average time for compounding of chemotherapy fluids to range from 30-60 minutes, 25% of these patients had completed their chemotherapy treatment between 11.01-12.00 allowing for the average treatment time of 62 minutes (range from 1 minute-4.5 hours). In addition, this facilitated the earlier availability of day beds for use by other patients.

- Users of the service (Consultant Haematologist, Consultant Oncologist and Clinical Nurse Manager) were unanimous in indicating the benefits of an earlier laboratory service to the patient: decreased patient turnaround time; increased number of patients treated; improved quality of service to patient; a more timely service offered to patient and increased access of the service to patient. All three respondents strongly agreed that they would like this service to be continued.

Impact on Laboratory Staff:

- Medical Scientists demonstrated a willingness to respond to the demands of the service with all 7 staff willing to start work earlier and finish work earlier. 5 were willing to consider flexible working hours but less than half (3) were willing to change original core day hours. One of the main positives identified by staff during the pilot was the flexibility and earlier day finish.

- 6 of 7 staff were not willing to continue the early start under the same conditions. Reasons indicated were inadequate compensation for early start, potential contract changes, extra cost of child-minding facilities, change of personal circumstances resulting in individuals being unable to do early start in the future and the benefit of earlier finish not realised particularly (but not exclusively) by senior staff i.e. not always able to leave on time due to shortage of staff or supervisory responsibilities which had to be undertaken.
Other major impacts:

- **ROHDU:** The earlier result turnaround times facilitated the organisational running of ROHDU and ensured it operated more efficiently on a daily basis. It also allowed staff of the Unit to finish on time as patients on long treatment regimes (up to 4.5 hours) were completed within the Unit's opening hours. The Unit opening hours were now matched by the laboratory opening hours.

- **Laboratory Service:** The early start impacted positively on the routine core day laboratory service. The duties of the Medical Scientist covering early start also included preparation of controls, priming analysers in Haematology and Coagulation and performing mandatory Quality Control (QC), setting up Blood Transfusion grouping tubes and preparation of cell suspensions. This work carried out earlier and allowing for QC failures and their rectification, ensured samples could be analysed immediately at start of routine day at 9.30am.

- **Cleaning Staff:** Pre-pilot the cleaning of the RHODU took place every morning at 8.00am, which was now accommodated by cleaning staff at an earlier time.

- **Pharmacy Department:** There was a positive impact on Pharmacy staff with a more even distribution of their workload and reduction in individual pressure. There was less downtime and an increase in productivity of compounding unit. Also weekly sterilisation of the Clean Room in Pharmacy, where drug infusions are prepared, was now undertaken in the afternoons when demand on this facility was low and not mornings as pre-pilot, which would delay the use of this facility by two hours.

**Actual Cost of Pilot:**

Medical Scientist = €17,493  
Time in lieu = €2079 approx.  
Total Cost = €19,572  

**Sustainability:** Not in its present format. The concerns of laboratory staff regarding possible changes in contractual hours would first have to be addressed. There must also be an adequate pool of Medical Scientists to ensure frequency of cover remains limited. A change in personal circumstances, which may make it difficult to participate on the earlier start, but with a small pool of staff (7) would place an extra burden on few in provision of such a service. This could impact negatively in recruitment or retention of staff in the long-term. Also a potential increase in cost on individuals who have children in day care and the need for senior supervision if core day hours are formally extended (a standard of laboratory accreditation) would also have to be considered. The benefit of an earlier finish, which was not realised by staff at all times during the pilot, would also require review to determine adequate staff cover.

The Management at the Midland Regional Hospital, Tullamore felt that the Pilot Project was successful in highlighting benefits for both Patient and Staff. It proved a valuable asset in providing better patient care within the Region and facilitated better work-flow through the Pharmacy, ROHDU and Laboratory Departments. But they acknowledge that additional resources are required, to ensure adequate laboratory staffing levels and to address the issues raised by Medical Scientists, to sustain the service in the long-term.

**Transferability:** Not in its present format due to the same reasons as for sustainability.
Pilot Project 3: Microbiology Laboratory Waterford Regional Hospital

Hospital Profile: Waterford Regional Hospital provides a range of inpatient, outpatient and day care services, including some regional specialties to the population of Waterford City (101,546) and the region respectively. It has 474 inpatient beds and 48 day care beds. Services include A/E, General Medicine, Medicine for the Elderly, Nephrology Services including Renal Dialysis Service, Oncology, Haematology, Palliative Care, Rheumatology, Dermatology, Endocrinology & Diabetes, Gastroenterology, Obstetrics & Gynaecology, Neonatal & Paediatrics, Ophthalmology, ENT, General Surgery, Vascular Surgery, Urology, Orthopaedics and Acute Psychiatry. In addition, Waterford Regional Hospital is the Regional Orthopaedic Trauma Centre and the Regional Centre for Co-ordination of Services for Symptomatic Breast Disease.

Laboratory Profile: Set up under a Regional Department of Laboratory Medicine and is managed by a Pathology Clinical Directorate. The Microbiology Department is under the direct management of the Chief Medical Scientist. Hospitals served by the Microbiology Laboratory include Waterford Regional Hospital, Wexford General Hospital, St Luke’s Hospital Kilkenny, Kilcreene Orthopaedic Hospital Kilkenny, South Tipperary Hospital Cahir and Our Lady’s Hospital Cashel.

Staffing: 38 WTE Medical Scientist positions including one Chief Medical Scientist, 7 Senior Medical Scientists and 30 Medical Scientists. Also included are 3 Medical Laboratory Assistants, two Consultants and 1 Non-consultant Hospital Doctor (NCHD).

Activity: Provides routine testing for In-patients, Out-patient Clinics and 220 General Practitioners in the area. Also provides a Regional Microbiology Service (5 hospitals in South Eastern Health Board (SEHB)). Laboratory processed 210,512 clinical samples in 2003 of which approximately 35% was generated from Waterford Regional Hospital. It also has a Public Health Laboratory in which 9,215 samples were analysed in 2003. Approximately 15% of the routine workload received Monday-Friday arrives in laboratory Saturday morning.

Summary of Pilot:

- Increased staffing in the main Microbiology Laboratory of one Medical Scientist and one Medical Laboratory Assistant to bring overall staffing on Saturday morning to 3 Medical Scientists and one Medical Laboratory Assistant.
- Follow-up work processed on critically ill patients as defined by Consultant Microbiologist.
- All samples received in the laboratory on Saturday morning to be processed.
- Payment of one day for Medical Scientist or a day in lieu and 3 hours overtime payment for Medical Laboratory Assistant.

Background of Pilot: Saturday morning workload had escalated since the present arrangements of staffing were put in place. Staff were unable to finish on time – 4 hours in place of 3 hours being the norm. Staff were opting-out by swapping off Saturday rota. The Consultant Microbiologists have a need for additional follow-up work on critically ill patients, which was proving difficult to arrange. Lower priority work was currently being deferred until Monday resulting in deterioration of sample quality and delayed reporting of results. This contravened recommended guidelines for testing i.e. within 24-48 hours from time specimen was taken.
**Deliverables:**
- Increased Microbiology service to patients on Saturday morning.
- Improved quality of service to patients on Saturday morning.
- All samples processed within 24 hours of collection improving quality of results and reducing result turnaround times.
- Improved staff morale by relieving stress of workload and allowing them to finish on time.

**Key Findings**

**Impact on Patient/Service:**

- An improved quality of service was delivered to patients on Saturday morning with an average of 30 specimens having follow-up work performed as requested by Consultant Microbiologists. Of these specimens, 24% resulted in clinician being contacted with advice, with the potential benefits for the patient demonstrated by the following examples:
  1. Appropriate antibiotic therapy instigated with other relevant investigations discussed and management of infection planned.
  2. Patient's antibiotic therapy reviewed and appropriate adjustments made if necessary.
  3. Direct Gram smear examined for preliminary indication of infection leading to clinician being contacted with result and discussion on appropriate antibiotic therapy and management of infection planned.

16% of follow-up work resulted in patient's treatment being reviewed with the likely benefits for the patient given by the following examples:

1. Patient who was on incorrect antimicrobial treatment, which could lead to increased patient morbidity or mortality, was put on appropriate therapy.

2. Meningococcal isolate confirmed. Discussion with clinician ensured index case was treated with appropriate antibiotic and prophylactic antibiotics were given to family contacts with the Public Health Department being informed.

3. New Methicillin-Resistant Staphylococcus aureus (MRSA) carrier confirmed so patient removed from general ward and placed in isolation in accordance with Infection Control Policy for prevention of transmission. Also negative MRSA confirmed leading to removal of patient from isolation ward, improving patient morale and optimising use of hospital resources.

- While the pilot did not succeed in processing all patient samples received on Saturday morning, 59% of the workload received was analysed. The benefit for the patient was faster result turnaround times facilitating earlier clinical decision-making.
41% of the workload, received on Saturday morning, was not processed and deferred for testing until Monday. For the patient this could potentially give rise to questionable quality of results. 'A result is only as good as the quality of specimen received'. In the diagnosis of a Urinary Tract Infection for example, repeat patient sampling may be required to confirm pathogen. The processing of such samples may also lead to more complex technical and labour intensive analysis with increased use of laboratory resources.

It is important to note that, while there was not an increase in workload, the Saturday morning service provided a diagnostic service offered in a timelier manner and guaranteeing prompt microbiological results to patients in the SEHB.

**Impact on Laboratory Staff:**

- The pilot did not deliver improved working conditions for laboratory staff on Saturday morning or improve staff morale. Of the 25 Medical Scientists surveyed following the 6-month pilot, 96% were not willing to continue working the Saturday mornings under the same conditions. The same reasons for dissatisfaction pre-pilot emerged post-pilot in that there was inadequate staff numbers to match workload. Although there had been an increase in staffing by one Medical Scientist and one Medical Laboratory Assistant the workload undertaken during pilot period had also increased.

- Staff felt the pilot not only identified the benefits to patients but also highlighted the problems associated in provision of the service i.e. inadequate staff numbers. 92% of staff would be willing to work more Saturday mornings with increased staffing and 88% of staff would be willing to work more Saturday mornings with a decreased workload.

- The role of Medical Laboratory Assistant (MLA) was too limited to support the workload on Saturday morning. Of the five MLA staff surveyed, only one was willing to continue working Saturday mornings under the same conditions. Main reason given was inadequate training for duties, carried out on Saturday morning, which differed from those performed by MLA during core hours.

**Other major impacts:**

- **Laboratory Service:** the processing of samples on Saturday morning had a positive impact on Monday, resulting in a more manageable workload for Medical Scientists.

- **Future Laboratory Service:** as workload was quantified on Saturday morning it was possible to more accurately match the workload received with appropriate staffing levels.

**Actual Cost of Pilot:**

Medical Scientist - Payment of one day or a day in lieu
Medical Laboratory Assistant - 3 hours overtime payment
Total = €6,500
**Sustainability:** Not in its present format due to inadequate numbers of Medical Scientists to match the workload. But staff are willing to participate on the Saturday rota with the proviso that there is increased staffing or the workload to be undertaken is decreased. The data collated provides documented evidence for a more accurate assessment of the number of staff required and the appropriate skill mix (scientific staff) to provide a full and improved quality Microbiological service to patients of the SEHB. The compensatory time in lieu (one day), favoured by Medical Scientists who worked the Saturday morning, would also need to be re-sourced in the long-term. This would ensure that the provision of this service does not impact on the workload of the core week and an extra member of staff covered the 'time in lieu' taken by staff.

From a Hospital Management perspective, the project has realised benefits and potential benefits to the patient and the service, with the Hospital financing the project with increased staffing post pilot period. But they acknowledge that additional resources are required to ensure adequate staffing levels to sustain the service in the long-term.

**Transferability:** Yes providing there is a large enough pool of laboratory staff available to support the service and that the service needs such laboratory support on Saturday morning.
Pilot Project 4: Microbiology Laboratory St James’s Hospital

**Hospital Profile:** St. James’s Hospital is the largest acute general hospital in the Republic of Ireland. There are approximately 780 beds. St. James’s provides a comprehensive range of diagnostic and treatment services, many with national or regional status.

**National Specialties/Services** include Plastics, Burns, Reconstructive Surgery; Haemophilia Services; Bone Marrow Transplant Unit; Maxillo-Facial Surgery; National Medicines Information Centre; National Pharmacoeconomics Centre; National Dementia Information and Development Centre; National MRSA Reference Laboratory and National TB Reference Laboratory.

**Supra-Regional Specialties/Services** include AIDS Unit; Oesophageal Surgery; Cardiac Surgery and Vascular Surgery.

**Regional Specialties/Services** include Cardiology; Respiratory Medicine; Endocrinology; ENT; Gastrointestinal medicine; Gynaecology; Genito-Urinary Medicine; Clinical Haematology; Rheumatology; Thoracic Surgery and Medical Oncology.

**Catchment Specialties/Services** include Major Emergency Unit; Major Care of the Elderly Centre; Orthopaedics (trauma); Palliative Care; Dermatology; Neurology; Nephrology; General Medicine; General Surgery and Urology.

**Laboratory Profile:** The Pathology Department is under the management of a Directorate Model, LabMed, composed of a Business Manager, Laboratory Manager and Clinical Director. The Microbiology Department is under the direct management of the Chief Medical Scientist.

**Staffing:** 43.5 WTE Medical Scientist positions including one Chief Medical Scientist, 13 Senior Medical Scientists and 29.5 Medical Scientists. Also included are 9 Medical Laboratory Assistants, 4 Consultants and 4 NCHDs.

**Activity:** Provides routine testing for In-patients, Out-patient Clinics and General Practitioners in the area. Laboratory processes approximately 267,000 samples annually.

The Genito-Urinary Infectious Diseases (GUIDE) Clinic is the second largest Out-patient Clinic in St James’s Hospital. Samples received and processed from the GUIDE Clinic accounted for approximately 26% of overall Microbiology workload (68,000 specimens) in 2003. 21,641 Sexually Transmitted Infections (STI) Screen requests were recorded in 2003. Serology tests generated by the GUIDE Clinic accounted for 30% of total Serology workload (25,029) in 2003.
Summary of Pilot:

- Increased staffing of one Medical Scientist and one Medical Laboratory Assistant Monday-Friday dedicated to 'on site' cover of workload from the GUIDE Clinic.

- Three evenings per week later laboratory service for the patients of the GUIDE Clinic. One Medical Scientist covers Tuesday and Thursday evenings for 0.5 session payment per evening. Medical Laboratory Assistant covers Monday evening for a payment of 3 hours overtime.

- Recruitment of 1 Medical Scientist and 1 Medical Laboratory Assistant.

Background of Pilot: The laboratory 'on site' service had developed on an ad hoc basis as the clinical service had expanded over the years. Staff were rostered depending on availability but increased demands on the routine laboratory service meant that staff were not always available to attend. This lack of continuity resulted in confusion, specimens being lost in transit and delays in getting results to the clinicians. The availability of laboratory results, during clinic hours, supported the clinician in the appropriate treatment of patients.

Attendances at this clinic have more than doubled since 1988 and the number and complexity of tests has also increased. A total of 22,275 patients attended the GUIDE Clinic in 2003. The dramatic rise in the number of people presenting with sexually transmitted infections has lead to a crisis in this service. The increase is related to population changes, the syphilis epidemic and an increase in Sexually Transmitted Infections particularly Chlamydia.

The clinic usually overruns so that patients, sometimes up to 30, seen after 16:30, do not benefit from the same quality of laboratory service as those seen earlier. The direct microscopy is not done after this time and specimens are held until the next day for processing, with resultant loss in viability of organisms.

Deliverables:

- Dedicated laboratory 'on site' service to patients of the GUIDE clinic.

- Later laboratory service three evenings per week for patients of the GUIDE clinic.

Key Findings

Impact on Patient/Service:

- The pilot delivered results to all patients of the GUIDE Clinic on same day as visit. An additional 29% of patients who attended on Tuesday and 7% of patients who attended on Thursday had their results on same day of visit due to the later opening of laboratory. Number of new patients attendances during pilot marginally increased to 548/ month (545/month pre-pilot).

- One of the major benefits for the patient was prompt and appropriate treatment. It also facilitated the Clinic staff in contact tracing and referral for treatment as is practice in the management of sexually
transmitted infectious diseases. Same day appropriate treatment would also impact positively on patient default rates i.e. non-return of patients to Clinic for treatment, which is approximately 10-20 per day. Some of these patients may also arrive at Clinic without appointment further contributing to overrun of the Clinic hours.

- There was a 9% decrease in return patient visits recorded during the 6-month pilot period. This decrease would contribute somewhat to a reduction in waiting lists for appointments. In addition, it would have considerably aided the GUIDE Clinic staff by reducing the time they spent in contacting patients for return visit to undergo treatment.

- 27 patients had their samples prepared for Human Immunodeficiency Virus (HIV) Viral Load analysis each Monday evening. This was equivalent to approximately 65% of total Monday afternoon HIV Clinic workload, the remaining 35% falling within the core day hours. Under half of these samples (47%) were received between 16.30-17.00 with samples being received up to 19.30.

- Regarding workload distribution all samples were received and processed within the core day hours with the exception of Monday, Tuesday and Thursday substantiating the case for the additional later service on these evenings.

- There was 100% agreement among the GUIDE Clinic Users (12 Medical and Nursing Staff) surveyed that later opening of laboratory was required and favoured the continuation of the service. The benefits to patient service by staff surveyed included decreased patient turnaround times (75% agreed); increased number of patients treated (84% agreed); improved quality of service to patient (100% agreed); a more timely service offered to patient (92% agreed) and increased access of the service to patient (84% agreed).

- During the 6-month pilot core day hours, Monday to Friday, approximately 64% (56% pre-pilot) of patients attending the GUIDE Clinic had samples sent to laboratory for analysis. Approximately 58% of these attendances were new patients, which involved more complex and more intensive laboratory analysis of their samples e.g. one new male patient could generate the following workload: a smear read by Medical Scientist 'on site', up to three different samples for culture in detection of Gonorrhoea, a sample for Chlamydia detection and three separate samples for Syphilis, Hepatitis B and HIV Serology. About 50% of new patients were female requiring a larger screening regime and hence more labour intensive laboratory work and follow-up e.g. one new female patient could generate the following workload: 4 smears (3 different sites) read by Medical Scientist 'on site', three different samples for detection of Gonorrhoea, Candida and Bhs, a sample for Chlamydia detection and three separate samples for Syphilis, Hepatitis B and HIV Serology. The complexity of analysis on patients attending the GUIDE Clinic meant they have a considerable impact on the main laboratory workload. It did not just impact on the 'on-site' laboratory workload but placed a considerable burden on the resources of the Microbiology Department as a whole.

**Impact on Laboratory Staff:**

- Staff morale was increased with rostering of staff to cover the 'on site' STI service during core day hours rather than the 'ad hoc' arrangement pre-pilot. 64% (17) of staff surveyed were satisfied with re-rostering of the STI workload and 70% were satisfied with workload.

- Regarding later laboratory service 100% of staff surveyed were satisfied to work evening hours for payment. It should be noted from a pre-pilot survey that only 34% of staff would be willing to start work later and finish work later.
Medical Scientists demonstrated a willingness to respond to the demands of the service with 96% of Medical Scientists willing to work evening hours and 76% willing to work more on-call hours. 65% of staff were willing to continue working evening hours under the same conditions with 4 respondents unwilling. As the reasons given by 3 respondents were invalid (reciting conditions of extended pilot-period) this figure was most likely as high as 93% (one respondent unwilling).

Two Medical Laboratory Assistants (MLAs) participated on the Monday evening roster with the majority of evenings covered by one (23 out of 25 evenings)-training of second MLA was undertaken during pilot. Both were willing to continue to work Monday evenings under the same conditions.

Other major impacts:

- Use of skill mix in the laboratory: the use of the Medical Laboratory Assistant during core day hours and to support the Monday evening service, allowed for clear role definition, with Medical Scientists undertaking the scientific work. It maximised effective use of resources.

- On-call Service: the Medical Laboratory Assistant, dedicated to support the Monday evening service, reduced considerably the pressure on the Medical Scientist rostered to cover on-call. Pre-pilot this Medical Scientist had to undertake this workload as well as process 'emergency' samples.

Actual Cost of Pilot:

Medical Scientist and Medical Assistant Pay = €27,232
MLA Overtime and MS Session Payments = €6,901
Total cost = €34,133

Sustainability: Yes with the following adjustments to present format. The pool of two Medical Laboratory Assistants available would be some cause for concern for long-term sustainability allowing for annual leave, sick leave, etc. and it would be advisable to have a contingency plan e.g. Medical Scientist to cover as during pilot phase. Also permanent recruitment of Scientific and Assistant staff would be required for the long-term sustainability of the core day service.

From a Management perspective, the project has realised benefits to the patient and the service. The structurally improved laboratory service impacted positively on patients and staff (Scientific, Laboratory Assistants and Users) but additional resources are required to sustain this in the long-term.

Transferability: Yes for a similar patient group or other Out-patient group. Due to the voluntary nature in provision of this service by staff out-of-hours, there would need to be an adequate pool of Medical Scientists and Medical Laboratory Assistants to ensure frequency of cover remains limited and does not become a burden on fewer staff.
Pilot Project 5: Histology Laboratory Waterford Regional Hospital

Hospital Profile: Waterford Regional Hospital provides a range of inpatient, outpatient and day care services, including some regional specialties to the population of Waterford City (101,546) and the region respectively. It has 474 inpatient beds and 48 day care beds. Services include A&E, General Medicine, Medicine for the Elderly, Nephrology Services including Renal Dialysis Service, Oncology, Haematology, Palliative Care, Rheumatology, Dermatology, Endocrinology & Diabetes, Gastroenterology, Obstetrics & Gynaecology, Neo-natal & Paediatrics, Ophthalmology, ENT, General Surgery, Vascular Surgery, Urology, Orthopaedics and Acute Psychiatry. In addition to these Waterford Regional Hospital is the regional Orthopaedic Trauma centre and the regional centre for co-ordination of services for Symptomatic Breast Disease.

Laboratory Profile: Set up under a Regional Department of Laboratory Medicine and is managed by a Pathology Clinical Directorate. The Histology Laboratory is under the direct responsibility of the Chief Medical Scientist. The Histology Laboratory is the sole provider of Histopathology services for all the hospitals in the South Eastern Health Board (SEHB) and hospitals it provides diagnostic services include: Waterford Regional Hospital, Wexford General Hospital, St Luke's Hospital Kilkenenny, Kilcreene Orthopaedic Hospital Kilkenenny, South Tipperary Hospital Clonmel and Our Lady's Hospital Cashel.

Staffing: 11 WTE Medical Scientist positions including one Chief Medical Scientist, 2 Senior Medical Scientists and 8 Medical Scientists. Also included are 1 Medical Laboratory Assistant, 4 Consultant Pathologists and 2 NCHDs.

Activity: Provides diagnostic services for patients of Waterford Regional Hospital, Wexford General Hospital, St Luke's Hospital Kilkenenny, St Joseph's Hospital Clonmel and Our Lady's Hospital Cashel. Laboratory processed 23,949 samples in 2003, which was equivalent to 18,752 patients. 280 fine needle breast aspirates and 6,600 (4,700 patients) endoscopy biopsies were processed in 2003, which represented approximately 29% of overall laboratory workload.

Summary of Pilot:

- Introduction of a rapid processing service using an Ultra Rapid Microwave Histo-Processor for fine needle breast aspirates and endoscopy biopsies received before 17.00 Monday-Friday.
- Pathologists available to read and report on processed samples the following morning (excluding Saturdays) and secretarial support to prepare reports for release to clinician.
- Staffing of one Medical Scientist Monday-Friday 17.30-22.00 to cover the service with payment of one session per evening.

Background of Pilot: Clinicians had over the years expressed a desire to have shorter result turnaround times for histology specimens. (Typical turnaround times were of the order of 5 to 8 days before a printed report appeared in the chart). In 2001, a proposal was put forward in the Service Plan to reduce the turnaround time of Histology results particularly for urgent specimens. The Breast Cancer Strategy Group, in particular, had expressed support for this proposal, as it would give speedy access to results on fine needle breast biopsies, used to aid diagnosis of breast cancer. With a combination of a change in laboratory practice and an up-grading of the computer ward enquiry system, it was determined that a turn around time of 24 hours could be achieved for fine needle aspirates...
(FNA) and endoscopy specimens and that this service would be available to clinicians in the SEHB. This 24-hour availability of a FNA result was in line with the recommendation of the Sub-group to the National Cancer Forum - "Development of Services for Symptomatic Breast Disease" March 2000.

**Deliverables:**

- Laboratory turnaround time of 12 hours for all FNAs and endoscopy biopsies received before 17.00 Monday-Friday.
- A 24-hour 'electronic report' to all hospitals in the SEHB for fine needle aspirates and endoscopy biopsies.
- Laboratory staff working an out-of-hour service.

**Key Findings**

**Impact on Patient/Service:**

- The pilot delivered a result turnaround time of 24 hours for 67% (15% pre-pilot) of fine needle breast aspirates and endoscopy biopsies processed during the 6-month period. This increased to 92% (53% pre-pilot) after 72 hours. Regarding fine needle breast aspirates alone, 53% (16% pre-pilot) had achieved a result turnaround time of 24 hours increasing to 93% (54% pre-pilot) after 72 hours. Delays primarily occurred over weekends as slides prepared on Friday evening were not read and reported on till Monday morning (or in the case of a Bank Holiday weekend till Tuesday morning).

- A marginal increase in the number of needle breast aspirates processed per week (7) was noted during 6-month pilot period compared to pre-pilot figures (5).

- A total of 1769 patients benefited from rapidly processed biopsies during the 6-month pilot period. Approximately 280 patients had needle breast aspirates and 4,700 patients had endoscopy biopsies processed in 2003 (Total 4980). Thus with extrapolation of the data the pilot period accounted for the processing of approximately 35% of patients who required either fine needle breast aspirates or endoscopy biopsies.

- A laboratory turnaround time i.e. from receipt of biopsy in laboratory to processing of sample to completion (ready for reading by pathologist) was achieved in 12 hours or less for all rapidly processed tissues during the 6-month pilot period. There was a one-night exception, affecting 19 samples (<1% of total), when there was a breakdown of the Ultra Rapid Microwave Histo-Processor. The majority of samples (71%) achieved a technical turnaround time of less than 10 hours.

- Both User Groups (3 Consultant Breast Surgeons and 4 Consultants who undertake Endoscopies) were in 100% agreement that later opening hours of laboratory benefited patient service by reducing patient turnaround time; improving quality of service to patient; offering a more timely service and increasing access of service to the patient.
Impact on Laboratory Staff:

- The pilot had a positive impact on staff working an out-of-hour's service and offered them access to out-of-hour's payment (which they did not have before).

- Of the 8 staff surveyed, 7 were willing to work evening hours (one undecided), 6 were satisfied with frequency of sessions (2 undecided) and 5 were willing to work more session hours (1 undecided, 2 unwilling).

- All eight respondents were willing to continue working evening hours under the same conditions i.e. present out-of-hours session times, workload on sessions and payment for evening hours.

Other major impacts:

- **Histopathologists**: earlier reading of slides by the Histopathologist was an integral component in the success of the pilot in reducing result turnaround times for patients. They reported a better distribution of their core day workload, as slides were now ready to read and report on at 9.00am. Follow-up work was identified earlier further enhancing an earlier result turnaround time for patients.

- **Clerical Staff**: impacted upon as they prepare the Histology reports. On consultation they prioritised this workload in the morning, facilitating the earlier availability of report to the clinician.

- **Laboratory Service**: the pilot had a positive impact on the routine processing of laboratory samples. Due to the rapidly processed tissues, which are a more technical demanding process, being batched for processing in the evenings, it facilitated a more continual workflow during core day hours.

Actual Cost of Pilot:

70 sessional payments  
Total = €29,367

Sustainability: Yes in its present format. A back-up Ultra-rapid Microwave Histo-Processor would be desirable to ensure no delays in tissue processing, in the event of a breakdown.

From a Hospital Management perspective the project has realised benefits to the patient and the service, with the Hospital continuing to finance the project post pilot period. They acknowledge that the additional laboratory service has impacted positively on patients and staff (Scientific, User and Clerical) but require additional resources to sustain this service in the long-term.

Transferability: Yes for a similar patient group and with some provisos. Due to the voluntary nature in provision of this service by staff out-of-hours, there would need to be an adequate pool of Medical Scientists to ensure frequency of cover remains limited and does not become a burden on fewer staff (12 sessions were worked by each Medical Scientist during the 6-month period). Traditionally, Histology staff do not participate in out-of-hours cover or have access to extra payment for out-of-hours and so it could have a positive impact in recruitment and retention of staff in this discipline. In addition, Histopathologists and secretarial staff would have to be available to support the service. Also a compatible Information Technology System would have to be in place to facilitate a 24-hour “electronic report” to users.
Pilot Project 6: Haematology Department St James's Hospital

Hospital Profile: St. James's Hospital is the largest acute general hospital in the Republic of Ireland. There are approximately 780 beds. St. James's provides a comprehensive range of diagnostic and treatment services, many with national or regional status. National Specialties/Services include Plastics, Burns, Reconstructive Surgery; Haemophilia Services; Bone Marrow Transplant Unit; Maxillo-Facial Surgery; National Medicines Information Centre; National Pharmaco-Economics Centre; National Demential Information and Development Centre; National MRSA Reference Laboratory and National TB Reference Laboratory. Supra-Regional Specialties/Services include AIDS Unit; Oesophageal Surgery; Cardiac Surgery and Vascular Surgery. Regional Specialties/Services include Cardiology; Respiratory Medicine; Endocrinology; ENT; Gastro-intestinal medicine; Gynaecology; Genito-Urinary Medicine; Clinical Haematology; Rheumatology; Thoracic Surgery and Medical Oncology. Catchment Specialties/Services include Major Emergency Unit; Major Care of the Elderly Centre; Orthopaedics (trauma); Palliative Care; Dermatology; Neurology; Nephrology; General Medicine; General Surgery and Urology.

Laboratory Profile: The Pathology Department is under the management of a Directorate Model, LabMed, which is composed of a Business Manager, Laboratory Manager and Clinical Director. The Haematology Department is divided into two laboratories Haematology and Coagulation. Both laboratories are managed independently by a Chief Medical Scientist with a common pool of staff rotating between each laboratory.

Staffing: 32 WTE Medical Scientist positions including two Chief Medical Scientists, 12 Senior Medical Scientists and 18 Medical Scientists. Also included are one Principal Biochemist, 4 Medical Laboratory Assistants, 6 Consultants and 4 NCHDs.

Activity (STAT Laboratory): One Medical Scientist, rotated from the Haematology and Coagulation Laboratories, staffs the STAT laboratory sited in the Out-patients Department. This laboratory is open from 8.30am to 4pm and processes samples from patients attending the following Out-patient Clinics:

- Warfarin clinic
- Rheumatology clinic
- Oncology clinic
- Haematology clinic

Phlebotomy service is available from 8.00am for the above clinics. The Warfarin Clinic is the largest Out-patients Clinic in St James's Hospital and the number of INR measurements performed by the Laboratory is 27,255 annually. The INR test is the International Normalised Ratio and is calculated from the Prothrombin Time measured in the Laboratory. It is a ratio used to monitor the effect of Warfarin therapy on the patient.
Summary of Pilot:

- Laboratory analysis of venous sample for measurement of INR in Stat Lab using ACL Futura analyser which is interfaced to LIS, HIS and Dawn AC.
- 7.30am start in the laboratory by one Medical Scientist to allow analysers to be set up and have the service available to the clinic from 8.00am.
- Payment of 0.5 session for the hours between 7.30-9.30 Monday-Friday to the Medical Scientists, who work these hours on top of their normal contracted core hours.
- Recruitment of 0.5 Medical Scientist to cover duties in the main Coagulation and Haematology Laboratories from which the Medical Scientist was taken to cover early morning.

Background of Pilot: The Stat laboratory operates between 9.30am and 4pm and provides laboratory support to the Warfarin Out-patient Clinic among others at St James's Hospital. Number of patients registered on Warfarin is 1644 and the number of active patients is 1312. It is a Nurse led clinic based in the Out-patient Department and before the initiation of the pilot had converted to a postal clinic with computerised dosing using Dawn AC software. Up to 170 patients are tested each morning in the clinic. Patient appointments begin at 8.00am, but any samples taken at this time are not analysed until 9.30am when Medical Scientist cover is available. This can lead to delays in patient dosing by nursing staff, particularly amendment of Warfarin dose where indicated and puts huge time pressure on nursing staff to ensure return of the report (through postage) to the patient the following day.

Deliverables:

- Earlier laboratory service to patients of the Warfarin Out-patient Clinic.
- Flexibility for laboratory staff.

Key Findings

Impact on Patient/Service:

- An earlier laboratory service was delivered to the Warfarin patients during the pilot, with approximately 28 patients on Warfarin (31% of total daily samples) having their results by 9.30am daily. Patient result turnaround times averaged 15 minutes (Range 13-26 minutes).
- As this is a Postal Clinic one of the main benefits of earlier result turnaround times was that the Clinic operated more efficiently. There was a more even distribution of workload for Clinic Nursing staff with reduced stress in completing patient dosing and ensuring return of the report (through postage) to the patient the following day. Also the earlier result turnaround times allowed a more prompt follow-up on patients, whose dosage needed review, thus improving the quality of care to this patient.
- There was an average of 2260 (2486 pre-pilot) patient attendances per month recorded during the 6-month pilot period. During the pilot one would not have expected to see an increase in patient numbers as other parameters remained the same i.e. 6 patient appointments every 15 minutes and two Phlebotomists available. But the earlier opening of the laboratory offers the potential to facilitate an increase in patient numbers in the future if the need arises.
83% of users (6 Nursing and Medical Staff from the Warfarin Clinic) surveyed were in agreement that the earlier opening of the laboratory benefited patient service but there was mixed agreement on these benefits as follows: patient turnaround time was decreased (50% agreed), quality of service to patient was improved (65% agreed); patient received a more timely service (65% agreed); access of the service to patient was increased (65% agreed) and patient numbers treated were increased (17% agreed). 65% of users agreed that they would like this earlier laboratory service to continue.

**Impact on Laboratory Staff:**

- Positive impact on Medical Scientists in allowing staff to experience alternative work patterns. Less traffic congestion on route to work and availability of parking places were the benefits highlighted by staff to the earlier start.

- The limitations of the pilot did not allow them to experience 'true' flexibility of working i.e. early start and early finish. As staff worked this earlier arrangement in addition to their contracted core day hours, most felt it was too long, particularly for those with on-call commitments and 50% of staff surveyed were dissatisfied with the pilot core day hours. But 82% would be willing to start work earlier and finish work earlier with 100% willing to consider more flexible working hours and 72% willing to consider a change in core day hours.

- Less stressful for individual staff as there was no backlog of samples to be analysed, and, adequate time was allowed to start up analyser and perform mandatory Quality Control before receipt of samples.

- But staff did feel that the 7.30am laboratory start was too early as samples were not taken till 8.00am and did not arrive into laboratory till 8.15 or later.

**Other major impacts:**

- **Phlebotomy/Nursing staff of the Out-patient Warfarin Clinic:** in order to maximise the potential of the 7.30am laboratory start, phlebotomy and nursing staff would also be required to support the earlier opening of the Clinic. This would allow for more samples to be taken earlier and analysed earlier by laboratory staff.

- **Future Laboratory Service:** positive response by laboratory staff to a service demand, which has the potential for expansion to other Out-patient Clinics (Rheumatology, Oncology and Haematology) serviced by this STAT laboratory, reducing the time these patients need spend in clinic awaiting laboratory results. But this obviously would have further resource implications.

**Actual Cost of Pilot:**

- 0.5 Medical Scientist = €15,215
- Session Payment = €15,147
- Total = €30,362
**Sustainability:** Not in its present format. Medical Scientists expressed dissatisfaction with the pilot core day hour i.e. 7.30-17.00, which was too long a day particularly for those with out-of-hours commitment. The majority of staff surveyed would be in favour of an earlier start and finish, and more flexible working hours so the pilot could be sustained on a long-term basis with staff working more flexible hours as opposed to extra paid hours. Recruitment of a permanent 0.5 Medical Scientist position could prove problematic. Also there would be a requirement for an adequate pool of staff to ensure frequency of early cover remains limited and does not become a burden on fewer staff.

From a Management perspective the project has realised benefits to the patient and the service. The structurally improved laboratory service impacted positively on patients and staff (Scientific, User and Phlebotomy) but additional resources are required to sustain this in the long-term.

**Transferability:** Yes for the same patient group or another Out-patient group(s) but with the same provisos as highlighted for sustainability. Nursing, Medical and Phlebotomy Staff would also have to be in place to support the earlier laboratory hours. Such a restructuring of laboratory services could further enhance the benefits to a patient group, whose results must be reviewed before they can leave an Out-patient Clinic.
Pilot Project 7: Pathology Department Tralee General Hospital

Hospital Profile: Tralee General Hospital is the second largest of the Southern Health Board's seven acute hospitals. The hospital provides acute general hospital services to the population of Co. Kerry (132,424 – 2002 Census) and additionally to a proportion of the populations of West Limerick and North Cork. It has 378 inpatient beds and the hospital treats 15,000 inpatients per annum. Approximately 40,000 patients attend the Outpatients Department annually.

Support services include Accident/Emergency Department, Audiology, Diabetics, Endoscopy Suite, Medical Assessment Unit, Occupational Therapy, Out-Patient Department, Pathology Laboratory, Physiotherapy and Speech and Language Therapy.

Specialties include Ear, Nose & Throat Services, General Medicine including Medicine of the Elderly, General Surgery, Gynaecology, Obstetrics, Orthopaedics, Paediatric including Special Baby Care Unit, Pathology, Psychiatry, Radiography including C.T. Scanning Service, Renal Dialysis Satellite Unit, Oncology Satellite Unit and Palliative Care.

The following additional Specialist Out-Patient Services are provided by Visiting Consultants: Dental, Dermatology, Nephrology, Neurology, Oncology, Ophthalmology, Plastic Surgery, Rheumatology and S.T.D.

A 46-bed geriatric unit serving the Tralee catchment area is also located in the hospital. 2 beds are allocated to respite care.

Laboratory Profile: The Pathology Department is composed of five laboratories Haematology, Blood Transfusion, Histopathology, Biochemistry and Microbiology. The Department is under the management of the Chief Medical Scientist as Scientific Head and Consultant Pathologist as Clinical Director.

Staffing: 26.5 WTE Medical Scientist positions including one Chief Medical Scientist, 7 Senior Medical Scientists and 18.5 Medical Scientists. Also included are 1 Senior Biochemist, 0.5 Medical Laboratory Assistant and 1 Consultant Pathologist.

Activity: Pathology service supports 378 acute hospital beds (45% of demand), 5 district hospitals (5% of demand) and 70 General Practitioners (50% of demand). The Laboratory analysed 619,985 tests in 2003.
Summary of Pilot:

- To set up protocols that would be tailored appropriately in relation to patients of Accident/Emergency (A/E) and Medical Assessment Unit (MAU) both with regard to routine and out-of-hours.
- Involve tests performed in the disciplines of Haematology and Biochemistry only.
- Recruitment of local Project Manager and payment of locum replacement for two-thirds of 6-month period.
- Clerical support provided by Hospital.

Background of Pilot: The Pathology Department finds itself servicing an escalating workload within defined budgetary constraints. It is widely recognised that whilst requesting every pathology test on every patient may increase clinically effectiveness, it does so at a considerable cost. Clinical efficacy on the other hand incorporates, at least at a contextual level, the issue of cost. It is proposed to examine the demand side of the equation. The approach is to provide for scientifically based increases in demand through consultation with clinicians to optimise use of pathology resources i.e. to establish a joint process in determining the optimal role of the laboratory in patient management.

Deliverables:

- Agreed effective protocols for diagnostic laboratory testing in the A/E and MAU Departments.
- A more effective and efficient diagnostic service with clear guidance as to appropriateness, or otherwise, of requesting patterns from users of A/E and MAU.
- More effective and efficient use of resources.

Key Findings

Impact on Patient/Service:

- The pilot delivered agreed effective protocols to patients from A/E and MAU. A clinically safe time window was identified whereby repeat testing was not required and implemented as a way of managing this request demand.
- Tests agreed upon included: Thyroid Function Tests, Autoimmune Profile, Random Cholesterol, B12, Folate, and Ferritin, Tumour Markers, Uric acid, Allergy screens and Coeliac screens. In addition, it could be assessed the impact of the demand management protocols on referred tests (Haematinics, Autoimmune profile and part of Coeliac Screen).
- Decreased result turnaround times for patients from MAU and A/E was achieved primarily due to the key infrastructure (Central Specimen Reception and Single Request Form) required to manage the demand from an administrative perspective. As this was independent of demand protocols this would have impacted positively on all patient samples from other Wards and Clinics.
An absolute decrease in needle pricks for patients.

**Impact on Laboratory Staff:**

- It offered staff of the Pathology Department the opportunity to examine the current level of service offered (although in a limited capacity) and evaluate how closely this matched the service required by users.

- Laboratory staff pre-pilot had consistently voiced their beliefs that a high number of unnecessary test requests on certain analytes were being processed. The pilot provided quantitative data to substantiate such perceptions. Pre-pilot this ranged from 1-55% of tests being duplicated at least once on A/E patients and 16-67% of tests being duplicated at least once on MAU patients.

- Although the pilot period of 7 weeks to monitor protocols was too limited to assess the impact on staff, regarding contribution of a reduction of volume of work to their daily stress load, there would certainly have been an absolute decrease of specimens during pilot period. Also staff would not be engaged in unnecessary duplication of workload.

- As patient data and test requesting was now performed by clerical staff, it allowed for clearer role definition with Medical Scientists undertaking more scientific work. It maximised effective use of resources.

**Other major impacts:**

- **Costs savings:** with the protocols in place for a 7-week period a saving of €6,346 was realised with a projected annual saving of €47,140. This cost did not include packaging and transport costs associated with tests referred to other centres for analysis.

- **Dynamic consultative process:** initiated between scientists and clinicians to improve clinical effectiveness of a limited number of tests for the patient. This aspect of the project provides a stable platform to expand the project in scope and scale.

- **Central Specimen Reception (CSR) /Single Request Form:** Whilst initially implemented to provide a key infrastructural element to the demand protocols, the piloting of a single request form and central specimen reception proved an additional benefit. It separated the pre-analytical and analytical stages of specimen processing and thus permitted examination of the forces, which interact at each level. Thus delays in turnaround times of results could be identified and improved upon. The CSR and Single Request Form, with clerical staff ordering tests as patient's demographics were entered, contributed to reduction in administration time and ultimately patient result turnaround times.

- **Impact on phlebotomy staff:** more efficient use of their resources due to a decrease in unnecessary sampling of patients.

- **Clerical staff:** one of the groups in the laboratory undergoing the most fundamental change. The transfer of test requesting to the clerical staff required a significant increase in their workload, which was not possible under the existing system. Thus a Single Request Form was required during the 7-week pilot period, which would generate a theoretical reduction in their workload of 50%.
Specimen delivery: transport delays, particularly during out-of-hours (approx 50% of result turnaround time), were highlighted and contributed significantly to delayed result turnaround times.

Actual Cost of Pilot:

Payment of Medical Scientist = €13,000  
Clerical Support = €2,000  
Savings Generated = €6,346  
Total = €8,654

Sustainability: Yes from two perspectives. In terms of patient groups, during the pilot period it was decided to focus initial attention on A/E and MAU subgroups but this could be expanded to all patient groups by applying relevant re-design/change. The demand protocols themselves could be considerably expanded from the present base, implementing a clinically safe time window for other analytes and thereby manage the demand from an administrative perspective. The appropriate infrastructure (CSR, single request form and an Information Technology System) would have to be in place. A local project manager would also be required to co-ordinate the process.

From a Management perspective the project has realised benefits to the patient, staff and the service with more effective and efficient use of resources. The Hospital would be interested in a continuation and expansion of the project. However, there would be a requirement for additional resources for sustainability in the long-term.

Transferability: Yes providing the appropriate infrastructure is in place to manage the demand from an administrative perspective.
Chapter 7
Conclusions and Recommendations
CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations of the Joint Implementation Group are based on the experiences of the pilot sites. They are outlined under the following headings:

Patient/Service

Conclusion:

- The pilot projects were primarily service demand driven and produced evidence of their benefits in the following areas:
  - Improved quality of service to patients.
  - Improved patient turnaround times
  - Improved result turnaround times
  - More timely service to patients
  - Increased access to the laboratory service for users

- The pilots demonstrated the commitment of Medical Scientists to the effective and efficient delivery of a quality laboratory service to the patient.

- Benefits were not universally transferable as demand was specific and patient focused (see Executive Summary on individual pilot sites).

- Based on the experiences of the pilot, additional funding/resources were required.

Recommendation:

- See recommendations under Laboratory Staffing/Hours of Work
Laboratory Staffing/Hours of Work

(i) Hours of work

Conclusion:

- Adequate staffing is essential for the delivery of a quality, timely service in keeping with patient/client expectations/demands and must take account of:
  - current core hours
  - emergency out-of hours
  - non-emergency out-of hours
  - service demand for extended hours

- There was willingness by laboratory staff to commence and finish work earlier during the pilots. Although half of the staff surveyed in the pilot sites were willing to change core day hours, the following issues were recognised:
  - level of compensation for early start
  - change of contractual hours
  - availability and cost of child-minding facilities
  - change of personal circumstances resulting in individuals being unable to do early start in the future
  - benefit of earlier finish not realised by all staff either due to shortage of staff or supervisory responsibilities which had to be undertaken by senior staff
  - inadequate staff to cover the service at later part of day

- The issues arising from the pilots dealing with the extended working day or provision of additional out-of-hours service differ according to the size of the laboratory. The individual staff, who work in smaller departments, have a more frequent and long-term commitment to participate in such arrangements than individual staff, who work in larger departments.

- Additional services provided by means of out-of-hours cover or an extended working day would require appropriate staffing and skill mix. The Joint Implementation Group does not underestimate the difficulties involved, having regard to the overall employment ceilings.

- Appropriate staff grades would need to be present in the laboratory during extended day to obtain and maintain accredited status.
Recommendation:

- Regarding the extended working day discussions are required between the Health Service Employers Agency and the Medical Laboratory Scientists Association in the context of “Sustaining Progress” (Paragraph 23.10.)

- When the need arises for additional laboratory services a business plan should be developed at local level, identifying how these additional services can be best provided and implemented. The service planning process should be utilised, involving consultation with all staff and taking account of all factors effecting the ability to deliver such a service, including the following:
  - activity levels
  - staffing levels
  - facilities
  - demand management (see section on Demand Management)
  - rosters
  - multidisciplinary staff/training
  - supervision
  - health and safety issues

(ii) Laboratory staffing/Emergency Out-of-Hours

Conclusion:

- Small laboratories with a small pool of Medical Scientists struggle to provide 24 hour cover and also to meet the requirements of the Organisation of Working Time Act 1997.

- Small laboratories providing on-call have a requirement for multidisciplinary trained staff.

Recommendation:

- Small laboratories should, as a matter of urgency, determine the service requirements and the feasibility for the provision of emergency out-of-hours service with special regard to:
  - staffing
  - multidisciplinary staff
  - training needs
  - supervision
- health and safety issues
- compliance with the Working Time Act 1997

A National Working Group should be established with immediate effect, to include representatives from hospital and laboratory management and Medical Scientists from a number of small Laboratories, to progress and monitor this recommendation.

Skill Mix

Conclusion:

- While the role of the Medical Laboratory Assistant was not critically examined during this process, the two selected pilot projects, in which they participated, showed a lack of clarity in their role and responsibilities.

Recommendation:

- A comprehensive review of the role, duties and training requirements of the Medical Laboratory Assistants be undertaken. This review will be carried out by the Joint Implementation Group, regarding Medical Laboratory Assistants in the context of the Expert Group Report 2001. It will be complementary to work carried out in the context of the National Skills Project for Support Staff due to be completed by the end of March 2005.

Demand Management/Workload Activities

Conclusion:

- The success of this initiative and its future lies in the consultative process initiated between all relevant disciplines, particularly between Laboratory and Medical Staff. This aspect of the project provides a stable platform to expand the project in scope and scale.

- Efficiencies and costs savings within the laboratory service were achieved with the implementation of appropriate protocols and their monitoring/review.

- Demand management has a vital role to play in the organisation of workloads, particularly in the area of duplication and inappropriate test request patterns.

- The supporting infrastructure in Pathology, such as an Information Technology System, Central Specimen Reception and the appropriate support staff, improved the efficiency of laboratory.

Recommendation:

- The demand management pilot project should be extended to a number of selected hospitals. This will require similar resources as the original pilot site, on a once off basis, at both local and national level. It will be nationally co-ordinated and implemented under the direction of the Joint Implementation Group.
As a priority, set up or revitalise the Pathology Management Committees, as per recommendation of the Expert Group Report 2001. These committees would closely liaise with the service users (Consultants, General Practitioners's, etc) to establish a diagnostic service with clear guidelines and protocols as to appropriateness of requesting patterns.

All support staff central to laboratory operations e.g. Phlebotomists, Medical Laboratory Assistants, Clerical and Portering staff should be under the day to day direction of the Chief Medical Scientist/Laboratory Manager as per recommendation of the Medical Laboratory Service Review Group report 2001.

A standard workload measurement system of activity, as per recommendation of the Medical Laboratory Service Review Group Report 2001, which remains an outstanding issue, needs to be addressed.

Technology

Conclusion:

The availability of an appropriate Information Technology (IT) System was evident in a number of the pilot projects and contributed significantly to their success.

Recommendation:

The alignment of pathology services with effective laboratory IT systems, which are fully integrated with the core patient related information systems, across the continuum of care, as outlined in the National Health Information Strategy.

Communication/ Service Links

Conclusion:

A primary component of the success of the pilot projects was the interaction of the multi-disciplinary teams in the provision of the service to the patient.

All of the pilots were in line with the National Health Strategy in being patient focused.

Recommendation:

That Pathology Management Committees are active and dynamic in the context of:

- service planning
- demand management (as previously outlined)
- active communication with all relevant parties in the provision of the service.
Chapter 8

Data Analysis
Pilot Project 1: Pathology Department Wexford General Hospital

LABORATORY SERVICE IMPACT:

Number of Specimens processed On-call (4 week periods) 6 months pre-pilot period

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of specimens pre-23.00</td>
<td>1300 (250/wk)</td>
<td>996 (249/wk)</td>
<td>1026 (257/wk)</td>
<td>993 (248/wk)</td>
<td>1246 (249/wk)</td>
<td>902 (225/wk)</td>
</tr>
<tr>
<td>No. of specimens post 23.00</td>
<td>273 (68/wk)</td>
<td>283 (71/wk)</td>
<td>277 (69/wk)</td>
<td>300 (75/wk)</td>
<td>320 (64/wk)</td>
<td>295 (74/wk)</td>
</tr>
<tr>
<td>Total No.</td>
<td>1273</td>
<td>1279</td>
<td>1303</td>
<td>1293</td>
<td>1566</td>
<td>1197</td>
</tr>
</tbody>
</table>

* 5-week period

Average Number of Specimens per week pre 23.00 = 246
Average Number of Specimens per week post 23.00 = 70

Number of Specimens processed On-call and Night Core Hours (4-week periods) during 6-month pilot period

<table>
<thead>
<tr>
<th>Period</th>
<th>1/9/03-28/9/03</th>
<th>29/9/03-26/10/03</th>
<th>27/10/03-23/11/03</th>
<th>24/11/03-21/12/03</th>
<th>22/11/03-18/11/04</th>
<th>19/1/04-15/2/04</th>
<th>16/2/04-14/3/04</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of samples pre-23.00</td>
<td>980 (245/wk)</td>
<td>923 (231/wk)</td>
<td>1019 (255/wk)</td>
<td>899 (225/wk)</td>
<td>773 (193/wk)</td>
<td>959 (240/wk)</td>
<td>1001 (250/wk)</td>
</tr>
<tr>
<td>No. of samples post 23.00</td>
<td>283 (71/wk)</td>
<td>277 (69/wk)</td>
<td>261 (63/wk)</td>
<td>259 (65/wk)</td>
<td>314 (79/wk)</td>
<td>287 (72/wk)</td>
<td>284 (71/wk)</td>
</tr>
<tr>
<td>Total Samples</td>
<td>1263</td>
<td>1200</td>
<td>1280</td>
<td>1158</td>
<td>1087</td>
<td>1246</td>
<td>1285</td>
</tr>
</tbody>
</table>

Average Number of Samples per week pre 23.00 = 234 (5% decrease in sample numbers received compared to pre-pilot)
Average Number of Samples per week post 23.00 = 70
Multi-discipline Call: During pilot Time period 23.00-08.00

Night Duty Sample Breakdown per Discipline for March 2004

- Microbiology: 3%
- Transfusion: 4%
- Haematology: 47%
- Biochemistry: 46%

Above chart shows a breakdown of samples received per discipline. It should be noted that each discipline would have a number of test profiles of which all or some of them may be requested as follows:

- **Haematology**: Full Blood Count, D-dimers, Coagulation (INR + APPT), Blood Films.
- **Biochemistry**: Renal Profile, Cardiac enzymes, Liver Profile, Bone Profile, Glucose, Amylase, Magnesium, Paracetemol.
- **Blood Transfusion**: Group and Hold, Cross-matching. Issuing of blood products including Anti-D, Cord Bloods.
- **Microbiology**: Urinalysis on Neonates, Cerebro-Spinal Fluid (CSF) Analysis.

Regarding the complexity of multidiscipline call, of the 327 calls recorded for March 2004, when the complexity of sample type and tests done was taken into account, this was equivalent to 571 single discipline calls being performed. (Approx 1:2 ratio i.e. for every patient sample two single discipline calls were indicated and each discipline could have a number of tests requested as indicated above)

- 33% of the Blood Transfusion samples processed on-call were x-matching units of blood which is not an automated procedure and therefore more labour intensive.
Pre-pilot: Time period 23.00-08.00

On-call Sample Breakdown per Discipline for March 2003

- Haematology 47%
- Biochemistry 45%
- Transfusion 5%
- Microbiology 3%

Of the 302 calls recorded in March 2003, when the complexity of sample type and tests done was taken into account, this was equivalent to 556 single discipline calls being performed (Approx. 1:2 ratio as per during pilot)
General Laboratory Activity

Figures for Biochemistry and Haematology Disciplines

<table>
<thead>
<tr>
<th>Pre-pilot</th>
<th>No. of Tests</th>
<th>During pilot</th>
<th>No of Tests</th>
<th>Activity Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 02</td>
<td>44,448</td>
<td>October 03</td>
<td>47,040</td>
<td>6%</td>
</tr>
<tr>
<td>November 02</td>
<td>44,473</td>
<td>November 03</td>
<td>46,767</td>
<td>5%</td>
</tr>
<tr>
<td>January 03</td>
<td>47,845</td>
<td>January 04</td>
<td>49,466</td>
<td>3%</td>
</tr>
<tr>
<td>February 03</td>
<td>40,364</td>
<td>February 04</td>
<td>48,411</td>
<td>20%</td>
</tr>
<tr>
<td>March 03</td>
<td>44,082</td>
<td>March 04</td>
<td>52,579</td>
<td>19%</td>
</tr>
<tr>
<td>April 03</td>
<td>46,826</td>
<td>April 04</td>
<td>47,996</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

- Overall increase in laboratory activity during core day hours of 3% during 6-month pilot period recorded for Biochemistry and Haematology Disciplines

Figures for Blood Transfusion Discipline

<table>
<thead>
<tr>
<th>Pre-pilot</th>
<th>No. of Tests</th>
<th>During pilot</th>
<th>No of Tests</th>
<th>Activity Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 02</td>
<td>348</td>
<td>October 03</td>
<td>401</td>
<td>15%</td>
</tr>
<tr>
<td>November 02</td>
<td>309</td>
<td>November 03</td>
<td>354</td>
<td>15%</td>
</tr>
<tr>
<td>January 03</td>
<td>374</td>
<td>January 04</td>
<td>387</td>
<td>4%</td>
</tr>
<tr>
<td>February 03</td>
<td>363</td>
<td>February 04</td>
<td>330</td>
<td>9%</td>
</tr>
<tr>
<td>March 03</td>
<td>325</td>
<td>March 04</td>
<td>380</td>
<td>17%</td>
</tr>
<tr>
<td>April 03</td>
<td>364</td>
<td>April 04</td>
<td>386</td>
<td>6%</td>
</tr>
</tbody>
</table>

- Overall increase in laboratory activity during core day hours of 11% during 6-month pilot period recorded for Blood Transfusion Discipline

- An increase of 36% recorded in the number of units of blood transfused in 2003 when compared with figures in 2002
Workflow during Core Day Hours

Time Charts below track flow of workload during day core hours from time samples are taken to the authorisation of results for the month of March 2004. Total number of samples recorded = 266

- By 9.00 8% of samples are taken and 0% received
- By 10.00 32% of samples taken, 14% received and 2% results authorised
- By 11.00 43% of samples taken, 35% received and 26% of results authorised
- By 12.00 66% of samples taken, 50% received and 43% of results authorised
- By 13.00 77% of samples are taken, 71% received and 62% of results authorised

Time Chart of Samples Taken

- 8.00-9.00: 8%
- 9.01-10.00: 24%
- 10.01-11.00: 11%
- 11.01-12.00: 23%
- 12.01-13.00: 11%
- 13.01-14.00: 6%
- 14.01-15.00: 10%
- 15.01-16.00: 5%
- 16.01-17.00: 2%
PATIENT IMPACT:
Average Turnaround Times 23.00-09.00 pre and during 6-month Pilot Period (19/9/03-20/11/03 and 1/3/04-31/3/04)

<table>
<thead>
<tr>
<th></th>
<th>Time sample taken to time received in laboratory in Minutes</th>
<th>Time sample analysed to time result is authorised in Minutes</th>
<th>Total Sample Turnaround Time in Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-pilot 19/7/03-11/8/03</td>
<td>36 (Range 1-278)</td>
<td>25 (Range 1-32)</td>
<td>61</td>
</tr>
<tr>
<td>During pilot 19/9/03-20/11/03</td>
<td>28 (1-100)</td>
<td>18 (Range 3-50)</td>
<td>46</td>
</tr>
<tr>
<td>During pilot 1/3/04-31/3/04</td>
<td>18 (Range 2-60)</td>
<td>15 (Range 1-50)</td>
<td>33</td>
</tr>
</tbody>
</table>

(A) Includes transportation to laboratory and preparation of sample for analysis i.e. labelling, demographic input, centrifuging and separation

On-call Sample Turnaround Time Graph

(A) Time sample taken to time received and ready for analysis in laboratory -36% reduction during pilot

(B) Time Sample analysed to Result authorised -32% reduction during pilot

C (A + B) Total Sample Turnaround Time- 34% reduction during pilot
Average Turnaround Times for samples from patients of Oncology and Day Care Unit
(Pre-pilot 21/7/03-27/8/03 and during Pilot 1/10/03-31/10/03 and 1/304-31/3/04)

<table>
<thead>
<tr>
<th>Patient</th>
<th>Spec collected-time received in Minutes (Range)</th>
<th>Spec analysed-Result authorised in Minutes (Range)</th>
<th>Specimen Turnaround Time in Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>During Oct</td>
<td>Mar</td>
</tr>
<tr>
<td>Oncology Day Ward</td>
<td>35 (1-82)</td>
<td>30 (10-61)</td>
<td>34</td>
</tr>
<tr>
<td>Day Care Unit</td>
<td>47 (13-103)</td>
<td>32 (28-46)</td>
<td>48</td>
</tr>
</tbody>
</table>

(A) Includes transportation of sample to laboratory and preparation of sample for analysis i.e. labelling, demographic input, centrifuging and separation.

Oncology Sample Turnaround Time Graph

(A) Time sample taken to time received and ready for analysis in laboratory - 9% reduction during pilot
(B) Time Sample analysed to Result authorised 41% reduction during pilot
C (A+B) Total Sample Turnaround Time- 26% reduction during pilot
Average number of Oncology Day Ward patient attendances pre-pilot = 64 per month

Average number of Oncology Day Ward patient attendances during 6-month pilot = 78 per month
(Increase in patient attendances during pilot period of 22%)

Number of recorded Oncology Day Ward Patient samples undergoing a haematology profile analysis in laboratory (March 2004) = 84 per month

Number of these patients recorded who underwent chemotherapy (March 2004) = 42 per month
(approx 50%)

Earliest time sample was recorded as taken from Oncology patient was 9.00am (3 samples-4% of total)

Earliest time sample was received and ready for analysis was 9.27am (11 samples-13% of total)

**Day Care Unit Sample Turnaround Time Graph**

(A) Time sample taken to time received and ready for analysis in laboratory -15% reduction during pilot

(B) Time sample analysed to Result authorised -13% increase during pilot

C (A + B) Total Sample Turnaround Time - 4% reduction during pilot

Average number of DCU patient attendances pre-pilot = 283 per month

Average number of DCU patient attendances during 6-month pilot = 272 per month

Earliest time recorded sample from DCU patient was taken was 9.00am (2 samples-8%)

Earliest time recorded sample was received and ready for Haematology profile analysis was 9.53am (1 sample-4%)
Surveys: 6-month Pilot and Comparative Figures

Medical Scientist: Post 6-month Pilot Summary Report

Seven Medical Scientists (including one Senior Medical Scientist) undertook this survey and the main points from the survey are as follow:

- There is 100% satisfaction with core day hours during pilot
- 72% are willing to start work earlier with 14% (one respondent) remaining undecided and 14% (one respondent) unwilling
- 86% are willing to start work early and finish early with one respondent unwilling
- Regarding flexible working hours 86% are willing to consider more flexible working hours with 14% unwilling
- 48% of staff remain undecided about changing core day hours with 28% agreeing and 28% disagreeing
- 58% are willing to continue working the early hours under the same conditions with one respondent undecided and 28% (two respondents) not willing. Reasons given by one respondent was a personal dislike of early start particularly in winter and the second respondents reason was the impact on the later part of day due to shortage of staff when 'early' person had left and also the need to find volunteers to cover early start due to person rostered being unavailable due to AL, night duty, SL, etc.
Questions

1. I am satisfied with present core day hours
2. I am willing to commence work earlier
3. I am satisfied to start work early
4. I am willing to consider more flexible working hours
5. I am willing to change my core day hours
6. I am willing to continue working the earlier hours under the same conditions

- 28% of staff are satisfied working core night hours with 44% undecided and 28% dissatisfied

- Taking a closer look at what issues arise working on-call and night core hours:

  - 58% are satisfied with the core night hours roster with 42% dissatisfied
  - 72% are not satisfied with core night hour payment with one respondent undecided and one respondent satisfied
  - 28% are satisfied, 58% undecided and 14% dissatisfied to work core night hours if optional
  - 58% are satisfied, 14% (one respondent) undecided and 38% are dissatisfied to work core night hours with increased annual leave to reflect weekend involvement
44% are satisfied with on-call roster with 28% dissatisfied and 28% (two respondents) undecided.

86% are satisfied with night core hours 23.00-08.00 with one respondent dissatisfied.

28% (two respondents) disagree with on-call and night core hours being worked together with 44% satisfied and one respondent remaining undecided.

58% are not satisfied working part on-call hours and night core hours with 28% satisfied and one respondent remaining undecided.

Regarding working consecutive night core hours 28% would like to consider with 44% remaining undecided and 28% either disagreeing or strongly disagreeing. When asked to indicate the number of consecutive nights respondents favoured working, two respondents indicated 3 and one undecided respondent indicated 3 providing on-call hours were not attached.

57% would not be willing to continue working core night hours under the same conditions with 43% remaining undecided. Reasons given by respondents were as follows: too many weekends to cover; inequitable and present payment system; pattern of roster too disruptive; current core hours; too difficult to swap out of; change in traditional core hours from 5-day week to 7-day week and opposed to the principle of core night hours.

28% would prefer to work night core hours than previous on-call system with 58% undecided and one respondent unwilling.

As for the pilot addressing the problem issues surrounding out-of-hours work in a small hospital:

86% of staff feel it addresses the Quota system of payment with one respondent disagreeing.

86% believe it eliminates 24 hour continuous working with one respondent disagreeing.

72% do not believe that pilot addresses multi-disciplinary call with two respondents (28%) agreeing.

As regards addressing safe work practice 58% agree, 28% disagree and one respondent remains undecided regarding individual fatigue whereas 58% disagree, 28% agree and one respondent is undecided regarding individual stress.
### Questions

7. I am satisfied working core night hours
8. I am satisfied with the core night hour roster
9. I am satisfied with core night hour payment
10. I am satisfied to work core night hours if optional
11. I am satisfied with core night hours with increased annual leave to reflect weekend involvement
12. I am satisfied with the on-call roster
13. I am satisfied with core night hours 23.00-08.00
14. I am satisfied working on-call and night core hours together
15. I am satisfied working on-call and night core hours together
16. I am satisfied working part-on-call and night core hours together
17. I would like to consider working consecutive night core hours
   Indicate number
18. I would like to continue working core night hours under the same conditions
19. I would prefer to work night core hours than previous on-call system
20. I believe the pilot Project addresses Quota system of payment
21. I believe the pilot Project addresses multidisciplinary on-call
22. *I believe the Pilot Project addresses safe work practice i.e. Individual fatigue
23. *I believe the Pilot Project addresses safe work practice i.e. Individual stress

* Question separated for data analysis
### Comparative Medical Scientist Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>7-week Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied with core day hours</td>
<td>100</td>
<td>86</td>
<td>100</td>
</tr>
<tr>
<td>Willing to commence work earlier</td>
<td>57</td>
<td>57</td>
<td>72</td>
</tr>
<tr>
<td>Willing to start / finish later</td>
<td>14</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Willing to start / finish earlier</td>
<td>86</td>
<td>72</td>
<td>86</td>
</tr>
<tr>
<td>Willing to consider flexible working hours</td>
<td>86</td>
<td>100</td>
<td>86</td>
</tr>
<tr>
<td>Would be willing to change core hours</td>
<td>29</td>
<td>57</td>
<td>28</td>
</tr>
<tr>
<td>Satisfied with present on-call hours</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Believe core night hours is an appropriate system</td>
<td>0</td>
<td>14</td>
<td>NA</td>
</tr>
<tr>
<td>Satisfied to work core night hours</td>
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<td>14</td>
<td>28</td>
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<tr>
<td>Believe core night hours will suit me to work</td>
<td>29</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>Believe the Pilot addresses multi-disciplinary call</td>
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<td>14</td>
<td>28</td>
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<tr>
<td>Believe the Pilot address Quota system of payment</td>
<td>86</td>
<td>100</td>
<td>86</td>
</tr>
<tr>
<td>Believe the Pilot eliminates 24 hour continuous working</td>
<td>100</td>
<td>100</td>
<td>86</td>
</tr>
<tr>
<td>Believe the Pilot addresses safe work practice</td>
<td>86</td>
<td>43</td>
<td>58 (Fatigue) 28 (Stress)</td>
</tr>
</tbody>
</table>
Comparative Medical Scientist Satisfaction Survey Results Continued

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>7-week Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied with core night hours roster</td>
<td>NA</td>
<td>29</td>
<td>58</td>
</tr>
<tr>
<td>Satisfied with on-call roster</td>
<td>NA</td>
<td>57</td>
<td>44</td>
</tr>
<tr>
<td>Satisfied with core night hours 23.00-8.00</td>
<td>NA</td>
<td>42</td>
<td>86</td>
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<tr>
<td>Satisfied working on-call and core night hours together</td>
<td>NA</td>
<td>43</td>
<td>44</td>
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<tr>
<td>Would like to consider part on-call and core night hours</td>
<td>NA</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>Would like to consider working consecutive nights</td>
<td>NA</td>
<td>58</td>
<td>28</td>
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<tr>
<td>Would like to consider working consecutive nights Mon-Fri</td>
<td>NA</td>
<td>58</td>
<td>NA</td>
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<tr>
<td>Would like to consider working consecutive nights Sat-Sun</td>
<td>NA</td>
<td>58</td>
<td>NA</td>
</tr>
<tr>
<td>Would like to consider separate rostering of on-call and core night hrs</td>
<td>NA</td>
<td>42</td>
<td>NA</td>
</tr>
<tr>
<td>Would like to consider separate rostering of weekday and weekends</td>
<td>NA</td>
<td>42</td>
<td>NA</td>
</tr>
<tr>
<td>Satisfied with core night hour payment</td>
<td>NA</td>
<td>NA</td>
<td>14</td>
</tr>
<tr>
<td>Satisfied to work core night hours if optional</td>
<td>NA</td>
<td>NA</td>
<td>28</td>
</tr>
<tr>
<td>Satisfied to work core night hours with increased AL to reflect weekend involvement</td>
<td>NA</td>
<td>NA</td>
<td>58</td>
</tr>
<tr>
<td>Prefer to work core night hours than previous system</td>
<td>NA</td>
<td>NA</td>
<td>28</td>
</tr>
</tbody>
</table>
User Surveys:

Oncology Day Ward: Post 6-month Pilot Summary Report

Two respondents undertook this survey and the main points from the survey are as follow:

- 100% agree operating hours of laboratory during pilot are convenient for user

- There is 100% agreement that earlier opening of laboratory benefits patient service. Regarding the benefits:
  - 100% agree that earlier opening time of laboratory decreases patient turnaround time
  - 100% do not agree that early opening of laboratory increases the number of patients treated
  - There is 100% agreement that earlier opening time of laboratory improves quality of service to patient and offers a more timely service to patient and increases access of service to patient

- 100% would like this laboratory service to continue
Overall 6-month Oncology User Satisfaction Rate

Questions

1. Operating hours of laboratory during pilot are convenient for user
2. Earlier opening time of laboratory benefits patient service
3. Earlier opening time of laboratory decreases patient turnaround time
4. Earlier opening time of laboratory increases number of patients treated
5. Earlier opening time of laboratory improves quality of service to patient
6. Earlier opening time of laboratory offers a more timely service to patient
7. Earlier opening time of laboratory increases access of service to patient
8. I would like earlier laboratory opening hours to continue
Comparative User (Oncology) Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>3-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current opening hours are convenient for user</td>
<td>0</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Earlier opening hours are required</td>
<td>100</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Benefit patient service</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Decrease turnaround time</td>
<td>100</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Increase number of patients treated</td>
<td>100</td>
<td>33</td>
<td>0</td>
</tr>
<tr>
<td>Improve quality of service</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Offer more timely service</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Increase access of service to patient</td>
<td>NA</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Day Care Unit: Post 6-month Pilot Summary Report

Three respondents undertook this survey and the main points from the survey are as follow:

- There is 100% agreement that operating hours of laboratory during pilot are convenient for user.
- There is 100% strong agreement that earlier opening of laboratory benefits patient service. Regarding the benefits:
  - 100% agree that earlier opening time of laboratory decreases patient turnaround time.
  - 67% agree and 33% (one respondent) is undecided that earlier opening of laboratory increases the number of patients treated.
  - There is 100% agreement that earlier opening time of laboratory improves quality of service to patient and offers a more timely service to patient and increases access to service for patient.
  - 67% strongly agree with 33% undecided about whether they would like the laboratory opening hours to continue.
- 1 non-respondent
Overall 6-month DCU User Satisfaction Rate

Questions

1. Operating hours of laboratory during pilot are convenient for user
2. Earlier opening time of laboratory benefits patient service
3. Earlier opening time of laboratory decreases patient turnaround time
4. Earlier opening time of laboratory increases number of patients treated
5. Earlier opening time of laboratory improves quality of service to patient
6. Earlier opening time of laboratory offers a more timely service to patient
7. Earlier opening time of laboratory increases access of service to patient
8. I would like earlier laboratory opening hours to continue
## Comparative User (DCU) Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>3-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current opening hours are convenient for user</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Earlier opening hours are required</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Benefit patient service</td>
<td>0</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Decrease turnaround time</td>
<td>50</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Increase number of patients treated</td>
<td>100</td>
<td>0</td>
<td>67</td>
</tr>
<tr>
<td>Improve quality of service</td>
<td>50</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Offer more timely service</td>
<td>50</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Increase access of service to patient</td>
<td>NA</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Pilot Project 2: Haematology/Blood Transfusion Laboratory Midland Regional Hospital Tullamore

PATIENT/SERVICE IMPACT:
Number of Oncology/Haematology Patients
Pre-pilot: March-August 2003

Total Number of patients = 2412
Average number of patients per month = 402
Average number of patients per day=20


Total number of patients=2532
Average number of patients per month = 422
Average number of patients per day=21
Patients admitted between 8.00-9.30am over the following 4-week periods:

8/9/03 to 3/10/03
- Average Number of patients per week = 14 (Range 0-6)
- Length of Chemotherapy Infusion Regime ranged from 1 minute to 4.5 hours
- Over the 4-week period 49% of patients underwent a Chemotherapy Infusion
- Length of time from results received on ward to infusion start for patient ranged from 15 minutes to approx 2 hours (Average 62 minutes)

6/10/03-31/10/03
- Average Number of patients per week = 13 (Range 1-4)
- Over this 4 week period 46% of patients underwent Chemotherapy Infusion
- Length of Chemotherapy Infusion Regime ranged from 1 to 3 hours 15mins
- Length of time from results received on ward to start of infusion for patient ranged from 40mins-2 hours (Average 79 minutes)

3/11/-28/11/03
- Average Number of patients per week = 15 (Range 1-5)
- Over this 4 week period 60% of patients underwent Chemotherapy Infusion. 56% of these patients reported earliest finish ever to user.
- Length of Chemotherapy Infusion Regime ranged from 10 minutes - 2 hours 10 minutes
- Length of time from results received on ward to start of infusion for patient ranged from 15 minutes - 1 hour 15 minutes (Average 52 minutes)

1/12/-26/12/03
- Average Number of patients per week = 8 (Range 0-4)
- Over this 4 week period 50% of patients underwent Chemotherapy Infusion.
- Length of Chemotherapy Infusion Regime ranged from 40 minutes - 2 hours 10 minutes
- Length of time from results received on ward to start of infusion for patient ranged from 33 mins - 2 hours 23 minutes (Average 74 minutes). Long delay from Pharmacy for 50% of patients who underwent Chemotherapy infusion.

29/12/-23/1/04
- Average Number of patients per week = 16 (Range 1-7)
- Over this 4 week period 25% of patients underwent Chemotherapy Infusion
- Length of Chemotherapy Infusion Regime ranged from 1 min - 2 hours 10 minutes
- Length of time from results received on ward to start of infusion for patient ranged from 10 minutes - 1 hour 10 minutes (Average 45 minutes).

26/1/-20/2/04
- Average Number of patients per week = 19 (Range 1-7)
- Over this 4 week period 53% of patients underwent Chemotherapy Infusion
- Length of Chemotherapy Infusion Regime ranged from 1 minute - 4 hours 30 minutes
- Length of time from results received on ward to start of infusion for patient ranged from 30 mins - 2 hour 40 minutes (Average 62 minutes).

23/2/-5/3/04 (2 week)
- Average Number of patients per week = 10 (Range 1-4)
- No patient logging
During the 6-month pilot, 75% of early morning patients were admitted between 8.31-9.00. 85% of these patients had blood samples taken between same time period of 8.31-9.00. 60% of their blood samples were received by laboratory between 8.31-9.00. 34% of patients had results reported between 8.31-9.00. 94% of patients had results reported by laboratory by 9.30. 40% of patients who underwent chemotherapy now commenced their therapy between 9.31-11.00 allowing the average time for compounding of chemotherapy fluids to range from 30-60 minutes. 25% of patients had completed their chemotherapy treatment between 11.01-12.00 allowing for the average treatment of 62 minutes (range from 1 minute-4.5 hours)

During the 6-month pilot the Length of a Chemotherapy Infusion Regime for a patient ranged from 1 minute (injection) to 4.5 hours. Length of time from receipt of results to ward to start of infusion averaged 62 minutes (Range 10 minutes to 2 hours 40 minutes). So at times there was some delay for the patient between the time the ward received result to the time of start of infusion. The reasons for delay were three fold:

1. Patient had to undergo review by Consultant Oncologist or Consultant Haematologist before a decision on their treatment could be made
2. Shortage of staff in Pharmacy to start compounding treatment infusions at earlier time
3. Initially at start of pilot two other reasons emerged for the delays but which on consultation were soon rectified:
The cleaning of the RHODU took place every morning at 8.00am which was accommodated by cleaning staff at the earlier time of 7.00am.

The sterilisation of the Clean Room in Pharmacy, where chemotherapy infusions are prepared, was undertaken in the morning once a week, delaying the use of this facility by two hours. This procedure is now carried out in the afternoons when demand on this facility is low.

The Pharmacy Department prepare the chemotherapy infusions/oral medications for the Haematology/Oncology patient. The earlier they are contacted by ward the earlier the infusions are prepared and ready. Average time for compounding of chemotherapy fluids ranges from 30 to 60 minutes. A short impact study indicated the following:

- An increase of approximately 50-75% in workload was observed during pilot-this impact was primarily due to a change of Protocols in treatment of patient i.e. the patient required more than one compounded infusion. Thus the increased complexity of treatment added to Pharmacy workload. Extrapolation of data on number of patients per month attending, 47% undergoing treatment (from data of early morning patient applied) and the total items dispensed by Pharmacy (include oral medications, outsourced infusions and compounded infusions) gives an approximate ratio of 1:2 i.e. for every one patient approximately two items are dispensed.
- For staff a more even distribution of workload and reduction in individual pressure.
- Less downtime and an increase in productivity of compounding unit.

LABORATORY SERVICE IMPACT:

Patients who had Full Blood Counts (FBC) processed by laboratory between 8.00-9.30am:

- Over 6-month period average number of patients per week = 14
- Over 6-month period average number of patients per day = 3 (Range 0-7)
- This was equivalent to approximately 14% of daily patient attendances although it ranged from 0% - 33%
- Average Technical Turnaround Time of sample on receipt in laboratory= 7 minutes (Range 2-25 minutes)
- Results were faxed by Medical Scientist almost instantaneously on completion of analysis
- Approximately 2 patients per month also benefited from the earlier processing of their samples for Group, Screen and X-match and were able to commence and complete their infusions of blood/blood products much earlier.

Other Duties on Early Morning Start: As well as analysing and reporting results on blood samples from Oncology/Haematology patients the Medical Scientist covering from 8.00 to 9.30 also had designated.
duties in the three specific areas of Laboratory-Haematology, Coagulation and Blood Transfusion. These included preparing controls, priming analysers in Haematology and Coagulation and performing Quality Control. In Blood Transfusion grouping tubes were set up and cell suspensions prepared. Also all forms and results reported from on-call period (17.30-9.00) were checked and verified. This work carried out earlier and allowing for QC failures and their rectification, ensured samples could be analysed immediately at start of routine day.

Surveys: 6-month Pilot and Comparative Figures

Medical Scientist: Post 6-month Pilot Summary Report

Seven Medical Scientists (including 3 Senior Medical Scientists) undertook this survey and the main points from the survey are as follow:

- There is 44% satisfaction with the core hours worked during pilot with 28% (two respondents) undecided and 28% dissatisfied
- There is 100% willingness to commence work earlier and 100% agreement to start work earlier and finish work earlier
- 72% are willing to consider more flexible working hours with 28% (two respondents) undecided
- 44% are willing to change core working hours with 28% (two respondents) undecided and 28% unwilling
- 86% are not willing to continue working the early hours under the same conditions with 14% (one respondent) undecided. Reasons indicated are inadequate compensation for early start, possible contract changes, extra cost of childminding facilities, benefit of early finish not guaranteed, and change of personal circumstances resulting in being unable to do early start in the future

*One respondent was willing depending on conditions*
Questions

1. I am satisfied with present core day hours
2. I am willing to commence work early
3. I am willing to start work early and finish work early
4. I am willing to consider more flexible working hours
5. I am willing to change my original core working hours
6. I am willing to continue working the early hours under the same conditions
Comparative Medical Scientist Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>2-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied with core day hours</td>
<td>86</td>
<td>83</td>
<td>44</td>
</tr>
<tr>
<td>Willing to commence work earlier</td>
<td>86</td>
<td>49</td>
<td>100</td>
</tr>
<tr>
<td>Willing to start / finish early</td>
<td>100</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Willing to start / finish later</td>
<td>14</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Willing to consider flexible working hours</td>
<td>86</td>
<td>83</td>
<td>72</td>
</tr>
<tr>
<td>Would be willing to change core hours</td>
<td>57</td>
<td>17</td>
<td>44</td>
</tr>
</tbody>
</table>

User Surveys: Post 6-month Pilot Summary Report

Consultant Haematologist, Consultant Oncologist and Clinical Nurse Manager who support the service undertook this survey and the main points from the survey are as follow:

- All three respondents agree that the current operating hours of the laboratory are convenient for user.
- The three respondents are in strong agreement that earlier opening of laboratory benefits patient service and that these benefits are as follows:
  - 2 respondents agree with one respondent undecided that it decreases patient turnaround time
  - All three respondents strongly agree that patient numbers treated are increased
  - The three respondents strongly agree that quality of service to patient is improved
  - Three respondents strongly agree that a more timely service is offered to patient
  - 3 respondents agree (2 respondents strongly) that access to the service for patient is increased
- All three respondents strongly agree that they would like this service to be continued
Overall 6-month User Satisfaction Rate

Questions

1. Current operating hours of laboratory are convenient for user
2. Earlier opening time of laboratory benefits patient service
3. Earlier opening time of laboratory decreases patient turnaround time
4. Earlier opening time of laboratory increases number of patients treated
5. Earlier opening time of laboratory improves quality of service to patient
6. Earlier opening time of laboratory offers a more timely service to patient
7. Earlier opening time of laboratory increases access of service to patient
8. I would like this laboratory service to be continued
## Comparative User Satisfaction Survey Results

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<tr>
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<th>2-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current opening hours are convenient for user</td>
<td>0</td>
<td>67</td>
<td>100</td>
</tr>
<tr>
<td>Earlier opening hours are required</td>
<td>100</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Benefit patient service</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Decrease turnaround time</td>
<td>100</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>Increase number of patients treated</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Improve quality of service</td>
<td>100</td>
<td>100</td>
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</tr>
<tr>
<td>Offer more timely service</td>
<td>NA</td>
<td>100</td>
<td>100</td>
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<tr>
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## Pilot Project 3: Microbiology Laboratory Waterford Regional Hospital

### LABORATORY SERVICE IMPACT:
Summary of Saturday Specimen Figures

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<th>Date</th>
<th>Urines</th>
<th>Blood Culture</th>
<th>Swabs</th>
<th>Faeces</th>
<th>Sputa</th>
<th>MRSA</th>
<th>Tot</th>
<th>Spec not set-up</th>
<th>Follow-up work</th>
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## Summary of Saturday Specimen Figures

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<th>Urines</th>
<th>Blood Swabs</th>
<th>Faeces</th>
<th>Sputa</th>
<th>MRSA</th>
<th>Tot</th>
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<th>Follow-up work</th>
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<td>30 (29%)</td>
<td>12 (12%)</td>
<td>1 (1%)</td>
<td>1 (1%)</td>
<td>103 (41%)</td>
<td>42 (41%)</td>
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- 15% of normal daily workload is processed on Saturday mornings
- Average of 103 specimens were received on a Saturday morning with 59% being processed
- Average of 42 specimens received on Saturday morning were not processed equating to 41% of workload received
Breakdown of Workload 6-month Pilot Period

- 59% Follow-up work
- 17% Processed
- 24% Not processed

Breakdown of Samples Processed 6-month Pilot Period

- 35%
- 20%
- 12%
- 11%
- 4%

Materials:
- Urines
- Swabs
- Faeces
- Sputa
- MRSA
## PATIENT/SERVICE IMPACT:

### Breakdown of Follow-up Workload and Clinical Impact

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of Specimens</th>
<th>Results reviewed and work continued</th>
<th>Clinician contacted with advice</th>
<th>Patient treatment reviewed</th>
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<tr>
<td>Ave/week</td>
<td>30</td>
<td>18 (60%)</td>
<td>7 (23%)</td>
<td>5 (17%)</td>
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</table>

- Approximately 60% of follow-up work on Saturday mornings had results reviewed and work continued.
- Approximately 23% of follow-up work on Saturday mornings resulted in clinician being contacted by Consultant Microbiologist with clinical advice.
- Approximately 17% of follow-up work resulted in patient treatment being reviewed.
Clinical Impact Analysis 6-month Pilot Period

Results reviewed and work continued:
Regarded as urgent on Friday (either to confirm or eliminate possibility of infection). Continue routine processing of sample with no need for clinical intervention by Consultant Microbiologist.

Clinician contacted with advice:

Example 1: Positive Blood culture confirmed - clinician contacted and if considered significant, appropriate antibiotic therapy and other relevant investigations discussed and management of the infection planned.

Example 2: Infectious organism and antimicrobial sensitivity pattern confirmed - clinician contacted and patient's antibiotic therapy reviewed and appropriate adjustments made if necessary.

Example 3: Direct Gram smear examined - clinician contacted with results and discussion on appropriate antibiotic therapy.

Patient treatment reviewed:

Example 1: Patient is on incorrect antimicrobial treatment, which could lead to increased patient morbidity or mortality and so is put on appropriate therapy.

Example 2: Meningococcal isolate confirmed. Discussion with clinician to ensure index case treated with appropriate antibiotic, prophylactic antibiotics given to family contacts and Public Health Department informed ASAP.
Example 3: New Methicillin-Resistant Staphylococcus aureus (MRSA) carrier confirmed so removed from general ward and placed in isolation in accordance with Infection Control Policy for prevention of transmission.

Also negative MRSA confirmed leading to removal from isolation ward (improves patient morale and optimises use of hospital resources).

Surveys: 6-month Pilot and Comparative Figures

Medical Scientists: Post 6-month Pilot Summary Report

Twenty-five Medical Scientists (including 6 Senior Medical Scientists) who work Saturday mornings in the Microbiology Laboratory undertook this survey and the main points from the survey are as follows:

- 29% of respondents are satisfied with frequency of cover on Saturday morning with 63% dissatisfied and 8% undecided (2 respondents)
- *96% (58% strongly) of staff are not satisfied with workload on Saturday morning with 4% (one respondent) remaining undecided
- 84% (56% strongly) are not satisfied with current Saturday morning duties with 12% satisfied and 4% undecided
- 44% have job satisfaction currently working Saturday mornings knowing patients are benefiting from increased service with 8% remaining undecided and 48% dissatisfied (32% strongly)
- 88% (56% strongly) are not satisfied with increased staffing on Saturday morning with 12% (three respondents) satisfied
- 64% are not willing to work more Saturday mornings with 20% willing and 16% remaining undecided. However 92% are willing to work more Saturday mornings with increased staffing and 88% are willing to work more Saturday mornings with decreased workload
- 96% (64% strongly) of staff would not be willing to continue working Saturday mornings under the same conditions. The reason given by all respondents was too high a workload for too few staff
- Average of two Saturday mornings was worked by each respondent during pilot

*1 non-respondent
Questions

1. Satisfied with frequency of cover on Saturday morning
2. Satisfied with current workload on Saturday morning
3. Satisfied with current Saturday morning duties
4. Have job satisfaction from currently working Saturday morning, knowing patients are benefiting from increased service
5. Satisfied with increased staffing on Saturday morning
6. Would be willing to work more Saturday mornings
7. Would be willing to work more Saturday mornings with increased staffing
8. Would be willing to work more Saturday mornings with decreased workload
9. Would be willing to continue working Saturday mornings under the same conditions
Medical Scientist Satisfaction Comparative Survey Results

<table>
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<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>3-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
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<td>Satisfied with frequency of cover</td>
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<tr>
<td>Satisfied with current workload</td>
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<td>0</td>
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<tr>
<td>Satisfied with current duties</td>
<td>23</td>
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<td>12</td>
</tr>
<tr>
<td>Satisfied with current training</td>
<td>16</td>
<td>0</td>
<td>NA</td>
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<tr>
<td>Have job satisfaction</td>
<td>6</td>
<td>0</td>
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<tr>
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<td>20</td>
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<td>Would be willing to work more Saturdays with increased staffing</td>
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<td>92</td>
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<td>Would be willing to work more Saturdays with decreased workload</td>
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<tr>
<td>Would be willing to undertake new Saturday morning duties</td>
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<td>NA</td>
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<tr>
<td>Would be willing to undertake new Saturday morning duties with increased staffing</td>
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<td>NA</td>
<td>NA</td>
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Satisfied with increased staffing  NA  0  12

Medical Laboratory Assistant: Post 6-month Pilot Summary Report

Five Medical Laboratory Assistants who worked the Saturday mornings (previously did not do so) undertook this survey and the main points from the survey are as follow:

- 60% are satisfied with frequency of cover with 20% (one respondent) dissatisfied and 20% undecided
- 60% of staff are satisfied with current workload on Saturday mornings with 20% (one respondent) dissatisfied and 20% undecided
40% are satisfied with current Saturday morning duties with 60% dissatisfied

80% (40% strongly) are not satisfied with current training for Saturday morning duties with 20% satisfied

40% would be willing to work more Saturday mornings with 40% remaining undecided and 20% unwilling

80% would not be willing to work Saturday mornings under the same conditions with only 20% (one respondent) willing. The reason given by the 4 respondents for this was inadequate or lack of training

An average of 5 Saturday mornings was worked by each respondent over the six month pilot

Overall 6-month Medical Laboratory Assistant Satisfaction Rate

Questions
1. Satisfied with frequency of cover on Saturday morning
2. Satisfied with current workload on Saturday morning
3. Satisfied with current Saturday morning duties
4. Satisfied with current training for Saturday morning duties
5. Would be willing to work more Saturday mornings
6. Would be willing to continue to work on Saturday mornings under the same conditions
Medical Laboratory Assistant Comparative Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>3-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
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<tr>
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<td>40</td>
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<tr>
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<td>Satisfied with current duties</td>
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<tr>
<td>Satisfied with current training</td>
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</tr>
<tr>
<td>Satisfied with frequency of cover</td>
<td>75</td>
<td>60</td>
</tr>
<tr>
<td>Would be willing to work more Saturday mornings</td>
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<td>40</td>
</tr>
<tr>
<td>Satisfied to work Saturday morning for payment</td>
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<tr>
<td>Satisfied to work Saturday morning for time in lieu</td>
<td>75</td>
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### Pilot Project 4: Microbiology Laboratory St James’s Hospital

**PATIENT/LABORATORY SERVICE IMPACT:**
Monday Time Chart of STI Workload during Core Day Hours (Pre-pilot and During)

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<th>Fem (N)</th>
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<th>&gt;10:00</th>
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<th>&gt;12:00</th>
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<td>Total Pre-pilot</td>
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<td>99</td>
<td>288</td>
<td>(26%)</td>
<td>(19%)</td>
<td>(57%)</td>
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<td>Total 6-mth Pilot</td>
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<td>372</td>
<td>359</td>
<td>770</td>
<td>(25%)</td>
<td>(28%)</td>
<td>(60%)</td>
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</table>
• 60% (57% pre-pilot) of patients attending the GUIDE Clinic on Monday have samples sent to laboratory for analysis

• Of these 57% are new patients which involves more complexity of analysis and more labour intensive laboratory work

• New female patients require a larger screening regime and hence more labour intensive laboratory work and follow-up

• Regarding workload distribution 94% (87% pre-pilot) of samples are received in the 'on-site' laboratory between 10.00 and 13.00

• Monday opening hours of GUIDE Clinic to patients are 8.30-17.00 with STI on site cover by laboratory between 9.00-12.30.
Monday Time Chart of Workload Pre-pilot

- >10:00: 19%
- >11:00: 38%
- >12:00: 30%
- >13:00: 12%
- >14:00: 1%

Monday Time Chart of Workload 6-month Pilot

- >9:00: 1%
- >10:00: 25%
- >11:00: 38%
- >12:00: 31%
- >13:00: 5%
- >14:00: 1%
HIV patient clinic takes place in the afternoon but no on site cover is provided by the laboratory. Bloods are brought some distance across the site from GUIDE Clinic to the main laboratory to be processed. Pre-pilot the majority of this workload was performed by the Medical Scientist rostered for On-call.

Average number of specimens processed late on Monday = 27

Regarding time samples are received

- 47% of samples received from 16.30-17.00
- 34% of samples received from >17.00-18.00
- 19% of samples received from >18.00-19.30

The above table represents approx. 65% of Monday afternoon HIV Clinic workload. The remainder (35%) of this workload was carried out by the laboratory during core day hours.
Tuesday Time Chart of STI Workload during Core Day Hours and Evening (Pre-pilot and During)

<table>
<thead>
<tr>
<th>Date</th>
<th>Tot</th>
<th>Male (N)</th>
<th>Fem (N)</th>
<th>Lab &gt;13:00</th>
<th>&gt;14:00</th>
<th>&gt;15:00</th>
<th>&gt;16:00</th>
<th>&gt;16:30</th>
<th>&gt;17:00</th>
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<tr>
<td>6/05/03-27/5/03 May</td>
<td>43</td>
<td>44</td>
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<td>18</td>
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<tr>
<td>3/06/03-24/6/03 Jun</td>
<td>5</td>
<td>31</td>
<td>38</td>
<td>20</td>
<td>25</td>
<td>20</td>
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<tr>
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<td>274</td>
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<tr>
<td>2/09/03-9/9/03 Sep</td>
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<tr>
<td>Total Pre-pilot</td>
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<tr>
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<tr>
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<td>2/3/04-9/3/04 Mar</td>
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<td>Total 6-mth Pilot</td>
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</tbody>
</table>

- 62% (57% pre-pilot) of patients attending GUIDE Clinic on Tuesday have samples sent to laboratory for analysis.
- Of these 58% are new patients which involves more complexity of analysis and more labour intensive laboratory work.
New female patients require a larger screening regime and hence more labour intensive laboratory work and follow-up.

Regarding workload distribution 71% (68% pre-pilot) of samples are received in the 'on-site' laboratory between 14.00 and 16.30 with 29% (32% pre-pilot) received after 16.30.

Tuesday opening hours of GUIDE Clinic to patients are 13.45-17.00

**Tuesday Time Chart of Workload Pre-pilot**

![Pie chart showing workload distribution]

32% of patients did not have their samples analysed and results on same day of visit. Samples received after 16:30 pre-pilot were not processed until Thursday, as there was no cover by the laboratory at the clinic on Wednesdays.

**Tuesday Time Chart of Workload 6-month Pilot**

![Pie chart showing workload distribution]

An additional 29% of patients now have their samples analysed and results on same day.
Thursday Time Chart of STI Workload during Core Day Hours and Evening (Pre-pilot and During)

<table>
<thead>
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<th>Tct</th>
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<th>Lab</th>
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<th>13:00</th>
<th>14:00</th>
<th>15:00</th>
<th>16:00</th>
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<tr>
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</tr>
</tbody>
</table>

- 74%(46% pre-pilot) of patients attending GUIDE Clinic on Thursday have samples sent to laboratory for analysis.
- Of these 62% are new patients which involves more complexity of analysis and more labour intensive laboratory work.
New female patients require a larger screening regime and hence more labour intensive laboratory work and follow-up.

Regarding workload distribution 93% (91% pre-pilot) of samples are received in the 'on-site' laboratory between 11.00 and 16.30 with 7% (9% pre-pilot) received after 16.30.

Thursday opening hours of GUIDE Clinic to patients are 9.00-17.00 with an Adolescent Patient Clinic in morning and Adult Patient Clinic in afternoon.

Thursday Time Chart of Workload Pre-pilot

9% of patients did not have their samples analysed and results on the same day of visit.

Thursday Chart Time of Workload 6-month Pilot

An additional 7% of patients now have their samples analysed and results on same day of visit due to later opening.
### Friday Time Chart of STI Workload during Core Day Hours (Pre-pilot and During)

<table>
<thead>
<tr>
<th>Date</th>
<th>Tot (N)</th>
<th>Male (N)</th>
<th>Fem (N)</th>
<th>Lab</th>
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<tr>
<td>9/09/03-12/9/03</td>
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<tr>
<td>Total Pre-pilot</td>
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<td>3/10/03-31/10/03</td>
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<td>3</td>
<td>37</td>
<td>49</td>
<td>29</td>
</tr>
<tr>
<td>5/12/03-26/12/03</td>
<td>Dec</td>
<td>148</td>
<td>40</td>
<td>42</td>
<td>91</td>
<td>1</td>
<td>29</td>
<td>37</td>
<td>24</td>
</tr>
<tr>
<td>2/1/04-30/1/04</td>
<td>Jan</td>
<td>268</td>
<td>77</td>
<td>82</td>
<td>180</td>
<td>2</td>
<td>47</td>
<td>61</td>
<td>56</td>
</tr>
<tr>
<td>6/2/04</td>
<td>Feb</td>
<td>208</td>
<td>56</td>
<td>57</td>
<td>124</td>
<td>3</td>
<td>35</td>
<td>49</td>
<td>35</td>
</tr>
<tr>
<td>5/3/04</td>
<td>Mar</td>
<td>96</td>
<td>20</td>
<td>29</td>
<td>45</td>
<td>0</td>
<td>19</td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Total 6-mth Pilot</td>
<td>1301</td>
<td>366</td>
<td>366</td>
<td>785</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 60% (65% pre-pilot) of patients attending GUIDE Clinic on Friday have samples sent to laboratory for analysis.
- Of these 56% are new patients which involves more complexity of analysis and more labour intensive laboratory work.
- New female patients require a larger screening regime and hence more labour intensive laboratory work and follow-up.
Regarding workload distribution 97% (95% pre-pilot) of samples are received in the 'on-site' laboratory between 9.00 and 13.00.

Friday opening hours of GUIDE Clinic to patients are 9.00-13:00

---

**Friday Time Chart of Workload Pre-pilot**

- >11:00: 35%
- >12:00: 21%
- >13:00: 5%
- >9:00: 8%
- >10:00: 31%

**Friday Time Chart of Workload 6-month Pilot**

- >11:00: 43%
- >12:00: 29%
- >13:00: 2%
Patient attendance figures for 2003/2004 (Pre-pilot and during pilot)

<table>
<thead>
<tr>
<th>STI 2003 Attendances</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Tot</th>
</tr>
</thead>
<tbody>
<tr>
<td>STI New</td>
<td>542</td>
<td>506</td>
<td>557</td>
<td>572</td>
<td>521</td>
<td>517</td>
<td>586</td>
<td>516</td>
<td>570</td>
<td>553</td>
<td>537</td>
<td>478</td>
<td>6457</td>
</tr>
<tr>
<td>STI Return</td>
<td>487</td>
<td>372</td>
<td>401</td>
<td>407</td>
<td>494</td>
<td>422</td>
<td>454</td>
<td>400</td>
<td>439</td>
<td>417</td>
<td>309</td>
<td>318</td>
<td>4920</td>
</tr>
<tr>
<td>% of Return</td>
<td>90</td>
<td>74</td>
<td>72</td>
<td>71</td>
<td>95</td>
<td>82</td>
<td>77</td>
<td>77</td>
<td>77</td>
<td>75</td>
<td>58</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>HIV Attendances</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV New</td>
<td>13</td>
<td>11</td>
<td>15</td>
<td>24</td>
<td>7</td>
<td>11</td>
<td>12</td>
<td>15</td>
<td>12</td>
<td>15</td>
<td>14</td>
<td>8</td>
<td>157</td>
</tr>
<tr>
<td>HIV Return</td>
<td>289</td>
<td>273</td>
<td>281</td>
<td>272</td>
<td>273</td>
<td>259</td>
<td>308</td>
<td>239</td>
<td>278</td>
<td>303</td>
<td>302</td>
<td>254</td>
<td>3331</td>
</tr>
<tr>
<td>HepC New</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>HepC Return</td>
<td>31</td>
<td>26</td>
<td>26</td>
<td>43</td>
<td>32</td>
<td>12</td>
<td>47</td>
<td>42</td>
<td>58</td>
<td>35</td>
<td>52</td>
<td>58</td>
<td>462</td>
</tr>
</tbody>
</table>

| Day Ward Attendances |     |     |     |     |     |     |     |     |      |     |     |     |      |
| Vac HepB New         | 0   | 0   | 0   | 0   | 0   | 42  | 39  | 81  | 104  | 157 | 150 | 70  | 692  |
| HepB Vac Return      | 0   | 0   | 0   | 0   | 0   | 16  | 11  | 22  | 24   | 62  | 66  | 56  | 257  |

<table>
<thead>
<tr>
<th>STI 2004 Attendances</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Tot</th>
</tr>
</thead>
<tbody>
<tr>
<td>STI New</td>
<td>617</td>
<td>534</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STI Return</td>
<td>392</td>
<td>429</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of Return</td>
<td>64</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV Attendances</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV New</td>
<td>8</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV Return</td>
<td>334</td>
<td>281</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepC New</td>
<td>1</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HepC Return</td>
<td>64</td>
<td>67</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Non-return of patients would be a major benefit of same day receipt of results by patient. 9% decrease seen during 6-month pilot.
- **Pre-pilot**: 79% return; New Patients=545/month; Return Patients= 430
- **During pilot**: 70% return; New Patients=548/month; Return Patients= 384
Surveys: Post 6-month Pilot and Comparative Figures

Medical Scientist: Post 6-month Pilot Summary Report

Seventeen Medical Scientists (including two Senior Medical Scientists) undertook this survey in March 2004 and the main points from the survey are as follow:

- 70% are satisfied with STI workload during core day hours with 18% dissatisfied (3 respondents) and 12% undecided

- 64% are satisfied, 30% undecided and 6% (one respondent) dissatisfied with re-rostering of STI work during core day hours

- *62% of respondents are satisfied with present on-call hours with 19% dissatisfied (3 respondents) and 19% undecided

- 94% are willing to work evening hours with 6% (one respondent) undecided

- 76% are willing to work more on-call hours with 6% unwilling and 18% undecided

- *31% of staff are satisfied with frequency of cover for GUIDE Clinic with 38% undecided and 31% are dissatisfied

- 70% are satisfied with workload on Tuesday and Thursday evenings with 18% dissatisfied and two respondents (12%) undecided

- 100% (35% strongly) are satisfied to work evening hours for payment

- 52% are not willing to work evening hours for time in lieu with 42% undecided and 6% (one respondents) willing

- 65% are willing to continue working evening hours under the same conditions with 12% undecided and 23% unwilling. Reasons for not wishing to continue given by three of the four respondents were invalid as they do not refer to conditions of the first 6-month pilot period

- Average number of sessions worked by each Medical Scientist over the 6-month period was 2.

* 1 non-respondent
Overall 6-month Medical Scientist Satisfaction Rate

Questions

1. Satisfied with STI workload during core day hours
2. Satisfied with re-rostering of STI work during core day hours
3. Satisfied with present on-call hours
4. Willing to work evening hours
5. Willing to work more on-call hours
6. Satisfied with frequency of cover for GUIDE Clinic
7. Satisfied with workload on Tuesday and Thursday evenings
8. Satisfied to work evening hours for payment
9. Would be willing to work evening hours for time in lieu
10. Willing to continue working evening hours under the same conditions
### Comparative Medical Scientist Staff Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>3-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied with present core day hours</td>
<td>70</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Would be willing to commence work earlier</td>
<td>74</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Would be willing to start/finish later</td>
<td>34</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Would be willing to start/finish early</td>
<td>82</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Would like to consider more flexible working hours</td>
<td>86</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Would be willing to change core day hours</td>
<td>90</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Satisfied with present on-call hours</td>
<td>47</td>
<td>42</td>
<td>62</td>
</tr>
<tr>
<td>Would be willing to work later than core day hours</td>
<td>43</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Willing to work evening hours</td>
<td>52</td>
<td>85</td>
<td>94</td>
</tr>
<tr>
<td>Willing to work more on-call hours</td>
<td>63</td>
<td>84</td>
<td>76</td>
</tr>
<tr>
<td>Satisfied with STI workload during core day hours</td>
<td>NA</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td>Satisfied with re-rostering of STI during core day hours</td>
<td>NA</td>
<td>95</td>
<td>64</td>
</tr>
<tr>
<td>Satisfied with frequency of cover</td>
<td>NA</td>
<td>61</td>
<td>31</td>
</tr>
<tr>
<td>Satisfied with workload on Tues/Thurs</td>
<td>NA</td>
<td>84</td>
<td>70</td>
</tr>
<tr>
<td>Satisfied to work evening hours for payment</td>
<td>NA</td>
<td>95</td>
<td>100</td>
</tr>
<tr>
<td>Would be willing to work evening hours for time in lieu</td>
<td>NA</td>
<td>16</td>
<td>6</td>
</tr>
</tbody>
</table>

### Medical Laboratory Assistant: Post 6-month Pilot Summary Report

2 Medical Laboratory Assistants undertook this survey and the main points from the survey are as follow:

- 50% (one respondent) are satisfied with STI workload during core day hours with 50% dissatisfied
- 100% are willing to work Monday evening and evening hours
- 100% are satisfied with workload on Monday evening
- 50% (one respondent) are satisfied with frequency of cover for GUIDE Clinic with 50% dissatisfied
- 100% are undecided about working more evening hours
- 50% (one respondent) are satisfied to work evening hours for payment with 50% (one respondent) undecided
- 100% are willing to continue working Monday evenings under the same conditions
- Regarding coverage of Monday evening 23 were worked by one respondent and 2 worked by the other during 6-month pilot period
Overall 6-month Medical Laboratory Assistant Satisfaction Rate

Questions

1. Satisfied with STI workload during core day hours
2. Willing to work Monday evening
3. Willing to work evening hours
4. Satisfied with workload on Monday evening
5. Satisfied with frequency of cover for GUIDE Clinic
6. Would be willing to work more evening hours
7. Satisfied to work evening hours for payment
8. Willing to continue working Monday evening under the same conditions
Comparative Medical Laboratory Assistant Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied with STI workload during core day hours</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Willing to work Monday evening</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Willing to work evening hours</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Satisfied with workload on Monday evening</td>
<td>25</td>
<td>100</td>
</tr>
<tr>
<td>Satisfied with frequency of cover</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>Would be willing to work more evening hours</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Satisfied to work evening hours for payment</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

User Surveys: Post 6-month Pilot Summary Report

12 Medical and Nursing Staff undertook survey and the main points from the survey are as follow:

- There is 100% strong agreement that the current operating hours of the Microbiology Laboratory are convenient for user.
- There is 100% agreement (92% strongly) that later laboratory opening hours are required.
- There is 100% strong agreement that later opening of laboratory benefits patient service.
- 75% agree, 17% disagree and 8% (one respondent) remain undecided that later opening decreases patient turnaround time.
- 84% agree (76% strongly), 8% disagree (one respondent) and 8% remain undecided that later opening increases number of patients treated.
- There is 100% strong agreement that later opening improves quality of service to patient.
- 92% agree (84% strongly) and 8% (one respondent) remain undecided that later opening offers a more timely service to patient.
- 84% strongly agree, 8% (one respondent) disagree and 8% remain undecided that later opening increases access of the service to patient.
There is 100% strong agreement for the later opening hours of laboratory to continue

Overall 6-month GUIDE User Satisfaction Rate

Questions

1. Current operating hours of laboratory are convenient for user
2. Later laboratory opening hours are required
3. Later opening time of laboratory benefits patient service
4. Later opening time of laboratory decreases patient turnaround time
5. Later opening time of laboratory increases number of patients treated
6. Later opening time of laboratory improves quality of service to patient
7. Later opening time of laboratory offers a more timely service to patient
8. Later opening time of laboratory increases access to service for patient
9. I would like the later laboratory opening hours to continue
### Comparative User Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>3-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current opening hours are convenient for user</td>
<td>33</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Later opening hours are required</td>
<td>86</td>
<td>NA</td>
<td>100</td>
</tr>
<tr>
<td>Benefit patient service</td>
<td>89</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Decrease turnaround time</td>
<td>44</td>
<td>43</td>
<td>75</td>
</tr>
<tr>
<td>Increase number of patients treated</td>
<td>67</td>
<td>72</td>
<td>84</td>
</tr>
<tr>
<td>Improve quality of service</td>
<td>89</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Offer more timely service</td>
<td>78</td>
<td>87</td>
<td>92</td>
</tr>
<tr>
<td>Increase access of service to patient</td>
<td>78</td>
<td>74</td>
<td>84</td>
</tr>
</tbody>
</table>
Pilot Project 5: Histology Laboratory Waterford Regional Hospital

LABORATORY SERVICE IMPACT:

Result Turnaround Time for Total specimens rapidly processed (Needle Breast and Endoscope Biopsies) during pilot in 4-weekly periods except last period 8/3/04-26/3/04(3-weekly)

<table>
<thead>
<tr>
<th>Hours</th>
<th>22/9/03-17/10/03</th>
<th>20/10/03-14/11/03</th>
<th>17/11/03-12/12/03</th>
<th>15/12/03-9/1/04</th>
<th>12/1/04-6/2/04</th>
<th>9/2/04-5/3/04</th>
<th>8/3/04-26/3/04</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>312 (80%)</td>
<td>256 (72%)</td>
<td>291 (75%)</td>
<td>179 (87%)</td>
<td>150 (43%)</td>
<td>297 (77%)</td>
<td>92 (37%)</td>
</tr>
<tr>
<td>48</td>
<td>0</td>
<td>20 (6%)</td>
<td>0</td>
<td>8 (4%)</td>
<td>222 (60%)</td>
<td>40 (10%)</td>
<td>58 (23%)</td>
</tr>
<tr>
<td>72</td>
<td>79 (20%)</td>
<td>36 (10%)</td>
<td>58 (15%)</td>
<td>19 (9%)</td>
<td>0</td>
<td>49 (13%)</td>
<td>27 (11%)</td>
</tr>
<tr>
<td>96</td>
<td>0</td>
<td>42 (12%)</td>
<td>40 (10%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>58 (23%)</td>
</tr>
<tr>
<td>120</td>
<td>0</td>
<td>1 (&lt;1%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>144</td>
<td>0</td>
<td>2 (&lt;1%)</td>
<td>1 (&lt;1%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>12 (5%)</td>
</tr>
<tr>
<td>&gt;144</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2 (1%)</td>
</tr>
<tr>
<td>Total</td>
<td>391</td>
<td>358</td>
<td>390</td>
<td>206</td>
<td>372</td>
<td>386</td>
<td>249</td>
</tr>
<tr>
<td>Patient No.</td>
<td>265</td>
<td>267</td>
<td>297</td>
<td>153</td>
<td>296</td>
<td>302</td>
<td>189</td>
</tr>
</tbody>
</table>

* Bank Holiday
+ No service from 24/12/03 to 5/1/04

- 90 biopsies were rapidly processed per week
Result Turnaround Time (Needle Breast Biopsy and Endoscopy) 6-month Pilot Period

Delays in result turnaround times were seen over weekend period and particularly over Bank Holiday weekend periods.

Needle Breast Biopsy Result Turnaround Time
## Needle Breast Biopsy and Endoscopy Result Turnaround Time Pre Pilot

<table>
<thead>
<tr>
<th>No. of Days</th>
<th>No. (%) January 2003</th>
<th>No. (%) February 2003</th>
<th>No. (%) March 2003</th>
<th>No. (%) April 2003</th>
<th>No. (%) May 2003</th>
<th>No. (%) June 2003</th>
<th>*Endos. Biopsies May 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5(17%)</td>
<td>5(28%)</td>
<td>4(16%)</td>
<td>5(26%)</td>
<td>6(21%)</td>
<td>1(5%)</td>
<td>5(10%)</td>
</tr>
<tr>
<td>2</td>
<td>6(20%)</td>
<td>3(17%)</td>
<td>9(36%)</td>
<td>2(10.5%)</td>
<td>8(28%)</td>
<td>7(35%)</td>
<td>6(12%)</td>
</tr>
<tr>
<td>3</td>
<td>7(23%)</td>
<td>6(33%)</td>
<td>1(4%)</td>
<td>3(15.5%)</td>
<td>5(17%)</td>
<td>0</td>
<td>4 (8%)</td>
</tr>
<tr>
<td>4</td>
<td>10(33%)</td>
<td>1(5.5%)</td>
<td>10(40%)</td>
<td>5(26%)</td>
<td>9(31%)</td>
<td>8(40%)</td>
<td>13(26%)</td>
</tr>
<tr>
<td>5</td>
<td>1(3.5%)</td>
<td>1(5.5%)</td>
<td>1(4%)</td>
<td>2(10.5%)</td>
<td>1(3%)</td>
<td>4(20%)</td>
<td>9 (18%)</td>
</tr>
<tr>
<td>6</td>
<td>1(3.5%)</td>
<td>1(5.5%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7 (14%)</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>1(5.5%)</td>
<td>0</td>
<td>2(10.5%)</td>
<td>0</td>
<td>0</td>
<td>6 (12%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>18</strong></td>
<td><strong>25</strong></td>
<td><strong>19</strong></td>
<td><strong>29</strong></td>
<td><strong>20</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

*Random selection of endoscopy biopsies for May 2003 to establish baseline data

5 needle breast biopsies were processed per week pre-pilot

### Needle Breast Biopsy Result Turnaround Time during Pilot in 4-weekly periods except 8/3/04-26/3/04 (three-weekly period)

<table>
<thead>
<tr>
<th>No. of Days</th>
<th>No. (%) 22nd Sep - 17th Oct</th>
<th>*No. (%) 20th Oct - 14th Nov</th>
<th>No. (%) 17th Nov - 12th Dec</th>
<th>*No. (%) 15th Dec - 9th Jan 04</th>
<th>No. (%) 12th Jan - 6th Feb 04</th>
<th>No. (%) 9th Feb - 5th Mar 04</th>
<th>*No. (%) 8th - 26th Mar 04</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14(56%)</td>
<td>12(32%)</td>
<td>16(55%)</td>
<td>14(88%)</td>
<td>18(62%)</td>
<td>14(45%)</td>
<td>7(32%)</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>3 (8%)</td>
<td>2 (12%)</td>
<td>3(10%)</td>
<td>0</td>
<td>0</td>
<td>4(18%)</td>
</tr>
<tr>
<td>3</td>
<td>11(44%)</td>
<td>11(30%)</td>
<td>13(45%)</td>
<td>0</td>
<td>8(26%)</td>
<td>17(55%)</td>
<td>6(27%)</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>1 (3%)</td>
<td>2 (1%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5(23%)</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>27</strong></td>
<td><strong>37</strong></td>
<td><strong>29</strong></td>
<td><strong>16</strong></td>
<td><strong>29</strong></td>
<td><strong>31</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>

*Bank Holiday
+ No service from 24/12/03 to 5/1/04

- 7 needle breast biopsies were processed per week during pilot period
- Delays seen over weekend period and particularly over Bank Holiday weekend
Laboratory Turnaround Time:

<table>
<thead>
<tr>
<th>Time Period (Hours)</th>
<th>Number of Specimens</th>
<th>% of Total Specimens</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 8</td>
<td>20</td>
<td>&lt;1</td>
</tr>
<tr>
<td>&gt;= 8.5</td>
<td>38</td>
<td>2</td>
</tr>
<tr>
<td>&gt;= 9</td>
<td>54</td>
<td>2.5</td>
</tr>
<tr>
<td>&gt;= 9.5</td>
<td>1557</td>
<td>71</td>
</tr>
<tr>
<td>&gt;= 10</td>
<td>306</td>
<td>14</td>
</tr>
<tr>
<td>&gt;= 10.5</td>
<td>116</td>
<td>5</td>
</tr>
<tr>
<td>&gt;= 11</td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>&gt;= 11.5 and &lt;12</td>
<td>67</td>
<td>3</td>
</tr>
<tr>
<td>&gt;= 12</td>
<td>18</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

(<: Less than; >=: Greater than or equal; >: Greater than)

- A technical turnaround time i.e. from receipt of biopsy in laboratory to processing of sample to completion (ready for reading by pathologist) was achieved in 12 hours or less for all rapidly processed tissues during 6-month pilot period with one exception when there was a breakdown of the Microprocessor Instrument (19 samples affected)

- The majority of samples (71%) had a technical turnaround time of less than 10 hours

- Allowed the routine processing of samples to flow more freely during core day hours due to the rapidly processed tissues (a more technical demanding process) being done in the evenings

PATIENT IMPACT:
Number of patients who benefited from rapidly processed biopsies during the 6-month pilot period.

<table>
<thead>
<tr>
<th>No. 22/9/03-17/10/03</th>
<th>* No. 20/10/03-14/11/03</th>
<th>No. 17/11/03-12/12/03</th>
<th>* No. 15/12/03-9/1/04</th>
<th>No. 12/1/04-6/2/04</th>
<th>No. 9/2/04-5/3/04</th>
<th>* No. 8/3/04-26/3/04</th>
</tr>
</thead>
<tbody>
<tr>
<td>265</td>
<td>267</td>
<td>297</td>
<td>153</td>
<td>296</td>
<td>302</td>
<td>189</td>
</tr>
</tbody>
</table>

+ Christmas period - No service from 24/12/03 to 5/1/04
* 3-week period
Surveys: 6-month Pilot and Comparative Figures

Medical Scientists: Post 6-month Pilot Summary Report

Eight Medical Scientists who worked the sessions in the Histology Laboratory undertook this survey and the main points from the survey are as follow:

- 100% (63% strongly) of respondents are satisfied with present out-of-hours session times
- 88% are willing to work evening hours with 12% (one respondent) undecided
- 75% of staff are satisfied with frequency of sessions with 25% undecided (two respondents) dissatisfied
- 64% are willing to work more session hours with 12% (one respondent) undecided and 24% (two respondents) unwilling
- 100% (50% strongly) are satisfied with workload on sessions
- 100% (75% strongly) are satisfied to work evening hours for payment
- 100% are willing to continue working evening hours under the same condition
- Average number of sessions worked by each Medical Scientist over the 6-month period was 12 (range 7-14)
Overall 6-month Medical Scientist Satisfaction Rate

Percentage %

Questions

1. Satisfied with present out-of-hours session times
2. Willing to work evening hours
3. Willing to work more session hours
4. Satisfied with frequency of sessions
5. Satisfied with workload on sessions
6. Satisfied to work evening hours for payment
7. Willing to continue working evening hours under the same conditions
Comparative Medical Scientist Staff Satisfaction Survey Results

User Surveys:

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>3-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied with core hours</td>
<td>55</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Would be willing to start / finish earlier</td>
<td>89</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Would be willing to start / finish later</td>
<td>0</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Would like to consider more flexible working hours</td>
<td>89</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Would be willing to change core day hours</td>
<td>89</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Satisfied with present out-of-hours session times</td>
<td>89</td>
<td>89</td>
<td>100</td>
</tr>
<tr>
<td>Willing to work later than core day hours</td>
<td>78</td>
<td>33</td>
<td>NA</td>
</tr>
<tr>
<td>Willing to work evening hours</td>
<td>78</td>
<td>33</td>
<td>88</td>
</tr>
<tr>
<td>Willing to work more session hours</td>
<td>NA</td>
<td>NA</td>
<td>64</td>
</tr>
<tr>
<td>Satisfied with frequency of sessions</td>
<td>NA</td>
<td>67</td>
<td>75</td>
</tr>
<tr>
<td>Satisfied to work evening hours for payment</td>
<td>NA</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Willing to work evening hours for time in lieu</td>
<td>NA</td>
<td>0</td>
<td>NA</td>
</tr>
<tr>
<td>Satisfied with workload on sessions</td>
<td>NA</td>
<td>NA</td>
<td>100</td>
</tr>
</tbody>
</table>

Breast Surgeons: Post 6-month Pilot Summary Report

3 Consultant Breast Surgeons who support this service undertook this survey and the main points from the survey are as follow:

- There is 100% agreement that the current operating hours of the Histology Laboratory are convenient for user
- 100% agree that later opening of laboratory benefits patient service
These benefits are broken down as follows:

- 100% agree that patient turnaround time is decreased.
- 67% strongly agree with 33% (one respondent) undecided that patient numbers treated are increased.
- There is 100% agreement that quality of service to patient is improved.
- 100% agree that patient receives a more timely service.
- 100% agree that access of the service to patient is increased.
- 100% are satisfied for the present later laboratory working hours to continue.
Overall 6-month User Satisfaction Rate

* Question 2 omitted due to ambiguity

Questions

1. Current operating hours of laboratory are convenient for user
2. Later working time of laboratory benefits patient service
3. Later working time of laboratory decreases patient turnaround time
4. Later working time of laboratory increases number of patients treated
5. Later working time of laboratory improves quality of service to patient
6. Later working time of laboratory offers a more timely service to patient
7. Later working time of laboratory increases access of service to patient
8. I would be satisfied for the present later working hours to continue
Comparative User (Breast Surgeon) Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current opening hours are convenient for user</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Later working hours are required</td>
<td>100</td>
<td>NA</td>
</tr>
<tr>
<td>Benefit patient service</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Decrease turnaround time</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Increase number of patients treated</td>
<td>75</td>
<td>67</td>
</tr>
<tr>
<td>Improve quality of service</td>
<td>100</td>
<td>130</td>
</tr>
<tr>
<td>Offer more timely service</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Increase access of service to patient</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Surgeons who perform Endoscopy: Post 6-month Pilot Summary Report

4 Consultant Surgeons who support this service undertook this survey and the main points from the survey are as follows:

- There is 100% agreement that the current operating hours of the Histology Laboratory are convenient for user.
- 100% agree (75% strongly) that later opening of laboratory benefits patient service.
- There is 100% (50% strongly) agreement that quality of service to patient is improved.
- 100% agree (50% strongly) that patient receives a more timely service.
- 100% agree (50% strongly) that access of the service to patient is increased.
- 100% (50% strongly) are satisfied for the present later laboratory working hours to continue.
Overall 6-month User (Endoscopy) Satisfaction Rate

Questions

1. Current operating hours of laboratory are convenient for user
2. Later working time of laboratory benefits patient service
3. Later working time of laboratory decreases patient turnaround time
4. Later working time of laboratory increases number of patients treated
5. Later working time of laboratory improves quality of service to patient
6. Later working time of laboratory offers a more timely service to patient
7. Later working time of laboratory increases access of service to patient
8. I would be satisfied for the present later working hours to continue

* Question 2 omitted due to ambiguity
Pilot Project 6: Haematology Department St James's Hospital

LABORATORY SERVICE IMPACT:

- Early morning Laboratory Result Turnaround Time Approx= 15 minutes (Range 13-26 minutes)
- Average number of samples tested on early morning start = 28
- Average number of samples per day = 90
- 31% of daily workload performed on early morning start

PATIENT IMPACT:

- Number of patient results on early morning per day = 28
- Average number of patients per month pre-pilot period (May 03-Oct 03) = 2486
- Average number of patients per month 6-month pilot period (Nov 03-Apr 04) ~ 2260

6 appointments every 15 minutes and patient leaves. Can be contacted immediately if necessary.

Improved quality of care to patient.
Statistics for number of samples tested and turnaround time in the laboratory of the early morning start in the Stat Lab (Coagulation) in SJH

Number of samples & lab turnaround

- Number of samples tested pre 9:30am
- Total number of samples
- % of samples per day
Number of INRs tested per month May 03 to Apr 04
Surveys: Post 6-month Pilot and Comparative Figures

Medical Scientist Post 6-month Pilot Summary Report

Eleven Medical Scientists (including 2 Senior Medical Scientists) undertook this survey and the main points from the survey are as follow:

- 40% of staff are satisfied with pilot core day hours with 50% dissatisfied and 10% (one respondent) remaining undecided
- 64% (36% strongly) are willing to start work earlier with 18% (two respondents) undecided and 18% unwilling
- 82% (55% strongly) would be willing to start work earlier and finish work earlier with 18% (2 respondents) unwilling
- 73% (27% strongly) would be willing to consider a change in core day hours with 9% (one respondent) undecided and 18% disagreeing
- 100% of staff (84% strongly) would be willing to consider more flexible working hours
- 73% consider the earlier laboratory start beneficial to the Warfarin Out-patient Clinic with 9% (one respondent) undecided and 18% disagreeing
- 70% consider the earlier laboratory start beneficial to the laboratory service with 10% (one respondent) undecided and 20% disagreeing
- 55% are willing to continue working the early hours under the same conditions with 27% undecided and 18% disagreeing. Reasons indicated for disagreeing by one respondent was preference for shorter day than longer hours and session payment and by the other respondent who felt it was not required and interfered with on-call and sessions

*One non-respondent
Overall 6-month Medical Scientist Satisfaction Rate

Questions

1. I am satisfied with pilot core day hours
2. I am willing to commence work earlier
3. I would be willing to start work earlier and finish work earlier
4. I would be willing to consider a change in my core working hours
5. I would be willing to consider more flexible working hours
6. I consider the earlier laboratory start beneficial to the Warfarin Out-patient Service
7. I consider the earlier laboratory start beneficial to the laboratory service
8. I am willing to continue working the earlier hours under the same conditions
### Comparative Medical Scientist Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>3-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfied with core hours</td>
<td>81</td>
<td>61</td>
<td>40</td>
</tr>
<tr>
<td>Would be willing to commence work earlier</td>
<td>78</td>
<td>69</td>
<td>64</td>
</tr>
<tr>
<td>Would be willing to start / finish early</td>
<td>71</td>
<td>75</td>
<td>82</td>
</tr>
<tr>
<td>Would be willing to start / finish later</td>
<td>22</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Willing to work extra hours for payment</td>
<td>NA</td>
<td>84</td>
<td>NA</td>
</tr>
<tr>
<td>Willing to work extra hours for current paym</td>
<td>NA</td>
<td>46</td>
<td>NA</td>
</tr>
<tr>
<td>Willing to consider flexible working hours</td>
<td>100</td>
<td>84</td>
<td>100</td>
</tr>
<tr>
<td>Willing to change core hours</td>
<td>66</td>
<td>46</td>
<td>73</td>
</tr>
</tbody>
</table>

### User Surveys: Post 6-month Pilot Summary Report

Six Medical and Nursing Staff who support the clinic undertook this survey and the main points from the survey are as follow:

- 83% agree with one respondent undecided (17%) that operating hours of the Haematology STAT Laboratory during pilot are convenient for user and that earlier laboratory opening hours are required

- Though 83% strongly agree and 17% (one respondent) remains undecided that the earlier opening of the laboratory benefits patient service, there is mixed views on those benefits as follows:
  - 50% agree and 50% disagree that patient turnaround time decreases
  - 65% disagree, 17% agree and 17% remain undecided that patient numbers treated are increased
  - 65% agree (3 of 4 respondents strongly) and 35% (two respondents) disagree that quality of service to patient is improved
  - There is 65% agreement (3 of 4 respondents strongly) with 35% undecided that patient receives a more timely service
  - 65% agree and 35% disagree that access of the service to patient is increased
65% (3 of 4 respondents strongly) agree and 35% remain undecided that they would like this earlier laboratory service to be continued. One of the two undecided respondents felt that as clinic commences at eight, once blood is taken patient can go home and does not have to await results. (Postal Clinic)

Overall 6-month User Satisfaction Rate

Questions

1. Operating hours of laboratory during pilot are convenient for user
2. Earlier laboratory opening hours are required
3. Earlier opening time of laboratory benefits patient service
4. Earlier opening time of laboratory decreases patient turnaround time
5. Earlier opening time of laboratory increases number of patients treated
6. Earlier opening time of laboratory improves quality of service to patient
7. Earlier opening time of laboratory offers a more timely service to patient
8. Earlier opening time of laboratory increases access of service to patient
9. I would like earlier laboratory opening hours to continue
Comparative User Satisfaction Survey Results

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-pilot Satisfaction (%)</th>
<th>3-month Pilot Satisfaction (%)</th>
<th>6-month Pilot Satisfaction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current opening hours are convenient for user</td>
<td>0</td>
<td>83</td>
<td>83</td>
</tr>
<tr>
<td>Earlier opening hours are required</td>
<td>100</td>
<td>NA</td>
<td>83</td>
</tr>
<tr>
<td>Benefit patient service</td>
<td>100</td>
<td>83</td>
<td>83</td>
</tr>
<tr>
<td>Decrease turnaround time</td>
<td>100</td>
<td>83</td>
<td>50</td>
</tr>
<tr>
<td>Increase number of patients treated</td>
<td>20</td>
<td>35</td>
<td>17</td>
</tr>
<tr>
<td>Improve quality of service</td>
<td>100</td>
<td>83</td>
<td>65</td>
</tr>
<tr>
<td>Offer more timely service</td>
<td>100</td>
<td>83</td>
<td>65</td>
</tr>
<tr>
<td>Increase access of service to patient</td>
<td>60</td>
<td>83</td>
<td>65</td>
</tr>
</tbody>
</table>
Pilot Project 7: Pathology Department Tralee General Hospital

LABORATORY SERVICE IMPACT:

Pre and Post Pilot Turnaround Times for Biochemistry and Haematology both Routine and On-call: For Haematology the performance matrix was the time taken for an FBC. For Biochemistry the performance matrix is the time taken for tests performed on the modular (renal profile, cardiac enzymes, etc).

DELIVERY:
Delivery time/Total time \times 100

LAB START:
Skeleton request time-delivery time

ADMIN:
Order entry time - skeleton request time

ANALYSIS:
Resulted - skeleton request &
Order entry time - skeleton request time

AUTH:
Authorisation time - Resulted time

**Skeleton request** - attaching of specific tests to a specific number

**Order entry** - attaching demographics to specific number

**Resulted** - when the analysing instrument transferred result to patient demographics

**Authorised** - when Medical Scientist approved test result and result is available on the ward

The following times were measured in calculation of Result Turnaround Time

**Delivery Time (pre-analytical):**
Difference between time blood was taken and time it was delivered to the laboratory.

**Laboratory Start Time:**
Difference between time blood sample was delivered and Medical Scientist began processing it.

**Administration Time** (combination of pre-analytical and analytical)

Difference in time between having the patient's sample skeleton requested and having full demographic entry. The procedure was that laboratory staff skeleton request a patient's tests requests (this involved assigning a number of test requests to the number which had been applied to the patient's sample and form). The form was then transferred to the office (urgent requests were handed to clerical staff) and clerical staff entered demographics to the aforementioned number which had been assigned to the patient's form and sample (Order Entry). Taken together, the instruments could not transfer results until the patient's demographics were entered.
**Analysis Time (analytical):**

Difference between time results were transferred to the computer and time demographics were entered.

**Authorisation Time (analytical):**

Difference between time patient's results are clinically approved and thus available to the ward, and time result was attached to patient demographics.

The Pre-pilot sample refers to a subset of patients attending the A&E and MAU services at Tralee General Hospital during an 8-week time period from 6th October 2003 and 28th November 2003. The sample represented 45% of patients going through A&E and 70% of patients going through MAU. Tables overleaf show the % breakdown in the processing chain (Sample taken to result released) for Haematology and Biochemistry disciplines during routine core hours and on-call.
Haematology Routine Pre Pilot
N=230 (50), 120 Male (56), 110 Female (47)

Haematology On-Call Pre Pilot
N=140 (49), 76 Male (49), 63 Female (49)
Biochemistry Routine Pre Pilot
N=290 (48), 147 Male (54), 143 Female (46)

TOTAL

17% 37% 22% 6% 18%

A & E

17% 37% 22% 6% 18%

MAU

25% 37% 23% 5% 10%

Biochemistry On-Call Pre Pilot
N=180 (52), 86 Male (54), 94 Female (50)

1% 9% 26% 54%
Post pilot sample refers to a subset of patients attending the A&E and MAU services at Tralee General Hospital during the 7-week time period from 6th February 2004 and 26th March 2004. The sample represented 40% of patients coming through A&E and 60% of patients coming through MAU, which received a service from the pathology laboratory. Tables below show the comparative figures for pre and post pilot % breakdown in the processing chain (Sample taken to result released)

**Haematology Routine**

N=230 (50), 120 Male (56), 110 Female (47)
N=160 (48), 90 Male (56), 70 Female (47)

<table>
<thead>
<tr>
<th></th>
<th>A &amp; E</th>
<th>MAU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-pilot</td>
<td>Pilot</td>
</tr>
<tr>
<td>Delivery</td>
<td>21%</td>
<td>20%</td>
</tr>
<tr>
<td>Lab Start</td>
<td>16%</td>
<td>2%</td>
</tr>
<tr>
<td>Admin</td>
<td>43%</td>
<td>25%</td>
</tr>
<tr>
<td>Analysis</td>
<td>8%</td>
<td>35%</td>
</tr>
<tr>
<td>Auth</td>
<td>12%</td>
<td>18%</td>
</tr>
<tr>
<td>Time (minutes)</td>
<td>123</td>
<td>86</td>
</tr>
<tr>
<td>Range</td>
<td>47-267</td>
<td>12-355</td>
</tr>
<tr>
<td>Coag</td>
<td>76</td>
<td>53</td>
</tr>
<tr>
<td>Referral</td>
<td>17894</td>
<td>13994</td>
</tr>
</tbody>
</table>

* Coag = Coagulation Test Result Turnaround Time
**Referral = Referral Test Result Turnaround Time in Haematology (99% are B12, Folate, Ferritin)
Biochemistry Routine

N=290 (48), 147 Male (54), 143 Female (46)
N=179 (51), 100 Male (54), 79 Female (49)

<table>
<thead>
<tr>
<th></th>
<th>A &amp; E</th>
<th>MAU</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-pilot</td>
<td>Pilot</td>
</tr>
<tr>
<td></td>
<td>Pre-pilot</td>
<td>Pilot</td>
</tr>
<tr>
<td>Delivery</td>
<td>18%</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>17%</td>
<td>22%</td>
</tr>
<tr>
<td>Lab Start</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Admin</td>
<td>37%</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>Analysis</td>
<td>17%</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>48%</td>
<td>47%</td>
</tr>
<tr>
<td>Auth</td>
<td>22%</td>
<td>20%</td>
</tr>
<tr>
<td>Time (minutes)</td>
<td>163</td>
<td>282</td>
</tr>
<tr>
<td></td>
<td>120</td>
<td>131</td>
</tr>
<tr>
<td>Range</td>
<td>52-1187</td>
<td>113-1392</td>
</tr>
<tr>
<td></td>
<td>45-379</td>
<td>54-301</td>
</tr>
<tr>
<td>Elec</td>
<td>3456</td>
<td>4351</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>3193</td>
</tr>
<tr>
<td>Architect</td>
<td>3897</td>
<td>4234</td>
</tr>
<tr>
<td></td>
<td>1947</td>
<td>815</td>
</tr>
<tr>
<td>Referral</td>
<td>6345</td>
<td>7654</td>
</tr>
<tr>
<td></td>
<td>4624</td>
<td>5467</td>
</tr>
</tbody>
</table>

*Elecsys = Result Turnaround Time for tests performed on Elecsys (Troponins, IgE, Testosterone, Progesterone)
**Architect = Result Turnaround Time for tests performed on Architect (Thyroid Function Tests, PSA, Female Hormones)
***Ref = Referral Test Result Turnaround Time in Biochemistry (95% are ANF, ANCA and related tests)

Haematology On-call

N=140 (49), 76 Male (49), 64 Female (49)
N=120 (51), 69 Male (52), 51 Female (49)

<table>
<thead>
<tr>
<th></th>
<th>Pre-pilot</th>
<th>Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>60%</td>
<td>53%</td>
</tr>
<tr>
<td>Delivery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lab Start</td>
<td>18%</td>
<td>7%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admin</td>
<td>1%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Analysis</td>
<td>9%</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auth</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Mean Time (minutes)</td>
<td>60</td>
<td>52</td>
</tr>
<tr>
<td>Time Range</td>
<td>13-278</td>
<td>13-275</td>
</tr>
</tbody>
</table>
Biochemistry On-call

N=180 (52), 86 Male (54), 94 Female (50)
N=140 (51), 79 Male (52), 61 Female (49)

<table>
<thead>
<tr>
<th></th>
<th>Pre-pilot</th>
<th>Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery</td>
<td>54%</td>
<td>47%</td>
</tr>
<tr>
<td>Lab Start</td>
<td>9%</td>
<td>4%</td>
</tr>
<tr>
<td>Admin</td>
<td>1%</td>
<td>9%</td>
</tr>
<tr>
<td>Analysis</td>
<td>26%</td>
<td>30%</td>
</tr>
<tr>
<td>Auth</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Mean Time (minutes)</td>
<td>106</td>
<td>74</td>
</tr>
<tr>
<td>Time Range</td>
<td>38-343</td>
<td>19-278</td>
</tr>
</tbody>
</table>

Process Change –Central Specimen Reception and Single Request Form

The only way of implementing the agreed time windows was in an automated fashion, through incorporation of test requesting into the order entry function, i.e. ordering the tests as one entered the patient’s demographics. This required the negation of the skeleton request step.

OLD SYSTEM

LABELLING

SPINNING

SKELETON REQUESTING

ORDER ENTRY

ANALYSIS

RESULTING

AUTHORISING

NEW SYSTEM

LABELLING

Central

SPINNING

SKELETON REQUESTING

ORDER ENTRY (Single form)

ANALYSIS

RESULTING

AUTHORISING

The transfer of test requesting to the clerical staff required a significant increase in their workload, which was not possible under the existing system. It was decided to pilot a single form for Microbiology, Haematology and Biochemistry. This would generate a theoretical reduction in work volume of about 50%, which was hoped to permit the aforementioned changes in the order entry function. These changes also required the piloting of a Central Specimen Reception.
Re-audit of Data following 7-week Pilot  
The following sample referred to a subset of patients attending the A&E and MAU services at Tralee General Hospital during a 7-week time period from 6th February 2004 and 26th March 2004. The sample represented 40% of patients coming through A&E and 60% of patients coming through MAU, which received a service from the pathology laboratory.

OVERALL PATHOLOGY ACTIVITY

<table>
<thead>
<tr>
<th>TOTAL ACTIVITY</th>
<th>SPECIMEN</th>
<th>BIOCHEMISTRY</th>
<th>% Change</th>
<th>HAEMATOLOGY</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PRE-PILOT</td>
<td>PILOT</td>
<td></td>
<td>PRE-PILOT</td>
<td>PILOT</td>
</tr>
<tr>
<td>TOTAL ACTIVITY</td>
<td></td>
<td>21299</td>
<td>5%</td>
<td>12386</td>
<td>8%</td>
</tr>
<tr>
<td>DAILY ACTIVITY</td>
<td>% OF WEEKLY WORK</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Monday</td>
<td>16%</td>
<td></td>
<td>17%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Tuesday</td>
<td>28%</td>
<td></td>
<td>24%</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>Wednesday</td>
<td>23%</td>
<td></td>
<td>19%</td>
<td>3%</td>
</tr>
<tr>
<td></td>
<td>Thursday</td>
<td>20%</td>
<td></td>
<td>22%</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>Friday</td>
<td>12%</td>
<td></td>
<td>17%</td>
<td>1%</td>
</tr>
<tr>
<td>ON-CALL ACTIVITY</td>
<td>SPECIMEN NO.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Saturday</td>
<td>91</td>
<td></td>
<td>55</td>
<td>67%</td>
</tr>
<tr>
<td></td>
<td>Sunday</td>
<td>95</td>
<td></td>
<td>64</td>
<td>46%</td>
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</tbody>
</table>

OVERALL A&E ACTIVITY

<table>
<thead>
<tr>
<th>AE attendances</th>
<th>PRE-PILOT</th>
<th>PILOT</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>9am - 5pm</td>
<td>2233</td>
<td>2035</td>
<td>-9%</td>
</tr>
<tr>
<td>5pm - 9am</td>
<td>1630</td>
<td>1519</td>
<td>-7%</td>
</tr>
</tbody>
</table>
**PATIENT/SERVICE IMPACT:**

**Audit of Repeat Tests Pre-pilot to establish Protocols**

The Pre-pilot sample refers to a subset of patients attending the A&E and MAU services at Tralee General Hospital during an 8-week time period from 6th October 2003 and 28th November 2003. The sample represented 45% of patients going through A&E and 70% of patients going through MAU. The following constituted duplications (repeat of a test request on the same patient within one week of their visit (before or after)) to A/E and MAU.

<table>
<thead>
<tr>
<th>TEST NAME</th>
<th>A&amp;E</th>
<th>MAU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random Lipid Profile</td>
<td>41% (x1)</td>
<td>20% (x1)</td>
</tr>
<tr>
<td></td>
<td>2% (x2)</td>
<td>0% (x2)</td>
</tr>
<tr>
<td>Thyroid Function Tests</td>
<td>45% (x1)</td>
<td>30% (x1)</td>
</tr>
<tr>
<td></td>
<td>20% (x2)</td>
<td>0% (x2)</td>
</tr>
<tr>
<td>Prostate Specific Antigen</td>
<td>14% (x1)</td>
<td>17% (x1)</td>
</tr>
<tr>
<td></td>
<td>13% (x2)</td>
<td>12% (x2)</td>
</tr>
<tr>
<td>Autoimmune screen</td>
<td>55% (x1)</td>
<td>67% (x1)</td>
</tr>
<tr>
<td></td>
<td>24% (x2)</td>
<td>34% (x2)</td>
</tr>
<tr>
<td>B12, etc.</td>
<td>1% (x1)</td>
<td>16% (x1)</td>
</tr>
<tr>
<td>Troponin T</td>
<td>33% (x1)</td>
<td>44% (x1)</td>
</tr>
<tr>
<td></td>
<td>33% (x2)</td>
<td>0% (x2)</td>
</tr>
</tbody>
</table>

Following from this data, indicating high levels of duplication for certain tests, it was decided to determine demand protocols for these tests. The strategy employed was to determine a clinically safe time window to request these tests i.e. a time window whereby a repeat was not required.

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Clinically Safe Time Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thyroid Function Tests</td>
<td>1 month</td>
</tr>
<tr>
<td>Autoimmune profile</td>
<td>3 months</td>
</tr>
<tr>
<td>PSA</td>
<td>3 months</td>
</tr>
<tr>
<td>Random Cholesterol</td>
<td>3 months</td>
</tr>
<tr>
<td>B12, Folate, Ferritin (excluding Haemochromatosis)</td>
<td>3 months</td>
</tr>
<tr>
<td>Tumour Markers</td>
<td>3 months: Requesting clinician must specify the specific tumour markers required.</td>
</tr>
<tr>
<td>Allergy Screens</td>
<td>12 months</td>
</tr>
<tr>
<td>Coeliac Screen</td>
<td>12 months</td>
</tr>
<tr>
<td>Uric acid</td>
<td>3 months</td>
</tr>
</tbody>
</table>
In relation to B12, Folate, and Ferritin, whilst it did not constitute a major repeat from the 'full' list, the other tests identified were primarily from medical patients and impacted on the Biochemistry Laboratory. It was decided to include the haematinsics to include the Haematology Laboratory and also referred tests, i.e. tests presently referred to another hospital for analysis. In addition it could be assessed the impact of the demand management protocols on tests referred (B12, Folate, Ferritin).

The following tests were also included:

- Tumour Markers as these were tests impacting on surgical patients.
- Uric acid to assess the impact of protocols on patients from Obstetrics/Gynaecology
- Allergy screens and coeliac screens as they were referred to external laboratories for analysis and were an expensive test. Although not traditionally referred from A&E and MAU, there was a qualitative view that General Practitioners significantly repeated them.
- As there will always be exceptions to every rule, it was not the intention of the laboratory to dictate to the users when and when not they could request tests – this was merely seen as an attempt to reduce administrative repeats.

Repeat Tests Post Pilot (7 Weeks)

The following constituted the number of repeat tests identified during the 7-week pilot period and breakdown of their costs. This data should be considered an estimation due to the fact that upon receiving a line of text indicating a previous request, the default to continue went to yes (or return). During data input, a certain % of repeats could have been missed.

Breakdown of Repeat Tests and Costs

<table>
<thead>
<tr>
<th>Test</th>
<th>Price/patient</th>
<th>Number of Repeats</th>
<th>Cost (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C125</td>
<td>€8.74</td>
<td>15</td>
<td>131.08</td>
</tr>
<tr>
<td>C199</td>
<td>€9.73</td>
<td>17</td>
<td>165.38</td>
</tr>
<tr>
<td>CEA</td>
<td>€7.55</td>
<td>19</td>
<td>143.54</td>
</tr>
<tr>
<td>AFP</td>
<td>€5.06</td>
<td>17</td>
<td>85.98</td>
</tr>
<tr>
<td>CA 153</td>
<td>€8.74</td>
<td>5</td>
<td>43.69</td>
</tr>
<tr>
<td>CHOLESTEROL</td>
<td>€0.19</td>
<td>130</td>
<td>24.70</td>
</tr>
<tr>
<td>TRIGLYCERIDE</td>
<td>€0.57</td>
<td>130</td>
<td>74.10</td>
</tr>
<tr>
<td>PSA</td>
<td>€0.76</td>
<td>190</td>
<td>144.40</td>
</tr>
<tr>
<td>FT4</td>
<td>€1.82</td>
<td>467</td>
<td>849.94</td>
</tr>
<tr>
<td>TSH</td>
<td>€1.82</td>
<td>467</td>
<td>849.94</td>
</tr>
<tr>
<td>BFF</td>
<td>€6.00</td>
<td>230</td>
<td>1380</td>
</tr>
<tr>
<td>ANF</td>
<td>€26.66</td>
<td>56</td>
<td>1492.96</td>
</tr>
<tr>
<td>ALLERGY SCREENS</td>
<td>€55.31</td>
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<td>719.02</td>
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<td>COELIAC SCREENS</td>
<td>€16.07</td>
<td>15</td>
<td>241.05</td>
</tr>
<tr>
<td>TOTAL (Pilot period)</td>
<td></td>
<td></td>
<td>€6345.78</td>
</tr>
<tr>
<td>Forecast for year</td>
<td></td>
<td></td>
<td>€47,140.08</td>
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</table>
FINANCIAL IMPACT of DEMAND PROTOCOLS:

<table>
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<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demand Protocols Pilot</td>
<td>€6,345.78</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. Demand Protocols</td>
<td>€47,140.08</td>
<td>€51,854</td>
<td>€57,039</td>
<td>€62,743</td>
<td>€69,017</td>
</tr>
</tbody>
</table>

N.B. The above figures do not include packaging and transport costs i.e. of samples sent to referral centres and labour costs i.e. scientific and clerical wages

1. Represents the capital saving generated as a result of the initial pilot project period (7 weeks).

2. Represents the projected annual saving with expansion of the demand protocol exercise to all laboratory tests. This includes a 10% cumulative increase in savings generated over the first 6 years. To place this into context, during the initial audit phase of the pilot project a total of 256 Thyroid profiles were ordered on patients going through A&E and MAU over a period of 39 routine days (annual extrapolation of 2396) and 41 thyroid profiles on patients going through A&E and MAU over a period of 53 on-call days (annual extrapolation of 282). This gives a total amount of 2678 and a cost of €9748. Employing a simple Thyroid Stimulating Hormone (TSH) screening strategy whereby only abnormal TSH's (2% of 2003 figures) resulted in the estimation of FreeT4 would generate an annual saving of €4,777 on A&E and MAU patients alone.
Breakdown of Test Costs

1. **CA 125**: Tumour marker used in differentiation of, and, monitoring treatment of Ovarian cancer. The kit has 100 tests (of this 12 will be used for calibration and 12 will be used for controls). This leaves 76 patient tests/kit (€7.176/patient).
   For simplicity purposes let's assume we run a set of controls (n=3) for every two patients and that we get 20 reactions per vial, then this equals €2.56 per reaction or €1.28 per patient.
   For simplicity purposes let's assume we run only one calibration per reagent pack and that each vial of calibrator will calibrate 5 reagent packs, then this equals €0.2825 per patient.
   Total CA 125 laboratory consumables = €8.7385 per patient.

2. **C19-9**: Tumour marker used as a diagnostic aid, and, monitoring treatment of pancreatic adenocarcinoma. The kit has 400 tests (of this 24 will be used for calibration and assuming 5 patients per day and 3 controls per day, the kit will be on board for 47 days). This leaves 235 patient tests/kit (€7.27/patient).
   For simplicity purposes let's assign a control price of €0.05 per patient as this assay utilises generic ligand controls. For simplicity purposes let's assume we run two calibrations per reagent pack and that each vial of calibrator will calibrate 2 reagent packs, then this equals €0.2284 per patient.
   Total C19-9 laboratory consumables = €9.7284 per patient.

3. **CEA**: (Carcinoembryonic Antigen)- Tumour marker for monitoring treatment of patients with diagnosed colorectal cancers. Also useful in other gastrointestinal malignancies and as "general purpose" marker for adenoocarcinomas where distant metastases are present.
   The kit has 400 tests (of this 24 will be used for calibration and assuming 5 patients per day and 3 controls per day, the kit will be on board for 47 days). This leaves 235 patient tests/kit (€9.45/patient).
   For simplicity purposes let's assign a control price of 0.05 per patient as this assay utilises generic ligand controls. For simplicity purposes let's assume we run two calibrations per reagent pack and that each vial of calibrator will calibrate 2 reagent packs, then this equals €0.2284 per patient.
   Total CEA laboratory consumables = €7.55 per patient.

4. **AFP (Alpha-fetoprotein)**: Tumour marker used as a prognostic marker in non-seminomatous germ cell tumours, and, a diagnostic aid in Hepato-cellular carcinoma (liver) and Hepatoblastoma (in children). The kit has 400 tests (of this 24 will be used for calibration and assuming 5 patients per day and 3 controls per day, the kit will be on board for 47 days). This leaves 235 patient tests/kit (€4.78/patient).
   For simplicity purposes let's assign a control price of 0.05 per patient as this assay utilises generic ligand controls. For simplicity purposes let's assume we run two calibrations per reagent pack and that each vial of calibrator will calibrate 2 reagent packs, then this equals €0.2284 per patient.
   Total AFP laboratory consumables = €5.06 per patient.

5. **CA 15-3**: Tumour marker used in the pre-clinical detection of a re-occurrence of breast cancer, and, monitoring treatment of patients with advanced breast cancer.
   The kit has 100 tests (of this 12 will be used for calibration and 12 will be used for controls). This leaves 76 patient tests/kit (€7.176/patient). For simplicity purposes let's assume we run a set of controls (n=3) for every two patients and that we get 20 reactions per vial, then this equals €2.56 per reaction or €1.28 per patient. For simplicity purposes let's assume we run only one calibration per reagent pack and that each vial of calibrator will calibrate 5 reagent packs, then this equals €0.2825 per patient.
   Total CA 15-3 laboratory consumable = €8.7385 per patient.
6. **PSA: Prostatic Specific Antigen**- Tumour marker used as an aid in the diagnosis of prostate cancer, and, monitoring treatment of these patients\(^1\).

   The kit has 400 tests (of this 24 will be used for calibration and assuming 40 patients per day and 3 controls per day, the kit will be on board for 8 days). This leaves 344 patient tests/kit (€0.4865/patient). For simplicity purposes let's assign a control price of €0.05 per patient as this assay utilises generic ligand controls. For simplicity purposes let's assume we run two calibrations per reagent pack and that each vial of calibrator will calibrate 2 reagent packs, then this equals €0.2284 per patient. Total PSA laboratory consumables = €0.7649 per patient.

7. **CHOLESTEROL**: Part of lipid profile

   The kit has 3660 tests. Assuming a two-point calibration once per day, 12 controls per day and 200 patients per day, then the kit will be on board for 17 days. This leaves 3400 patient tests/kit (€0.09/patient). For simplicity purposes let's assign a control price of €0.05 per patient as this assay utilises generic ligand controls and an equal figure for the calibrator as it uses CFAS calibrator €0.05. Total CHOLESTEROL laboratory consumables = €0.19 per patient.

8. **TRIGLYCERIDE**: Part of lipid profile

   The kit has 1458 tests. Assuming a two-point calibration once per day, 12 controls per day and 200 patients per day, then the kit will be on board for 7 days. This leaves 1400 patient tests/kit (€0.47/patient). For simplicity purposes let's assign a control price of €0.05 per patient as this assay utilises generic ligand controls and an equal figure for the calibrator as it uses CFAS calibrator €0.05. Total TRIGLYCERIDE laboratory consumables = €0.57 per patient.

9. **FT4: Free T4**: Part of Thyroid Function Tests

   The kit has 2000 tests (of this 60 will be used for calibration and assuming 200 patients per day and 3 controls per day, the kit will be on board for 9 days). This leaves 1827 patient tests/kit (€1.72/patient). For simplicity purposes let's assign a control price of €0.05 per patient as this assay utilises generic ligand controls. For simplicity purposes let's assume we run two calibrations per reagent pack and that each vial of calibrator will calibrate 2 reagent packs, then this equals €0.2284 per patient. Total FT4 laboratory consumables = €1.82 per patient.

10. **TSH: Thyroid Stimulating Hormone**: Part of Thyroid Function Tests

    The kit has 2000 tests (of this 60 will be used for calibration and assuming 200 patients per day and 3 controls per day, the kit will be on board for 9 days). This leaves 1827 patient tests/kit (€1.72/patient). For simplicity purposes let's assign a control price of €0.05 per patient as this assay utilises generic ligand controls. For simplicity purposes let's assume we run two calibrations per reagent pack and that each vial of calibrator will calibrate 2 reagent packs, then this equals €0.2284 per patient. Total TSH laboratory consumables = €1.82 per patient.

11. **B12/FOLATE/FERRITIN**:

    Price supplied by Cork University Hospital = €6.00 per patient for the three tests.

12. **COELIAC SCREENS**:

    Price supplied = €582.81 (alpha-gliad in for 96 tests) and €702 (tissue transglutaminase for 96 tests). Taking into account two calibrations per 96 tests and 2 controls per run, this leaves a maximum of 80 patients per a 96 well plate. This equates to €7.29 for alpha-gliad in and €8.78 for tissue transglutaminase. Total cost = €16.07 per patient.

Chapter 9

Terms of Reference and Status Report
### Pilot Project 1: Pathology Department Wexford General Hospital

<table>
<thead>
<tr>
<th>Background</th>
<th>1981 Emergency/On-call System Agreement had placed a Quota of 60 calls per week at full payment rate with calls above 60 paid at a reduced rate. The nature of multidisciplinary On-call, worked by staff, was also an issue, which had not been recognised. Staff were exposed to 24-hour working periods at least once a week in contravention of the organisation of the Working Time Act 1997. There was disruption to the core day workload as the laboratory was down a Medical Scientist in a particular discipline due to compensatory day off for covering on-call.</th>
</tr>
</thead>
</table>
| Goal | • Establish baseline figures and define the key performance indicators  
• Role out pilot and evaluate the key performance indicators |
| Deliverables | • Night core hours for staff between 23.00-8.00  
• Decreased turnaround time of results between 23.00-8.00  
• Earlier laboratory service to patients of the Oncology Day Ward and Day Care Unit (DCU) |
| Time/Cost | • Pilot will have a 6-month duration  
• Estimated cost (Present) €96,000 + (new) €62,000 = €158,000  
• Allocated funding €60,000 |
| Milestones | • 7 weeks into pilot following full rotation of staff through night core hours  
• 14 weeks into pilot full rotation of job-sharers through night core hours  
• 14 weeks into pilot an evaluation of financial impact (for staff + hospital) |
| Quality | • Improved care to patient-User Satisfaction Survey  
• Improved out-of-hours work practice-Staff Satisfaction |
| Team | Michael Kehoe-Financial Manager; Geraldine Crean-Senior Medical Scientist-in-Charge and Kathryn Hanrick-Medical Scientist. Input from the following hospital personnel: Mary Nugent CNM2-Oncology and Mary Geoghegan CNM2-Surgical Day Unit. |
| Scope | • Goals/Deliverables as set out above  
• See Task Schedule and Risk Analysis/Contingency |
| Outline Plan | • Design and Planning –See Task Schedule and Risk/Contingency Analysis-Start Date 14th May 2003  
• Implementation of pilot –Start Date 1st September 2003  
• Track/monitor during pilot-Finish Date 14th March 2004  
• Evaluate on completion of pilot |
# PRE-PILOT TASK SCHEDULE

**Project Name:** Pathology Department Wexford General Hospital  
**Project ID:** WEX LAB

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Schedule early roster</td>
<td>Completed 6(^{th}) June</td>
<td>10</td>
<td>• Core staff to cover 5 days</td>
<td>Kathryn</td>
</tr>
<tr>
<td>2. Schedule core night hours/on-call roster (s)</td>
<td>Completed 6(^{th}) June</td>
<td>10</td>
<td>• Core of 7 • Core of 6</td>
<td>Kathryn</td>
</tr>
<tr>
<td>3. Schedule core day hours</td>
<td>Completed 6(^{th}) June</td>
<td>10</td>
<td>Increased staff number (7)</td>
<td>Kathryn</td>
</tr>
<tr>
<td>4. Outline Night Duties</td>
<td>Completed 6(^{th}) June</td>
<td>10</td>
<td></td>
<td>Geraldine</td>
</tr>
<tr>
<td>5. Pilot Pre-staff Satisfaction</td>
<td>Returned 23rd May</td>
<td>10</td>
<td>• Need for change • Flexibility • Safer work practice</td>
<td>Geraldine</td>
</tr>
<tr>
<td>6. Pilot Pre-user Satisfaction</td>
<td>Returned 23rd May</td>
<td>10</td>
<td>• Benefit Onc/DCU Patient • Quality improved • Increased numbers</td>
<td>Geraldine</td>
</tr>
<tr>
<td>7. Collate Pre-Pilot Data</td>
<td>May 26th</td>
<td>5,6</td>
<td></td>
<td>Ursula</td>
</tr>
<tr>
<td>a) Staff Surveys</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) User Surveys</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Distribute/Collect Pre-staff satisfaction</td>
<td>Returned 20(^{th}) June</td>
<td>7</td>
<td></td>
<td>Geraldine</td>
</tr>
<tr>
<td>a) Pre-staff satisfaction</td>
<td>Returned 4(^{th}) July</td>
<td>7</td>
<td></td>
<td>Kathryn</td>
</tr>
<tr>
<td>b) Pre-user satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Collate Pre-Data</td>
<td>10 days</td>
<td>8</td>
<td></td>
<td>Ursula</td>
</tr>
<tr>
<td>a) Staff Surveys</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) User Surveys</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAME</td>
<td>EFFORT</td>
<td>DEPENDENCY</td>
<td>ASSUMPTION</td>
<td>PERSON</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>------------</td>
<td>------------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| 10. Recruit Staff (2 Medical Scientists (MS)) | Complete | | • Carmel  
• 2 job-sharers to share MS | |
| 11. Design system for Emergency specs on Night duty to assess time  
a) Specimen is taken  
b) Specimen received  
c) Results reported | 17th June | • Decreased result turnaround times | Geraldine |
| 12. Stats on Pre-pilot patient numbers  
a) Oncology  
b) Day Care Unit | 19th June | • Increased numbers treated | Michael Kehoe |
| 13. For oncology patient design table to record  
a) Time spec is taken  
b) Time spec reaches lab  
c) Time result is released  
d) Time infusion is ready from Pharmacy  
e) Time patient is finished infusion | Partial 16th June | • Decreased result turnaround time  
• Earlier treatment of patient | Geraldine |
| 14. Template designed for Cost On-call  
a) Old System  
b) New System | Complete | | Michael Kehoe |
| 15. Stats on number of calls  
Mon-Fri  
a) 17-23.00  
b) 23.00-8.00  
c) 8.00-9.00  
Sat and Sun  
a) 8-23.00  
b) 23.00-8.00 | Complete | | Geraldine |
| 16. For DCU patient (8-16.00) design template to record  
a) Time specimen taken  
b) Time specimen received in laboratory  
c) Time result released | Complete | | Geraldine |
<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. Cost of On-call</td>
<td>Weekly</td>
<td></td>
<td></td>
<td>Michael</td>
</tr>
<tr>
<td>a) Old System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) New System</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Distribute/ Collect Staff Survey</td>
<td>17th Nov 15th Dec 9th Jan 04 5th Mar 04</td>
<td></td>
<td>Staff completed 7/14/21/26-week rotation</td>
<td>Kathryn</td>
</tr>
<tr>
<td>19. User Surveys</td>
<td>27th Nov 1st Dec 2nd Mar 04</td>
<td></td>
<td>3/6 month</td>
<td>Ursula</td>
</tr>
<tr>
<td>* ICU, Gab, A/E, MAU, ** DCU, Oncology Day Ward</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Collate Survey data</td>
<td>1st Dec 22nd Dec 16th Jan 04 19th Mar 04 26th Nov 1st Dec 8th Mar 04</td>
<td></td>
<td></td>
<td>Ursula</td>
</tr>
<tr>
<td>a) Staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) User</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Financial evaluation for</td>
<td>6th Dec</td>
<td></td>
<td>Budget on target No loss of earnings</td>
<td>Michael/Kathryn</td>
</tr>
<tr>
<td>a) Hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Staff</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Collate data on Oncology result turnaround times</td>
<td>Weekly</td>
<td></td>
<td></td>
<td>Geraldine</td>
</tr>
<tr>
<td>23. Collate data on DCU result turnaround times</td>
<td>Weekly</td>
<td></td>
<td></td>
<td>Geraldine</td>
</tr>
<tr>
<td>24. Collate data on spec result turnaround time on core hours</td>
<td>Weekly</td>
<td></td>
<td></td>
<td>Geraldine</td>
</tr>
<tr>
<td>25. Stats on patient numbers for</td>
<td>Monthly</td>
<td></td>
<td>Increase</td>
<td>Michael</td>
</tr>
<tr>
<td>a) Oncology Day Ward</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) DCU</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Stats on no of calls Mon-Fri</td>
<td>Weekly</td>
<td></td>
<td></td>
<td>Geraldine</td>
</tr>
<tr>
<td>a) 17-23.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) 23.00-8.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) 8.00-9.00</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Sat and Sun</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) 8-17.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) 17.00-23.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f) 23.00-8.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Collate data on Oncology patient</td>
<td>Weekly</td>
<td></td>
<td></td>
<td>Geraldine</td>
</tr>
</tbody>
</table>
# RISK ANALYSIS

**Project Name:** Pathology Department Wexford General Hospital  
**Project ID:** WEX LAB

<table>
<thead>
<tr>
<th>RISK</th>
<th>PROBABILITY ((P)) L/M/H (1/2/3)</th>
<th>IMPACT ((I)) L/M/H (1/2/3)</th>
<th>EFFECT ((P \times I))</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shortage of locum staff</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>• Delay start time</td>
</tr>
</tbody>
</table>
| 2. Need for training              | 3                                 | 3                         | 9                      | • Delay start time      
|                                   |                                   |                           |                        | • Run with core of 6    |
Pilot Project 2: Haematology/Blood Transfusion Laboratory Midland Regional Hospital Tullamore

<table>
<thead>
<tr>
<th>Background</th>
<th>A Consultant Haematologist, based in Tullamore, was appointed to the Midland Health Board in September 2000, followed by the appointment of a Consultant Oncologist in June 2002. The above consultants had looked for early morning start in the Haematology laboratory to process samples from patients on cytotoxic drugs. Haematology/Blood Transfusion laboratory staff were unable to facilitate this early morning start due to inadequate staff numbers and also the additional pressure of training, following the commissioning of new equipment in the laboratory.</th>
</tr>
</thead>
</table>
| Goal | • Establish baseline figures and define the key performance indicators  
• Role out pilot and evaluate the key performance indicators |
| Deliverables | • Earlier laboratory service to patients of the Regional Oncology Haematology Day Unit (ROHDU)  
• Flexible working pattern for Medical Scientists |
| Time/Cost | • Pilot will have a 6-month duration  
• Estimated cost = €20,000  
• Allocated funding = €20,000 |
| Milestones | • Staff Survey after 2 months  
• User Survey after 2 months |
| Quality | • Improved care to patient-User Satisfaction Survey  
• Flexible work practice-Staff Satisfaction |
| Team | Peter Waters – Hospital Manager; Jane Treacy – Chief Medical Scientist; Sean Phean and Regina Creighton - Senior Medical Scientists Haematology/Blood Transfusion; and Grace O’Keeffe - MLSA Agent. Input from the following hospital personnel - Dr Bolger-Oncologist; Dr Crotty-Haematologist and CNM2-Oncology; Quentin Crameri-Pharmacy Department and Eamonn Brady - Business Manager. |
| Scope | • Goals/Deliverables as set out above  
• See Task Schedule and Risk Analysis/Contingency |
| Outline Plan | • Design and Planning – See Task Schedule and Risk/Contingency  
• Analysis-Start Date 29th May 2003  
• Implementation of pilot-Start Date 6th September 2003  
• Track and monitor during pilot-Finish Date 5th March 2004  
• Evaluate on completion of pilot |
### PRE-PILOT TASK SCHEDULE

**Project Name:** Oncology/Haematology Tullamore  
**Project ID:** ONCTULL

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Schedule early roster</td>
<td>Completed</td>
<td>3</td>
<td>Core staff to cover 5 days</td>
<td>Sean</td>
</tr>
<tr>
<td>2. Outline early work duties</td>
<td>Completed</td>
<td></td>
<td>ROHDU patients</td>
<td>Regina/Sean</td>
</tr>
<tr>
<td>3. Recruit Staff (1 Medical Scientist)</td>
<td>Completed</td>
<td></td>
<td>Locum available</td>
<td>Jane</td>
</tr>
<tr>
<td>4. Distribute/collect Pre-pilot staff survey</td>
<td>Completed 4/9/03</td>
<td></td>
<td>Flexibility</td>
<td>Sean</td>
</tr>
<tr>
<td>5. Distribute/collect Pre-pilot user survey</td>
<td>Completed 4/9/03</td>
<td></td>
<td>Benefit to ROHDU patients</td>
<td>Regina</td>
</tr>
</tbody>
</table>
| 6. Collate pre data  
   a) Staff  
   b) User | Completed 18/9/03 18/3/03 | 4,5 | Increased numbers treated | Ursula |
| 7. Collate patient numbers (Base line data) | Completed | | | Regina |
| 8. Worksheet in laboratory  
   a) Patient name  
   b) Time specimen received in lab  
   c) Time result released  
   d) Test requested | Completed 5/9/03 | | Decreased technical turnaround  
   Decreased patient turnaround time | Regina/Sean |
| 9. Worksheet on Ward  
   a) Patient name  
   b) Admission time  
   c) Sampling time  
   d) Result time  
   e) Chemo infusion start and finish time  
   f) OR x-matched blood/infusion start and finish time | Completed 5/9/03 | | Decreased patient turnaround time  
   More timely service | Regina/Sean |
| 10. Mechanism to assess cost | Completed | | Budget on target | Peter Waters |
# DURING PILOT TASK SCHEDULE

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Collect/collate data on technical turnaround time (Task 8)</td>
<td>Tuesday Weekly/4 Weekly</td>
<td></td>
<td>• Decreased technical turnaround time</td>
<td>Regina/Sean</td>
</tr>
<tr>
<td>12. Collect/Collate data on patient turnaround time (Task 9)</td>
<td>Tuesday Weekly/4 Weekly</td>
<td></td>
<td>• Decreased turnaround time • More timely service</td>
<td>Regina/Sean</td>
</tr>
<tr>
<td>13. Collate stats on number of patients</td>
<td>Tuesday Weekly/4 weekly</td>
<td></td>
<td>• Increase</td>
<td>Regina</td>
</tr>
<tr>
<td>15. Distribute/collect Staff satisfaction survey</td>
<td>Completed 7/11/03</td>
<td></td>
<td>• Milestone after 2 months</td>
<td>Sean</td>
</tr>
<tr>
<td>16. Distribute/collect User satisfaction survey</td>
<td>Completed 7/11/03</td>
<td></td>
<td>• Milestone after 2 months</td>
<td>Regina</td>
</tr>
<tr>
<td>17. Collate data from surveys a) Staff b) User</td>
<td>Completed 21/11/03</td>
<td>15, 16</td>
<td></td>
<td>Ursula</td>
</tr>
<tr>
<td>18. Feedback from Pharmacy</td>
<td>Tuesday Monthly</td>
<td></td>
<td></td>
<td>Sean</td>
</tr>
</tbody>
</table>
## RISK ANALYSIS

**Project Name:** Oncology/Haematology Tullamore  
**Project ID:** ONCTULL

<table>
<thead>
<tr>
<th>RISK</th>
<th>PROBABILITY (P) L/M/H (1/2/3)</th>
<th>IMPACT (I) L/M/H (1/2/3)</th>
<th>EFFECT (P × I)</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Staff shortage</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>* Delay start date</td>
</tr>
<tr>
<td>2. Training needs</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>* Delay start date</td>
</tr>
<tr>
<td>3. Compensation to staff for early start</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>* Make priority</td>
</tr>
</tbody>
</table>
Pilot Project 3: Microbiology Laboratory Waterford Regional Hospital

<table>
<thead>
<tr>
<th>Background</th>
<th>Saturday morning workload had escalated since the present arrangements of staffing were put in place. Staff were unable to finish on time – 4 hours in place of 3 hours being the norm. Staff were opting-out by swapping off Saturday rota. The Consultant Microbiologists have a need for additional follow-up work on critically ill patients, which was proving difficult to arrange. Lower priority work was currently being deferred until Monday resulting in deterioration of sample quality and delayed reporting of results. This contravened recommended guidelines for testing i.e. within 24-48 hours from time specimen was taken.</th>
</tr>
</thead>
</table>
| Goal | • Establish baseline figures and define the key performance indicators  
• Role out pilot and evaluate the key performance indicators |
| Deliverables | • Increased Microbiology service on Saturday morning  
• Improved quality of service to patients on Saturday morning  
• All samples processed with in 24 hours of collection  
• Improved staff morale |
| Time/Cost | • Pilot will have a 6-month duration  
• Estimated cost = €6,500  
• Allocated funding = €6,500 |
| Milestones | • Review after 2 months – Staff Survey and Clinical Impact Report |
| Quality | • Improved quality care to patient- Consultant Microbiologist Analysis  
• Less stressful work practice and job satisfaction- Staff Satisfaction Survey |
| Team | Theo Neijenhuizen-Deputy Hospital Manager; Julie Hallahan-Hospital Finance; Gabriel Kelly- Laboratory Finance; Margaret Molloy –Laboratory Manager; Noel Shanaghy-Chief Medical Scientist; Dr Anne Moloney- Consultant Microbiologist; David Clancy- MLSA Agent and Patrick Mulhare- Senior Medical Scientist. |
| Scope | • Goals/Deliverables as set out above  
• See Task Schedule and Risk Analysis/Contingency |
| Outline Plan | • Design and Planning – See Task Schedule and Risk/ Contingency Analysis  
Start Date 6th August 2003  
• Implementation of pilot – Start Date 6th September 2003  
• Track and monitor during pilot-Finish Date 28th February 2004  
• Evaluate on completion of pilot |
**PRE-PILOT TASK SCHEDULE**

Project Name: Microbiology Laboratory Waterford Regional Hospital
Project ID: MICRO WRH

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
</table>
| 1.   | Schedule Sat. am roster  
a) Medical Scientist  
b) Medical Laboratory Assistant | Completed  
15/8/03  
2/9/03 | • Core staff to cover  
a) Noel  
b) Margaret |  

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Assign work schedule for Saturday am</td>
<td>22/8/03</td>
<td>• All specs received processed</td>
<td>Noel</td>
</tr>
</tbody>
</table>
| 3.   | Pilot pre-staff satisfaction survey | Completed 12/8/03 | • Less stressful  
• Job satisfaction | David |
| 4.   | Collate data from pilot pre survey | Completed 26/8/03 | 3 | Ursula |
| 5.   | Distribute/collect pre-pilot staff satisfaction survey | Completed 16/9/03 | 4 | David |
| 6.   | Collate data from pre survey | Completed 23/09/03 | 5 | Ursula |
| 7.   | Design system to assess date  
a) Sample collected  
b) Results received | Completed | | Noel |
| 8.   | Design system to assess clinical impact | Completed | • Improved quality service  
• Earlier diagnosis of infection  
• Appropriate treatment | Anne |
| 9.   | Stats of number of specs received Saturday am | Information from Task 7 | • Increase | Noel |
| 10.  | Design system to assess cost | Completed | | Gabriel/ Julie |
| 11.  | Stats on number of patients benefiting Saturday am service | Completed | • Increase | Noel |
## DURING PILOT TASK SCHEDULE

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
</table>
| 12. Collate data on specimen throughput | Friday Weekly/ 4 weekly | • All samples processed  
• Follow up work done | Noel |
| 13. Collate data on clinical impact | Friday Weekly/ 4 weekly  
Friday 8 Weekly (Milestone) 7/11/03 | • Improved quality  
• Earlier diagnosis  
• Appropriate treatment | Anne/ Noel |
| 14. Collate stats on number of patients using service | Friday Weekly/ 4 Weekly | • Increase | Noel |
| 15. Collate stats on number of specimens processed Sat | Friday Weekly/ 4 Weekly | • Increase | Noel |
| 16. Assess cost | Friday 4 weekly | • Budget on target | Gabriel |
| 17. Distribute/collect  
a) MS satisfaction survey  
b) MLA satisfaction survey | Completed 12/12/03 | • Milestone after 3 months | David |
| 18. Collate data from  
a) MS surveys  
b) MLA surveys | Completed 19/12/03 | 17 | Ursula |
RISK ANALYSIS
Project Name: Microbiology Laboratory Waterford Regional Hospital
Project ID: MICRO WRH

<table>
<thead>
<tr>
<th>RISK</th>
<th>PROBABILITY (P) L/M/H (1/2/3)</th>
<th>IMPACT (I) L/M/H (1/2/3)</th>
<th>EFFECT (P X I)</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Insufficient core of MS staff</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>• Reduce length of pilot</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Prioritise workload</td>
</tr>
<tr>
<td>2. Insufficient core of MLA staff</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>• Reduce length of pilot</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Prioritise workload</td>
</tr>
</tbody>
</table>
Pilot Project 4: Microbiology Laboratory St James's Hospital

| Background | This laboratory 'on site' service had developed on an ad hoc basis as the clinical service had expanded over the years. Staff were rostered depending on availability but increased demands on the routine laboratory service meant that staff were not always available to attend. This lack of continuity resulted in confusion, specimens being lost in transit and delays in getting results to the clinicians. The availability of laboratory results, during clinic hours, supported the clinician in the appropriate treatment of patients. Attendances at this clinic have more than doubled since 1988 and the number and complexity of tests has also increased. A total of 22,275 patients attended the Genito-Urinary Infectious Disease (GUIDE) Clinic in 2003. The dramatic rise in the number of people presenting with sexually transmitted infections has lead to a crisis in this service. The increase is related to population changes, the syphilis epidemic and an increase in Sexually Transmitted Infections (STI) particularly Chlamydia. The clinic usually overruns so that patients, sometimes up to 30, seen after 16:30, do not benefit from the same quality of service as those seen earlier. The direct microscopy is not done after this time and specimens are held until the next day for processing with resultant loss in viability of organisms. |
| Goal | • Establish baseline figures and define the key performance indicators • Role out pilot and evaluate the key performance indicators |
| Deliverables | • Dedicated laboratory 'on site' service to patients of the GUIDE clinic • Later laboratory service three evenings per week to patients of the GUIDE clinic |
| Time/Cost | • Pilot will have a 6-month duration • Estimated cost = €24,000 • Allocated funding = €24,000 |
| Milestones | • Review of Progress 5th December 2003 • Staff and User Surveys-12th December 2003 |
| Quality | • Improved care to patient-User Satisfaction Survey • Flexible work practice-Staff Satisfaction |
| Team | Noel White-Laboratory Manager; Philip Creery -Business Director; Helen Barry-Chief Medical Scientist; Siobhan McCrea-MLSA Agent; Brenda Moloney-Senior Medical Scientist and Ian Fitzgerald-Medical Scientist |
| Scope | • Goals/Deliverables as set out above • See Task Schedule and Risk Analysis/Contingency |
| Outline Plan | • Design and Planning—See Task Schedule and Risk/Contingency Analysis-Start Date 18th June 2003 • Implementation of pilot—Start Date 15th September 2003 • Track and monitor during pilot-Finish Date 11th March 2004 • Evaluate on completion of pilot |
## PRE-PILOT TASK SCHEDULE

**Project Name:** Microbiology Laboratory St James’s Hospital  
**Project ID:** GUIDE MICRO

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
</table>
| 1. Schedule Day Roster  
a) MS  
b) MLA | Complete | 3 | * Core staff to cover | Niamh Murphy |
| 2. Schedule Evening Roster  
a) MS  
b) MLA | Complete | 3 | * Core staff to cover | Brenda Moloney |
| 3. Recruit staff  
a) 0.5 MS  
b) 1.0 LA | Complete | | * Locum staff available | Helen Barry |
| 4. Assign technical duties  
a) Day  
b) Evening | Complete | | | Helen Barry |
| 5. Pilot Pre user satisfaction surveys | Complete 9/7/03 | | * Benefit service  
* Improve quality | Siobhan McCrea |
<p>| 6. Pilot Pre staff satisfaction surveys | Complete 9/7/03 | | * Flexibility | Siobhan McCrea |
| 7. Collate data from pilot surveys | Complete 9/7/03 | 5,6 | | Ursula Fox |</p>
<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Distribute/collect staff satisfaction survey</td>
<td>Complete 10/9/03</td>
<td></td>
<td>• Flexibility</td>
<td>Ian Fitzgerald</td>
</tr>
<tr>
<td>9. Distribute/collect user satisfaction survey</td>
<td>Complete 9/9/03</td>
<td></td>
<td>• Benefit service • Improve quality</td>
<td>Siobhan McCrea/ Helen Barry/ Joan Flynn</td>
</tr>
<tr>
<td>10. Collate Data from surveys</td>
<td>Complete 26/9/03</td>
<td>8,9</td>
<td></td>
<td>Ursula Fox</td>
</tr>
<tr>
<td>11. Design system to assess time (LIS) a) Patient arrives at clinic b) Specimen received c) Microscopy result authorised d) Patient seen by Healthcare Provider/Adviser</td>
<td>Partial 5/9/03 a) to c) d) not possible</td>
<td></td>
<td>• Decreased patient turnaround time • Decreased technical turnaround time</td>
<td>Siobhan McCrea/ June Craig</td>
</tr>
<tr>
<td>12. Design system to audit number of patients after 4.30</td>
<td>Complete 23/7/03</td>
<td></td>
<td>• Increase</td>
<td>Siobhan McCrea</td>
</tr>
<tr>
<td>13. Stats of no of pts using service</td>
<td>Complete 10/7/03</td>
<td></td>
<td>• Increase</td>
<td>June Craig Data Manager</td>
</tr>
<tr>
<td>14. Design system to record time a) Culture result authorised (LIS) b) HIV Viral loads received (Manual)</td>
<td>Complete 23/7/03</td>
<td></td>
<td></td>
<td>Siobhan McCrea</td>
</tr>
<tr>
<td>15. Assess cost</td>
<td>Complete</td>
<td></td>
<td>• Budget is on target</td>
<td>Helen Barry/ J Smyth</td>
</tr>
</tbody>
</table>
### DURING PILOT TASK SCHEDULE

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Collect/Collate data on technical turnaround time</td>
<td>Monday Weekly/Progress Report 14th Nov 5th Dec</td>
<td>• Decreased technical turnaround time • Improved quality of results</td>
<td>Siobhan</td>
<td></td>
</tr>
<tr>
<td>17. Collect/Collate data on patient turnaround time</td>
<td>Monday Weekly/Progress Report 14th Nov 5th Dec</td>
<td>• Decrease</td>
<td>Siobhan/June</td>
<td></td>
</tr>
<tr>
<td>18. Collate stats on number of pts using service</td>
<td>Monday Monthly</td>
<td>• Increase</td>
<td>June/Craig</td>
<td></td>
</tr>
<tr>
<td>19. Collate stats on number of patients after 4.30pm</td>
<td>Monday/Weekly Progress Report 14th Nov 5th Dec</td>
<td>• Increase • Improved quality service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Assess cost</td>
<td>Monthly</td>
<td>• Budget on target</td>
<td>Helen/J Smyth</td>
<td></td>
</tr>
<tr>
<td>21. Distribute/coll. staff surveys (MS +MLA)</td>
<td>Complete 12/1/04</td>
<td>• Milestone after 13 weeks</td>
<td>Ian</td>
<td></td>
</tr>
<tr>
<td>22. Distribute/coll. User surveys</td>
<td>Complete 12/1/04</td>
<td>• Milestone after 13 weeks</td>
<td>Siobhan/Joan Flynn</td>
<td></td>
</tr>
<tr>
<td>23. Collate survey data</td>
<td>Complete 19/1/04 19/1/04</td>
<td>21,22</td>
<td>Ursula</td>
<td></td>
</tr>
</tbody>
</table>
### RISK ANALYSIS

**Project Name:** Microbiology Laboratory St James’s Hospital  
**Project ID:** GUIDE MICRG

<table>
<thead>
<tr>
<th>RISK</th>
<th>PROBABILITY (P) L/M/H (1/2/3)</th>
<th>IMPACT (I) L/M/H (1/2/3)</th>
<th>EFFECT (P X I)</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shortage of locum staff</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>• Delay start date</td>
</tr>
<tr>
<td>2. Financial</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>• Shorten length of pilot</td>
</tr>
</tbody>
</table>
| 3. Insufficient MLA staff | 3                              | 2                        | 6              | • Curtail Monday evening service  
  • Use MS on Monday evening |

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**Appendix 2.1**

**Chapter 9**

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**Page 167**
# Pilot Project 5: Histology Laboratory Waterford Regional Hospital

## Background
Clinicians have over the years expressed a desire to have shorter result turnaround times for histology specimens. (Typical turnaround times were of the order of 5 to 8 days before a printed report appeared in the chart). In 2001, a proposal was put forward in the Service Plan to reduce the turnaround time of Histology results particularly for urgent specimens. The Breast Cancer Strategy Group, in particular, had expressed support for this proposal, as it would give speedy access to results on fine needle breast biopsies, used to aid diagnosis of breast cancer. With a combination of a change in laboratory practice and an up-grading of the computer ward enquiry system, it was determined that a turn around time of 24 hours could be achieved for fine needle aspirates (FNA) and endoscopy specimens and that this service would be available to clinicians in the South Eastern Health Board Area (SEHB). This 24-hour availability of a FNA result was in line with the recommendation of the Sub-group to the National Cancer Forum- "Development of Services for Symptomatic Breast Disease" March 2000.

## Goal
- Establish baseline figures and define the key performance indicators
- Role out pilot and evaluate the key performance indicators

## Deliverables
- Technical turnaround time of 12 hours for all FNAs and endoscopy biopsies received before 17.00
- A 24-hour electronic 'report' to all hospitals in the SEHB for rapidly processed needle and endoscopy biopsies.
- Medical Scientists working an out-of-hour service

## Time/Cost
- Pilot will have a 6-month duration
- Estimated cost = €29,000
- Allocated funding = €29,000

## Milestones
- Feedback after rotation of laboratory staff on sessions after 2 weeks and 2 months
- User Satisfaction Survey after three months

## Quality
- Earlier diagnosis and increased efficiency in clinical management of patient - User Satisfaction Survey
- Laboratory staff working an out-of-hours service - Staff Satisfaction Survey

## Team
Theo Neijenhuizen-Deputy Hospital Manager; Julie Hallahan-Hospital Finance; Gabriel Kelly-Laboratory Finance; Margaret Molloy-Laboratory Manager; Gerard O'Reilly-Chief Medical Scientist; Dr Rob Landers-Consultant Histopathologist; Emily O Meara-MLSA Agent, Ruth Costine-Medical Scientist and Sinead Twomey-Secretarial Supervisor.

## Scope
- Goals/Deliverables as set out above
- See Task Schedule and Risk Analysis/Contingency

## Outline Plan
- Design and Planning - See Task Schedule and Risk/Contingency Analysis- Start Date 6th August 2003
- Implementation of pilot - Start Date 22nd Sept 2003
- Track and monitor during pilot-Finish Date 26th March 2004
- Evaluate on completion of pilot
## PRE-PILOT TASK SCHEDULE

**Project Name**: Histology Laboratory Waterford Regional Hospital  
**Project ID**: HIST WRH

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Schedule evening roster</td>
<td>Completed 13/8/03</td>
<td></td>
<td>• Core staff to cover</td>
<td>Ger</td>
</tr>
<tr>
<td>2. Assign technical duties on evening roster</td>
<td>Completed 13/8/03</td>
<td></td>
<td>• Breast and needle biopsies only</td>
<td>Ger</td>
</tr>
<tr>
<td>3. Pilot Pre-staff satisfaction survey</td>
<td>Completed 8/8/03</td>
<td></td>
<td>• Flexible</td>
<td>Ruth</td>
</tr>
</tbody>
</table>
| 4. Pilot pre-user satisfaction survey | Completed 29/8/03 |  | • Improve quality  
• Earlier diagnosis  
• Earlier treatment | Rob |
| 5. Collate data from pilot pre surveys  
a) Staff  
b) User | Completed 8/8/03  
2/9/03 | 3,4 |  | Ursula |
<p>| 6. Distribute/collect staff satisfaction survey | Completed 11/10/03 | 5 | • Flexible | Ruth |
| 7. Distribute/collect user satisfaction survey | Completed 24/9/03 | 5 | • As for 4 above | Rob |</p>
<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
</table>
| 8. Collate data from pre surveys  
a) Staff  
b) User | Completed  
18/9/03  
8/10/03 | 6,7 | | Ursula |
| 9. Design system to record  
a) Patient name  
b) Specimen type  
a) Time specimen received  
b) Time specimen processed  
c) Time results released | Completed  
29/8/03 | * Decreased technical turnaround time for needle and endoscopy biopsies | Ger/Rob |
| 10. Stats on number of biopsy specimens  
a) Needle Aspirates  
b) Endoscopy | Information from Task 9 | * Increase | Ger |
<p>| 11. Stats of number of patients | Information from Task 9 | * Increase | Ger |
| 12. Design system to assess cost | Completed | | Gabriel |</p>
<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Collate data on technical turnaround time of needle and endoscopy biopsies</td>
<td>Monday Weekly/4 weekly</td>
<td></td>
<td>Decreased technical turnaround time of needle and endoscopy biopsies</td>
<td>Ger</td>
</tr>
<tr>
<td>14. Collate stats on number of patients using service</td>
<td>Monday Weekly/4 weekly</td>
<td></td>
<td>Increase</td>
<td>Ger</td>
</tr>
<tr>
<td>15. Assess cost/activity per specimen</td>
<td>Monday Weekly/4 weekly</td>
<td></td>
<td>Budget on target · Activity cost</td>
<td>Gabriel</td>
</tr>
<tr>
<td>16. Staff Satisfaction feedback</td>
<td>Completed 10/10/03</td>
<td></td>
<td>2 week milestone</td>
<td>Ruth</td>
</tr>
<tr>
<td>17. Distribute/collect User satisfaction survey</td>
<td>Completed 12/1/04</td>
<td></td>
<td>Milestone after 3 months</td>
<td>Rcb</td>
</tr>
<tr>
<td>18. Distribute/collect User satisfaction survey</td>
<td>Completed 12/1/04</td>
<td></td>
<td>Milestone after 3 months</td>
<td>Rob</td>
</tr>
<tr>
<td>19. Collate data from surveys a) Staff b) User</td>
<td>Completed 19/1/04 19/1/04</td>
<td></td>
<td>17, 18</td>
<td>Ursula</td>
</tr>
</tbody>
</table>
### RISK ANALYSIS

**Project Name:** Histology Laboratory Waterford Regional Hospital  
**Project ID:** HIST WRH

<table>
<thead>
<tr>
<th>RISK</th>
<th>PROBABILITY (P) L/M/H (1/2/3)</th>
<th>IMPACT (I) L/M/H (1/2/3)</th>
<th>EFFECT (P x I)</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tissue Processor</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>Priority for purchase of new processor</td>
</tr>
<tr>
<td>(No Technical Support)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Shortage of core staff</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>Delay start date</td>
</tr>
<tr>
<td>3. Training of new staff</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>Design roster to accommodate</td>
</tr>
</tbody>
</table>

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Chapter 9

Report on the National Laboratory Pilot Projects

172
### Pilot Project 6: Haematology Department St James’s Hospital

#### Background
The Stat laboratory operates between 9.30am and 4pm and provides laboratory support to the Warfarin Out-patient Clinic, among others at St James’s Hospital. Number of patients registered on Warfarin is 1644 and the number of active patients is 1312. It is a Nurse led clinic based in the Out-patient Department and before the initiation of the pilot had converted to a postal clinic, with computerised dosing using Dawn AC software. Up to 170 patients are tested each morning in the clinic. Patient appointments begin at 8.00am, but any samples taken at this time are not analysed until 9.30am when Medical Scientist cover is available. This can lead to delays in patient dosing by nursing staff, particularly amendment of Warfarin dose where indicated and puts huge time pressure on nursing staff to ensure return of the report (through postage) to the patient the following day.

#### Goal
- Establish baseline figures and define the key performance indicators
- Role out pilot and evaluate the key performance indicators

#### Deliverables
- Earlier laboratory service to patients of the Warfarin Clinic
- Flexibility for laboratory staff

#### Time/Cost
- Pilot will have a 6-month duration
- Estimated cost = €24,400
- Allocated funding = €20,000

#### Milestones
- Staff Survey after 3 months
- User Survey after 3 months

#### Quality
- Improved care to patient-User Satisfaction Survey
- Flexible work practice-Staff Satisfaction

#### Team
Philip Creevy - Business Director; Noel White - Laboratory Manager; Barry White - Clinical Director; Mary Byrne - Chief Medical Scientist; Marie Rafferty - MLSA Agent; Fiona Holden - Medical Scientist and Niamh Philpott - Medical Scientist.

#### Scope
- Goals/Deliverables as set out above
- See Task Schedule and Risk Analysis/Contingency

#### Outline Plan
- Design and Planning - See Task Schedule and Risk/Contingency Analysis-Start Date 24th July 2003
- Implementation of pilot - Start 29th October 2003
- Track and monitor during pilot - Finish 28th April 2004
- Evaluate on completion of pilot
PRE-PILOT TASK SCHEDULE

Project Name: Haematology Department St James’s Hospital
Project ID: WAR HAEM

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Schedule early roster</td>
<td>Complete 25/8/03</td>
<td>• Core staff to cover</td>
<td>Niarmh</td>
</tr>
<tr>
<td>2.</td>
<td>Assign technical duties to early start</td>
<td>Complete 7/8/03</td>
<td>• Warfarin patient only</td>
<td>Mary</td>
</tr>
<tr>
<td>3.</td>
<td>Recruit staff (0.5 Medical Scientist)</td>
<td>Complete 17/10/03</td>
<td>• Locum available</td>
<td>Mary</td>
</tr>
<tr>
<td>4.</td>
<td>Pilot Pre-staff survey</td>
<td>Complete 1/8/03</td>
<td>• Flexibility</td>
<td>Fiona</td>
</tr>
<tr>
<td>5.</td>
<td>Pilot Pre-user survey</td>
<td>Complete 1/8/03</td>
<td>• Patient benefit • Improved service</td>
<td>Mary</td>
</tr>
<tr>
<td>6.</td>
<td>Collate pilot data a) Staff b) User</td>
<td>Complete 8/8/03</td>
<td>4,5</td>
<td>Ursula</td>
</tr>
<tr>
<td>7.</td>
<td>Distribute/collect Pre-user surveys</td>
<td>Complete 29/8/03</td>
<td>6</td>
<td>Mary</td>
</tr>
<tr>
<td>8.</td>
<td>Distribute/collect Pre-staff surveys</td>
<td>Complete 29/08/03</td>
<td>6</td>
<td>• Flexibility</td>
</tr>
<tr>
<td>9.</td>
<td>Collate data a) User survey b) Staff survey</td>
<td>Complete 12/9/03</td>
<td>7,8</td>
<td>Ursula</td>
</tr>
</tbody>
</table>
### DURING PILOT TASK SCHEDULE

<table>
<thead>
<tr>
<th>NAME</th>
<th>EFFORT</th>
<th>DEPENDENCY</th>
<th>ASSUMPTION</th>
<th>PERSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Collect/collate data on technical turnaround time (Task 11)</td>
<td>4 weekly</td>
<td></td>
<td>• Decreased technical turnaround time for warfarin specimens</td>
<td>Mary</td>
</tr>
<tr>
<td>11. Collect/Collate data on patient turnaround time (Task 12) (Estimated)</td>
<td>4 weekly</td>
<td></td>
<td>• Decreased turnaround • More timely service</td>
<td>Mary</td>
</tr>
<tr>
<td>12. Collate stats on a) Total number of patients b) No. of pts before 9.30am</td>
<td>4 weekly</td>
<td></td>
<td>• Increase</td>
<td>Mary/Fergal</td>
</tr>
<tr>
<td>13. Assess cost</td>
<td>4 weekly</td>
<td></td>
<td>• Budget on target</td>
<td>J Smyth</td>
</tr>
<tr>
<td>14. Distribute/collect Staff satisfaction survey</td>
<td>Complete 30/1/04</td>
<td></td>
<td>• Milestone after 3 months</td>
<td>Fiona</td>
</tr>
<tr>
<td>15. Distribute/collect User satisfaction survey</td>
<td>Complete 30/01/04</td>
<td></td>
<td>• Milestone after 3 months</td>
<td>Mary</td>
</tr>
<tr>
<td>16. Collate data from surveys a) Staff b) User</td>
<td>Complete 13/2/04</td>
<td>14, 15</td>
<td></td>
<td>Ursula</td>
</tr>
</tbody>
</table>
RISK ANALYSIS
Project Name: Haematology Department St James’s Hospital
Project ID: WAR HAEM

<table>
<thead>
<tr>
<th>RISK</th>
<th>PROBABILITY (P) L/M/H (1/2/3)</th>
<th>IMPACT (I) L/M/H (1/2/3)</th>
<th>EFFECT (P X I)</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shortage of locum staff</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>Delay start date</td>
</tr>
<tr>
<td>2. Financial shortfall</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>Shorten pilot duration</td>
</tr>
</tbody>
</table>
# Pilot Project 7: Pathology Department Tralee General Hospital

**Background**
The Pathology Department finds itself servicing an escalating workload within defined budgetary constraints. It is widely recognised that whilst requesting every pathology test on every patient may increase clinically effectiveness, it does so at a considerable cost. Clinical efficacy on the other hand incorporates, at least at a contextual level, the issue of cost. It is proposed to examine the demand side of the equation. The approach is to provide for scientifically based increases in demand through consultation with clinicians to optimise use of pathology resources i.e. to establish a mechanism whereby scientists and clinicians can combine to determine the optimal role of the laboratory in patient management.

### Goal
- Establish baseline figures and define key performance indicators
- Roll out pilot and evaluate the key performance indicators

### Deliverables
- Agreed effective protocols for diagnostic laboratory testing of patients from Accident/Emergency and Medical Assessment Unit
- More effective and efficient diagnostic service with clear guidance as to appropriateness or otherwise, of requesting patterns from users of A/E and MAU
- More efficient and effective use of resources

### Time/Cost
- Project will have a 6-month duration
- Estimated cost = €13,000
- Allocated funding = €13,000
- Clerical support provided by Hospital

### Quality
- Optimisation of resources to benefit patient

### Team
Dr. Jerry Clifford-Local Project Manager, Gerry Christie-Chief Medical Scientist; John Brick-MLSA Agent; Medical and Scientific staff from the Protocol Discussion Group and the Scientific Process Group

### Scope
- Goals/Deliverables as set out above
- See Task Schedule

### Outline Plan
- Design and Planning-See Task Schedule –Date 1\(^{st}\) October 2003-6\(^{th}\) February 2004
- Implementation of pilot (Protocols)-Date 6\(^{th}\) February-26\(^{th}\) March 2004
- Track and monitor during pilot-Finish date 31\(^{st}\) March 2004
- Evaluate on completion of pilot
TASK SCHEDULE

Project Name: Pathology Department Tralee General Hospital
Project ID: PATH RAL

Phase 1: October-December 2003

1. Audit of service performance
   - Turnaround Time of tests in the disciplines of Haematology and Biochemistry, performed on patients from A/E and MAU to be reviewed (6th October-28th November 2003)
   - Duplication of tests from patients of A/E and MAU to be reviewed (6th October-28th November 2003)
   - Memorandum introducing project to the stakeholders from the General Manager to be written and forwarded to General Administration for circulation
   - Introductory letter, terms of reference, etc from the local Project Manager to be forwarded to all stakeholders—including a request for a candidate nomination for inclusion in one of the 2 working groups (Protocol Discussion Group/Scientific Process Discussion Group).

2. Protocol Discussion Group- to agree “Protocols”

A number of circulars distributed and a number of meetings scheduled in December. The group is composed of:

Dr. S. O’Rourke, A&E Consultant
Mr. T. McCormack, Consultant Surgeon
Dr. T. Higgins, Consultant Endocrinologist/Physician
Dr. R. Liston, Consultant Physician/Geriatrician
Dr. R. McEneaney, Consultant Physician
Jerry Clifford Local Project Manager
Mr. G. Christie, Chief Medical Scientist

- Protocol discussion group to meet and await “sign off” on agreed “protocols” i.e. limitation of certain tests and duplication following review of data.

3. Scientific Process Group- to agree process changes in Pathology

Modification at the level of demand identified process change at the supply level. A single request form and a central specimen reception were identified as infrastructure required to support the implementation “demand protocols”.

A number of circulars distributed and a number of meetings scheduled every Wednesday during November and early December.
This group consists of

Jerry Clifford, Local Project Manager
Mr. G. Christie, Chief Medical Scientist
Ms. Hazel Reid, Senior-in-charge of Blood Transfusion
Mr. Colm Power, Senior-in-charge of Microbiology
Ms. Mary Kelliher, Senior-in-charge of Haematology
Ms. Mary O’Callaghan, Senior-in-charge of Biochemistry
Mr. Mark Collins, Senior-in-charge of Histology

- Single request forms for Biochemistry, Microbiology and Biochemistry to be designed and the logistics of central reception to be discussed.

Phase 2: Dec 2003-Jan 2004

1. Service alteration using identified drivers of constraint

- Central Reception set up and ready to go. Agreed staffing by rotation of scientific staff from the various disciplines. Under the direction of Senior Medical Scientist in Biochemistry.

- New specimen request forms printed and ready for use

2. Protocols agreed – to be included as part of order entry function in computer system. The following tests constitute the tests which demand protocols have been established and which will be included in the re-audit phase (2nd February – 26th March 2004):

- Thyroid Function Tests;
- PSA;
- Allergy Screens;
- Uric Acid;
- Coeliac Screens;
- B12, Folate, Ferritin (excluding haemochromatosis);
- Tumour markers;
- D-Dimers;
- Autoimmune profile
- Random Cholesterol
Phase 3: Feb 2004-June 2004

1. Pilot phase of agreed Demand Protocols
   - Piloted for 7 weeks from 6th February – 26th March
   - New specimen request form in use and Clerical staff now entering all patient demographics
   - Central Specimen Reception in use - staffed by a Medical Scientist rotated from the different disciplines.

2. Re-audit of data
   - Commence preliminary collection of data week starting 23rd February 2004

3. Final collection and audit of data on end of Pilot Phase
   - Turnaround times re-audited
   - Number of repeat test requests re-audited
   - Financial impact evaluated
STATUS REPORT

PROJECT NAME:

PROJECT ID:

WEEK ENDING:

TEAM LEADER:

SUMMARY STATUS:
Project is on target Y/N
(The word "target" rather than "Schedule" indicates that all aspects of the project are on target)

ACTIVITY THIS PERIOD:
(Give a brief feel of what is going on)

TASK SCHEDULE:
(Reason for change in plan)

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<th>NEW DATE</th>
<th>REASON FOR CHANGE</th>
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BUDGET:

ISSUES:
(Issues are normally problems. State the problem, possible solution and request action by named individual by a certain date)

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ATTACHMENTS:
(Optional detailed reports, for example Graphs, Surveys)

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