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History of Medical Laboratory Services in Bahrain. Part II. The Foundation of Modern Laboratory Services (1963-1975)

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In 1963, Dr George Inglott, a Maltese qualified Pathologist was recruited to be in charge of medical laboratory facilities, which lasted until 1975. He witnessed the foundation of modern laboratory clinical practice in Bahrain. He initially experienced limitations to advice on clinical practice of biochemistry and microbiology (including bacteriology, parasitology, and serology), but there were limited demands from the hospital clinical practitioners for such interpretations since most clinicians were capable to interpret the laboratory results themselves without the need of laboratory consultation. However, instead of showing deficiency, he developed the situation to his favour by introducing instrumentation in biochemistry. He used his administrative authority to undermine the microbiology practice so as to keep it away from his professional responsibility. Therefore, he was able to administer the laboratory practice unchallenged.

However, during Inglott's term, the laboratory underwent many developments and these cannot be attributed entirely to him, because they were the requirements of the time. They were dictated by the needs and development of clinical practice in the hospital and health problems in Bahrain. Nonetheless, there were expansions and developments in all sectors of the laboratory including haematology, histopathology, biochemistry, bacteriology, parasitology, blood bank, emergency laboratory, mortuary, and post-mortem examination. As a result, the dozen or so tests carried out in the laboratory when Inglott joined service in 1963 were increased to about 250 tests when he left the service in 1975.

There was a need to refine laboratory techniques and introduce new tests and automation to replace the manual methods. Qualified and experienced laboratory technicians were recruited from overseas centres and a local training programme was started to train Bahraini laboratory workers. Professional laboratory specialists were also recruited.

Administration. During the mid 1960s and as result of expanded health plans, the laboratory witnessed considerable increase in the workload, as well as, diversity of tests some of which were beyond the scope and experience of Inglott. For example, there was a growing need to develop the bacteriology at Salmaniya and Public Health Laboratory (PHL). Accordingly, Miss Unwin was recruited in 1968 as "Superintendent" to help Inglott manage the laboratory and supervise the Bacteriology unit. When she resigned in 1971 due to differences with Inglott, the

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job of "Chief Technician" was assigned to Mr Mohammed Abdul Rasool Al Khayat (February 1967), then to Mr. Faisal Yacoob Al-Hamar (01.01.69 later became Dean of College of Health Sciences, retired 1999) and finally to Mr Isamil Ibrahim Akbari.

During the service period of Inglott, more Bahraini workers many of whom were university graduates joined the laboratory[a] and qualified non-Bahraini technicians were recruited [b].

Haematology. Inglott was a capable haematologist and professionally mastered disorders related to this filed in Bahrain. He expanded the Haematology service and introduced the first semi-automated Coulter Counter (Model ZF) for haemoglobin estimation and white and red blood cell counts. The total and differential white blood cells, platelets and reticulocyte counts were performed manually. He also started reporting on peripheral blood films for red cell morphology and other haematological abnormalities and was the first to introduce examination of bone marrow aspirate for the diagnosis of bleeding disorders and neoplastic conditions of the haemopeotic and lymphorecticular systems.

Furthermore, being Maltese with a background experience in haemoglobinopathies, a group of hereditary blood disorders prevalent in the many Mediterranean countries including Malta, he was able to apply his knowledge to the same disorders, which are prevalent in Bahrain[1]. Accordingly, he introduced sickling and glucose-6-phosphate dehydrogenase tests for the screening of these disorders.

Biochemistry. Inglott helped to develop and expand Clinical Chemistry. In 1966 the laboratory was equipped with Corning Flame Photometer Model 100 (for the analysis of sodium and potassium only), Corning Colorimeter (for chloride, sugar, and urea), Titrator (for carbon dioxide and calcium), Unicam Spectrophotometer Model 500 (for liver function tests), and two Technicon AA1 Analysers (for cholesterol, triglycerides, uric acid, calcium, and phosphorus) donated by Arabian American Oil Company (ARAMCO). These analyzers and the haematology Coulter Counter were the first automated medical laboratory equipment used in the entire Arabian Gulf. In 1969, Technicon AA2 a second-generation analyzer, was also introduced and the list of biochemical tests performed by the laboratory was increased to include magnesium and Protein Bound Iodine (PBI). The AA2 was also used for the analysis of liver function tests.

In 1972, Dr Ahmed Rashwan, an Egyptian, was appointed to Salmaniya laboratory as Specialist Biochemist and with his wife, Dr Khadija Abualsuad as a Bacteriologist to the PHL. He had basic theoretical knowledge of biochemistry with no clinical experience. His role in the Laboratory was not clear and he became increasingly involved in operating the automated chemistry analysers to the embarrassment of the health authorities which, assumed that he would provide the needed help to support Inglott rather than technical assistance. Subsequently he left with his wife in 1975.

Bacteriology. In 1968, Miss Unwin was recruited to develop the Bacteriology service and she continued on the path laid in 1956 by her predecessor, Mrs

Thompson. There were no recordable developments reflecting that the main concern was to deal with the routine work.

Initially, the Bacteriology service was located at the Salmaniya laboratory. But with the increasing workload, there was a growing need for additional bench space and for the laboratory to expand. The bacteriology needs isolated space to stop any possible contamination of bacteriology culture media. Attempts to solve this problem failed. Furthermore, the gradual increase in the number of specimens sent to Salmaniya from the PHL provided additional workload on Salmaniya. As a result, non-clinical public health specimens (ie. water, food, etc) very often competed with those taken from critically ill patients from Naim and Salmaniya Hospitals.

During the 1960s, many antibiotics were introduced world-wide such as the sulphonamides, penicillines, streptomycin, tetracyclines and chloramphenicol. These drugs and many others were also added to the bacteriology section in the study of antimicrobial sensitivity pattern.

Unwin was not in good terms with Inglott who ceased the opportunity in 1971 while she was away on her annual leave and shifted the entire Bacteriology service with its supervisor, Miss Unwin to the PHL. In doing so, not only did he isolate the "Superintendent of the Laboratory" from the laboratory, but also solved the problems of contamination, duplication, bench space, and also addressed other administrative and personnel issues. Subsequently, she resigned in anger after returning from holiday and left Bahrain on the same year. The Bacteriology service remained unsupervised for a very long time and left to degenerate slowly, until, Dr Khadija Abualsaud, an Egyptian Bacteriologist was appointed in 1972, but her contribution to clinical practice was negligible. Like Unwin, Abualsaud was also isolated in the PHL and, like her husband, was involved on technical bench work done by junior technicians. She left in 1975. In the same year Dr S. Datta, an Indian Bacteriologist was recruited principally to the PHL. Datta had no experience in hospital medicine and concentrated more on PHL samples rather than the clinical specimens of Salmaniya patients. Nonetheless, he was instrumental in developing many techniques of public health concern. He left the service in 1985.

Parasitology. Inglott knew it was not practical to shift the microbiology service to the PHL and preferred to keep it under his control at the Salmaniya laboratory. This unit was also a manageable speciality both technically and administratively since he had adequate knowledge of most intestinal parasitic diseases to deal with the very few inquiries, which came from the clinicians. It was not practical to transport the urine and faecal samples to the PHL and expect the results after 2 or 3 days when the demands at Salmaniya clinics and wards to receive the results on a daily basis. Furthermore, the hospital staff did not like to transport these samples indicating such practice would culturally degrade them. The samples from the Department of Accident and Emergency located 10 meters from the Salmaniya laboratory required immediate attention at Salmaniya.

Histopathology. In 1965, Inglott established the histopathology service in Bahrain to be followed in 1968 by cytopathology. With the technical help of Mr Mohammed Hussain and Mr K. George (joined 10 June 1965, retired 1992), the

surgical specimens were processed manually and cut using Cambridge Rocking Microtome. Inglott started reporting on the specimens instead of sending the slides or the paraffin blocks to India. He managed the Histopathology service in the initial stages dealing with few surgical specimens mostly endometrial curettage, skin, breast and cervix uteri. But with increasing load, he soon realised that the Histopathology is a branch, which must be upgraded with an expertise, which, he cannot provide. The events worked in Inglott's favour. The medical authorities appointed Mr Kazi FRCS, a Pakistani surgeon, and his wife, Tahira, as a Consultant Histopathologist. Dr Tahira Kazi MRCPath took over the Histopathology and Cytopathology Section in 1969 and became the first female Consultant to join the laboratory. It was necessary then to equip the section with Shandon Automatic Tissue Processor, Rotary Microtome, and automatic Knife Sharpener, all of which are still in operation. A variety of special stains were introduced and reporting on frozen sections was also started with acquisition of a Cryostat. In 1970, Kazi left Bahrain and the Histopathology section fell back on Inglott's shoulders until an Indian Histopathologist, Dr PR Dasgupta MD, MRCPath, a retired Professor of Pathology, was appointed in 1972. At that time, the typing of laboratory correspondence including histopathology reports was carried out by the hospital secretarial typing pool and later on by Mrs. Ruth Fakhro, the secretary of the Surgical Department. In April 1972 Mrs. Sumuty Nair, an Indian lady was appointed as the first medical secretary of the laboratory until she left Bahrain in 1986.

Inglott withdrew entirely from all professional contribution to histopathology and cytopathology upon the arrival of Dasgupta and concentrated on his domains of haematology and administration.

Dasgupta was an experienced pathologist capable of handling all branches of laboratory medicine and provided professional and efficient clinicopathological interpretation in all fields including emerging immunology practice. Not only he covered Histopathology and Cytopathology but also attended to the clinical deficiencies of Dr Ahmed Rashwan and Dr Khadija Abualsaud in Biochemistry and Bacteriology respectively and also to the technician's results in Serology.

On February 1974, Dr Fayek Al-Hilli, the first Bahraini diploma holder in Histopathology returned from Egypt and joined the laboratory as the first Bahraini Senior Registrar in Pathology. He was also the first Bahraini doctor to hold this rank. He relieved Dasgupta from the burden of reporting on Histopathology specimens. Al-Hilli left during the same year to King's College Hospital Medical School, London to continue his postgraduate studies.

Blood Bank. Prior to 1958 blood specimens for cross matching were sent to Oman but when Dr Harry Black was appointed in 1958 as anaesthetist to the Government of Bahrain, he also took charge to establish the Blood Bank. This was understandable since he was the person associated with patients, surgical operations, and blood and fluid loss. With the arrival in 1963 of Inglott as a haematologist it was possible to do blood group, cross matching and direct and Indirect Coomb's tests in Bahrain.

The Blood Bank was located at the Southern Blocks of the Salmaniya Women Hospital amongst the maternity and paediatric wards about 200 m from the main laboratory. Manual technical procedures were employed in the bank and there was no automation.

In 1971, the Blood Bank came under the laboratory administration and it had two principal functions: blood donor and transfusion service. The donor service was concerned with attracting the local population to donate blood either as replacement to similar amount given to their relatives or through campaigns, advertisement, lectures, education. On the other hand, the transfusion service was concerned with analysing, storing and refrigerating the donated blood as well as cross matching the blood of donors and recipients.

But Inglott for unknown reason showed little interest in the Blood Bank. He had very little input into the transfusion service and no contribution to the donor service. He distanced himself from this laboratory unit which was part of his speciality. As a result, post-transfusion reactions and complications were rarely investigated and the donor service was assigned to the Bahrain Red Crescent Society.

There was chronic shortage of blood since transfusion was more than donation. The majority of Bahrainis feared that donating blood would 'weaken them'. Between 1950-1971, most of the donors were British military troops stationed in Bahrain and the Arabian Gulf. There were concerns that after the independence of Bahrain in 1971 and the withdrawal of foreign troops the number of blood donors will decrease. Fortunately, this did not happen for two reasons: increased health awareness and nationalist feeling after 1973 Arab-Israeli war.

Blood donors at the Blood Bank were served coffee, tea, and refreshments. Originally beer was given when the majority of donors were British troops who preferred it to other beverages, but this was stopped in 1973. Money was also given as an incentive at the rate of Bahraini Dinars 5 per donation noting that donors can only give blood once every 6 months.

Emergency(Stat) Laboratory. When the main laboratory at the Salmaniya Women Hospital was opened in 1960 leaving its original part at Naim, it was natural to develop the investigation services. Thus when the Accident and Emergency Department (under the administration of the Department of Surgery) was opened to the public, the laboratory and the Radiology departments both of which were physically located about 10 meters from the Emergency building, provided the required 24 hour service. The requested emergency laboratory tests were complete blood count, routine and microscopic examination of urine and stools, blood cross matching for transfusion, Gram stain of body fluids, and biochemical estimation of glucose, urea, amylase, electrolytes, and cardiac enzymes.

Mortuary. There was no mortuary at the Naim Hospital and dead bodies were directly transported by the general service hospital cars to the various cemeteries in Bahrain for burial. Thus when the Salmaniya Women Hospital was opened in 1958 a small Mortuary Room was built near the “Transport Section” of the Hospital to

serve Naim and Salmaniya. As a result, the Mortuary was administered by the Transport Section and looked after by the hospital drivers who increasingly found themselves involved with "dead bodies", a job they resented and disliked.

There was no post-mortem service and the function of the Salmaniya Mortuary was to receive, clean, wash and dress the dead bodies in preparation for burial[c]. This practice served the local community whose religious instruction stem from Islamic practice in that the dead must be buried soon after death and before *maghrib prayer*.

In 1973-1974, the Mortuary was recognised as part of the laboratory when the first phase of Salmaniya Medical Centre became operational. Consequently, the Mortuary was shifted from the Transport Section to the new premises.

In 1974, Hakumudin, the founder of the laboratory in 1945 became the mortuary clerk, a job which required no special skills. It was also an easy post for an old man with nearly 30 years of government service. He was happy in his detached and clean building with no interference and problems from others and remained there until he retired in 1976.

With the opening of the new phase of Salmaniya Hospital in 1974, the new mortuary contained a spacious dissection room, cold storage facilities, waiting area, washing rooms, and offices [d]. The main functions of this new Mortuary was to receive dead bodies from government hospitals in preparation for burial in Bahrain, post-mortem examination, and cold storage of bodies of foreigners in preparation for either cremation in Bahrain or embalming and then external repatriation. Before 1974, there was no cold storage service at Salmaniya, but whenever this was required then the facilities at the Awali Hospital were used.

Prior to 1973, there was no embalming service in Bahrain and whenever this was required an American mortician working at ARAMCO was invited for this job usually at a cost of BD 250. In 1974, when the Mortuary was associated with the Histopathology Section of the laboratory, the staff of this unit took interest in the embalming and began doing it themselves under the supervision of the Pathologists at remuneration rate of BD 120 shared by the hospital, technicians, and pathologists. The solutions used in the embalming were prepared and mixed locally and instead of using big syringes to inject the solutions into the venous system of the dead body, one of the technicians, Mr Abdul Aziz Ibrahim Abass Al Emadi (July 1970, still in government service as Major, Forensic Section, Criminal Investigation Directorate, Ministry of Interior) invented a pumping apparatus to directly inject the fluid at a great speed and pressure thus saving time and ensuring that sufficient fluid was injected.

Post-mortem (PM) Examination. In 1967, Inglott started PM examination mostly on police cases and Al Hilli and Dasgupta continued this in the 1970s. These specialists were hospital pathologists whose experience and training covered primarily clinical and surgical pathology and were capable to do forensic PM as secondary or related interest. However, they disliked this job and felt uncomfortable to manage police cases because of their concern that they may miss an "evidence" in a field, which is not their speciality. Furthermore, the police work

added more responsibility with no remuneration. They frequently appeared in courts to testify and were involved in a large volume of paper work including translation from English to Arabic, demonstrations and drawings. Even legal coverage at the courts was not provided in the events when their views were challenged and contested.

The Nucleus of Forensic Science Laboratory. In 1973, Mr Mohammed Abdul Rasool Al Khayat, a senior technician, became more involved with specimens referred from the Police. Accordingly, he pioneered the foundation of "Forensic Science Laboratory" within the establishment of Salmaniya. Jenkins in 1961 established Toxicology practice while Al Khayat in 1973 added the forensic application.

The procedures performed include Beam Colour test for *Hashish* (ie. Cannabis), Gas Method for alcohol, urine pregnancy test, examination of blood stains for the determination of blood groups, and the examination of seminal stains. Opium was also tested. In 1975, Al Khayat was transferred to the Ministry of Interior where he established the "Forensic Science Laboratory" of the "Criminal Investigation Directorate".

Training. Realising the growing need to expand the laboratory services which require additional technical staff, one year laboratory training program was started by Inglott and aimed at "Bahrainization", a step unheard of at that time and unexpected from an expatriate. This program also laid the foundation of the laboratory training course that was soon to develop into a larger project notably the establishment of the College of Health Sciences in 1976. It is worth noting here that in 1971 there were 22 expatriate laboratory technicians and 41 Bahrain technicians of whom 10 were trainee.

In 1968, the health authorities sent Mr Mohammed Abdul Rasool Al Khayat and Mr Ali Ahmed Al Sharqawi (August 1967, later resigned, now a known writer) to Baghdad, Iraq to specialise in medical laboratory sciences. This was the first government scholarship to obtain high certification in this field.

Further Development of Laboratory Specialities. It was essential to develop the laboratory specialities along the needs of the hospital and the country. For example, when there was a need for a histopathology service not only a special bench space and necessary equipment were made available but also qualified and experienced pathologists were recruited for this purpose. On the other hand, since the blood bank was handling most of the serological tests, it was not practical to establish a "Serology Unit", but to include all these tests under the "Blood Bank Section".

Accordingly, four major clinical specialities were recognised: haematology, histopathology, biochemistry, and microbiology. This organisation of the laboratory services was the natural development in a general hospital like the Salmaniya Women Hospital and was unlike the set up of any other specialist hospital (with specialist laboratory) or a teaching hospital (with academic departments).

The events, which led to establish the above four specialities, cannot be attributed entirely to Inglott but he was instrumental in steering them. The changes for the

development were gradual reaching the peak in 1968 (i.e. five years after joining the laboratory service) with the establishment of histopathology and cytopathology unit and the introduction of many automated techniques in the Haematology and Biochemistry sections.

The Service Contract of Inglott. On August 1974, Inglott was notified that his service was no longer required. He left Bahrain in February 1975 taking another senior influential post in Oman supervising all the laboratories in the Sultanate.

The reasons for not renewing Inglott's service contract were related to his inability to keep the harmony between three groups of technicians in view of the political life in Bahrain between 1965-1975[e]. One was a highly influential and outspoken university graduates holding BSc degree and appointed as technicians considered that their qualification give them the merits not only to replace non-Bahraini counterparts but also to take charge of the laboratory sections and units including the post of Chief Technician. This group had no knowledge or experience neither in theory nor practice of clinical laboratory techniques not to mention human biology in the first place. The second group was a non-university graduates with only High School *Tawjihia* Certificate considered that their years of laboratory service and on-job experience give them the same merits. This group hid behind the coverage of the "labour committees", used traditional "trade union tactics" to deliver their influence, and received support from many government and private sector employees. Their influence was therefore feared by the first group as well as the government and private authorities. At various times, even Inglott's job as the Head of the Department was questioned and claimed since members of both groups believed that with automation in nearly all section of the laboratory they could administer the department with no need to overspend on a "doctor who does not treat patients and works on the bench like any technician". The third group like in any similar circumstances was opportunistics whose alliance was determined by the event of the day.

Inglott had no hand in the creation of the above groups, but was dragged into local conflicts which were not his own. To be fair the health authorities should have cautioned him to distance himself rather than holding him responsible. On the other hand, the authorities may have wanted an escape-goat to satisfy all the groups and opted for Inglott.

Communicable Diseases and the Emergence of Chest Hospital Laboratory

Communicable diseases, such as, dysentery, bubonic plaque, cholera, malaria, tuberculosis, etc. were common in Bahrain since 1903. The task to control their spread was divided between the health authorities and the Municipality[2,3]. Accordingly, a quarantine was opened in Muharraq to isolate patients with leprosy and cholera and an isolation hospital near the police fort in Manama was opened for patients with tuberculosis, gonorrheal urethritis, syphilis, leprosy and dysentery. In the Manama centre, laboratory workers from the nearby Naim hospital use to visit the patient weekly to do ESR and other laboratory tests leaving the Muharraq quarantine unsupervised and with no diagnostic or follow up services.

Pulmonary tuberculosis was common in Bahrain and there was a need, as part of the treatment at that time, to isolate the patient into a clean agricultural environment (sanatorium) where they can breathe fresh air to promote "healing of the disease". The isolation also served a preventive measure to control the spread of tuberculosis among worried communities continuously rejecting the integration of these patients for fear of possible transmission of this "fatal" disease. Accordingly, the health authorities had to find an appropriate place near Manama for the isolation of these patients.

At the same time, the psychiatric patients, another group of disadvantaged patients equally rejected by the community for fear of being violent and for the misconception of spreading "bad spirit", also required isolation. Luckily the isolation place for this group (the "House of Mad People") was opened in 1937 into an uninhabited agricultural area with large playground at the outskirts of Manama where the present Psychiatric Hospital stands [3]. The Municipality was responsible for the "House" whereas tuberculous patients were the responsibility of the health authorities.

To serve the combined needs of isolation of both groups of patients, who required long term hospitalisation, the Hospital for Chest Diseases was opened in 1951 near the "House" and this soon developed into a sanatorium, a millstone achievement in the records of heath service in Bahrain since it was the first such institution in the Arabian Gulf and many of its patients were from neighbouring countries as well as from Yemen and East Africa.

In 1961, Dr Mohammed Bader Al-Huda, a Pakistani doctor, was appointed as the first Chest Physician in Bahrain and was instrumental in the development of the Chest Hospital and its laboratory services[f]. He helped to establish a small laboratory to do routine laboratory investigations such as full blood count, ESR, urine test, sputum examination and ZN stain for AFB. Specimens for other laboratory investigations were sent to the Naim and Salmaniya Woman Hospitals. He introduced AFB bacteriological culture, a procedure which took more than 10 weeks to be completed, very often with no growth identified in the culture media thus resulting in many false-negative results and prolonged hospitalisation and treatment of patients. It is now clear that these errors are due to chemical, biological and molecular structure of the *Tubercle bacillus*, which became clear in the 1980s. Two more technicians have joined the chest hospital laboratory in 1959, Mr P. Devaraj and Ibrahim Al Jeeb.

References

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2. Alkhalifa AK. *Tarikh al khadamat al tebia fe albahrain* 1925-1965.The Third Annual Book. The Historical Documents Centre, Bahrain, 1984:79-110 [In Arabic].
3. Almuraikhi K. *Lamahat men tarikh albahrain*. Government Press, Bahrain, 1987:191-206 [In Arabic].

Endnotes

The first date after the name of the persons listed below was the date of joining the government service. Additional information such as current status and last post held also given.

i. Mr Jaffer Shaikh Abdulla Mohammed Saleh (1966, later became Specialist Biochemist and still in government service, Mr Mustafa Al Qassab, Mr Shaker Eqab (March 1967, later resigned, now a businessman), Mr Rashid Essa (July 1967), Mr Mahdi Mohammed Hassan (October 1967), Mr Abdulla Aman (November 1967, on 16.04. 86 transferred to Bahrain Defence Force Hospital, still in government service), Miss Khadija Asadi (December 1967), Mr Mohammed Hassan Abass (February 1968), Miss Sakina Toorani (April 1968), Mr Omar Khalifa Al Shamlan (April 1969 - died in tragic car accident in Saudi Arabia in 1986),Mr Mohammed Saleh Abdulatif (July 1968), Mr Mahmood Aldailami (August 1968), Mr Mohammed Jabber Al Fardan (October 1968), Miss Shaikha Alzayani (October 1968), Mr Ahmed Saleh (July 1969), Mr Jassim Rashid Najim (July 1969), Mr Ahmed Saad (August 1969), Miss Maha Al-Khalidi (01.01.70, later became Chief Executive Officer of Salmaniya Medical Centre, still in government service), Mr Saeed Mirza Abbass (May 1970 retired in 2002), Miss Ghaniya Jaffer Zabar (July 1970), Mr Hussain Ali Mahdi (July 1970), Mr Reda Sadiq Hussain (July 1970), Mr Reda Abass Senat (August 1970), Mr Alawi Sayed Talib 1.09.1970), Mr. Rashid Mohammed Abdulla Al Suwaidi (01.10.70, still in government service as Chief Medical Technologist), Mr Ali Mahdi Alsamahiji (November 1970), Mr Majeed Mohammed Abdulla (November 1970), Mr Sayed Abdulrasool (April 1971), Miss Thuria Majeed Omran (April 1971), Mr Hamad Mansoor (15. 9.1971), Miss Raja Kadoom Alasfoor (13.10.1971), Mr Mohammed Ali Mahdi, Adnan Hassani (February 1972, transferred to Bahrain Defence Force Hospital in 1980, still in government service), Miss Hanan Hassan Al Saad (15.12.73 still in laboratory service), Miss Najat Saleh Adnan, Miss Latifa Mohammed Sharida, Mr Hussain Abdulla Khalfan (now in private sector). Other Bahraini technicians who served between 1963-1975 include Miss Eman Al Shitty, Miss Fathia Mohammed Hassan, Miss Fatima Kamal, Miss Fatima Rashid Amin, Miss Iftikhar Al Aradi, Mr Jaffer Al Qassab, Miss Najat Al Tajer, Miss Noorjahan Hassan, Miss Sabah Alzayani, Mrs Sakina Zamani (retired 1993), Mrs Sahera Mutabanna, Miss Zahra Shafei.

ii. Mr K.A. Issac Newton (29.05.59), Mrs Newton (July 1959), Mr S.A. Kuraishy (14.04.1961), Miss Rati Bai October 1963), Mr. K.C. Abraham (20.12.1963), Miss Anima Thomas (May 1964), Mr M.C. Sunderaj (21.05.64), Mr P.K. Thomas (03.08.64), Mrs. Kurian (1964), Miss Mercy John (March 1965), Mrs Rosalin Kuruvilla (April 1965), Mr C.P. Thomas (09.08.65), Mr P.O.J. Joseph (03.11.65), Miss Achiamma (November 1965), Mrs G. Philips (January 1969), S. Jesudass (July 1969), Mr P.T. Varghese (29.02.75 left October 1990).

iii. Post-mortem (PM) examination was not favoured by the public because of the misconception that it is a form of mutilation and thus against Islamic practice. Regrettably this delusion still prevail despite the scientific values of PM examination in hospital and research practice noting that Islam encourages the acquisition and development of knowledge as will as research of all kinds. The

social and cultural unacceptability of PM examination is however not unique to Bahrain but common in many countries in the Middle East.

iv. Cold storage preserves dead bodies and prevents decomposition.

v. When Inglott joined government service in 1963, there were no major developments in the political scene in Bahrain apart from occasional student demonstrations. But in 1965 an uprising took place due primarily to the dismissal of a number of BAPCO employees and this spread to involve many other companies and government departments. The events which followed lead to the formation of "labour committees" elected by the employees demanding administrative, economic and social reforms. Then came the declaration of independence in 1971 and the formation of the democratically elected National Council.

vi. Dr Huda became a naturalised Bahraini citizen in 1976 and died in Bahrain in September 2002.

Countries, Part 1 - medical District Laboratory Practice in Tropical Countries Part 1, Second Edition Elsevierâ€™s Medical Laboratory Science Examination Review. 407 PagesÂ·2014Â·6.84 MBÂ·7,515 DownloadsÂ·New! Elsevier's Medical Laboratory Science Examination Review is a brand-new resource that offers all Calculations for Molecular Biology and Biotechnology: A Guide to Mathematics in the Laboratory. 319 PagesÂ·2003Â·14.23 MBÂ·998 DownloadsÂ·New! for Molecular Biology and Biotechnology: A Guide to Mathematics in the Laboratory Frank H. Stephenson Quick Review Cards for Medical Laboratory Science. 619 PagesÂ·2014Â·4.02 MBÂ·7,434 Downloads. The aim is to provide medical laboratory services for practicing private clinicians and hospitals and polyclinics. The laboratory performs a wide range of laboratory tests and all the fields of pathology including histopathology and cytology. Central medical laboratory was established in 1991 under a Ministry of Health license by Dr Fayek Al Hilli, Consultant Histopathologist and Dr Abdul Aziz Abdulla Yousif, Consultant Microbiologist. The aim is to provide medical laboratory services for practicing private clinicians and hospitals and polyclinics. The laboratory performs a wide range of labor... Bahrain Medical Lab is one of the best human wellness centers in Middle East. We provide top quality healthcare facilities and clinical laboratory tests in Salmaniya at your budget.Â We provide a full range of medical testing for patients. Toggle menu. Skip to content. Home. Appointment. Medical tests. Covid19 Test. Biochemistry. Cancer Markers. Medical Laboratory Services, Sliema, Malta. 2,566 likes Â· 9 talking about this Â· 6 were here. Medical Laboratory Services has been a pioneering spirit in...Â See more of Medical Laboratory Services on Facebook. Log In. or. Create New Account. See more of Medical Laboratory Services on Facebook. Log In. Forgot account? or. Create New Account. Not Now. Medical Laboratory Services. Medical Lab in Sliema, Malta. 5. 5 out of 5 stars. Always Open. CommunitySee All. The history of the National Research Nuclear University MEPhI (Moscow Engineering Physics Institute) began with the foundation in 1942 of the Moscow Mechanical Institute of Ammunition. The leading Russian nuclear university MEPhI was later established there and top Soviet scientists, including the head of the Soviet atomic project Igor Kurchatov, played a part in its development and formation. Six Nobel Prize winners have worked at MEPhI over the course of its history â€“ Nikolay Basov, Andrei Sakharov, Nikolay Semenov, Igor Tamm, Ilya Frank and Pavel Cherenkov.Â Internships at distinguished academic centres and laboratories around the world. Double degree programmes. International academic mobility programmes.