A.I.I.M.S Technologist's e- Newsletter

Professor-In-Charge, Computer Facility, A.I.I.M.S
Dr Deepak Agrawal

It gives me great pleasure to announce the launch of 3rd edition of Technologists newsletter . This newsletter has become an important platform to showcase the hard work and talents of our technologists. This will improve awareness and interaction amongst the technologists regarding the various activities and changes being undertaken at AIIMS. You all will agree that unless each one of us feels a sense of belonging to this institution, we will not be able to constructively contribute to its growth, developments and improvement in patient care, which ultimately would work towards enhancement of our growth and career. Our aim is to make it a quarterly newsletter and this depends on your active participation in contributing articles and other content for future newsletters .Your contributions would create an impact in the minds of the readers, by way of providing larger visibility and dimension to technologists.

Happy Reading.

Dr Deepak Agrawal,
Professor–In –Charge ,Computer Facility , AIIMS

UPCOMING EVENTS (17th-23rd July,2017)

- National Medical Laboratory Professionals Week (NMLPW)
- Eye Donation Awareness Camp on17th July, 2017, Near Eye casualty Reception, Dr. R. P. Centre, A.I.IM.S.
- Blood Donation Camp on 18th July, 2017, Near Jawaharlal Nehru Auditorium, A.I.I.M.S.

A Glance of National Medical Laboratory Professionals' Week 17th -23rd July, 2017

National Medical Laboratory Professionals Week (NMLPW) is an annual celebration of Medical Laboratory Professionals, who play a vital role in every aspect of health care. It provides medical laboratory personnel to celebrate their professionalism and be recognized for their efforts. At the same time it informs and educates medical colleagues and the public about the medical laboratory and the impact of having these dedicated skilled professionals on the overall patient care. Since medical laboratory technologists often work behind the scenes, few people know much about the critical testing they perform every day.

This celebration improves the individual practitioner's sense of self-worth. As the various professional groups within laboratory practice work together on this project, the sense of unity is reinforced. This year NMLPW has

Eye Donation Awareness Camp on17th July, 2017, Near Eye casualty Reception, Dr. R.P.Centre, A.I.IM.S.

Blood Donation Camp on 18th July, 2017, Near Jawaharlal Nehru Auditorium, A.I.IM.S.

NMLPW is time to rock for all Medical Laboratory Technologists.

"Everyone needs a laboratory, because amazing things come from experimentation."

Ms Saroj Singh

E-OFFICE

As a part of digitization, AIIMS has started using e-office to route all files and leave forms from the generator till the administrative end and vice versa through the site aiims.eoffice.gov.in. The vision of e-Office is to achieve a simplified, responsive, effective and transparent working of all government offices.

Benefits

- Enhance transparency – files can be tracked and their status is known to all at all times,
- Increase accountability – the responsibility of quality and speed of decision making is easier to monitor,
- Assure data security and data integrity,
- Promote innovation by releasing staff energy and time from unproductive procedures,

Promote greater collaboration in the work place and effective knowledge management

The computer facility in AIIMS has created government e-mail id and password for all official users of e-office with the help of NIS team members. Training has been given to all the official users by the Computer Facility with coordination of NIS. e-office is successfully implemented in AIIMS as well as all centres including nursing section, establishment section, engineering section ,finance section and no routine physical file or request letter without being routed through e-office is received in the office of Director, Dean, Store Officers, Accounts Officers, Administrative Officers, Sr. AO, Chief Administrative Officers, FA,DDA, MS,AIIMS.

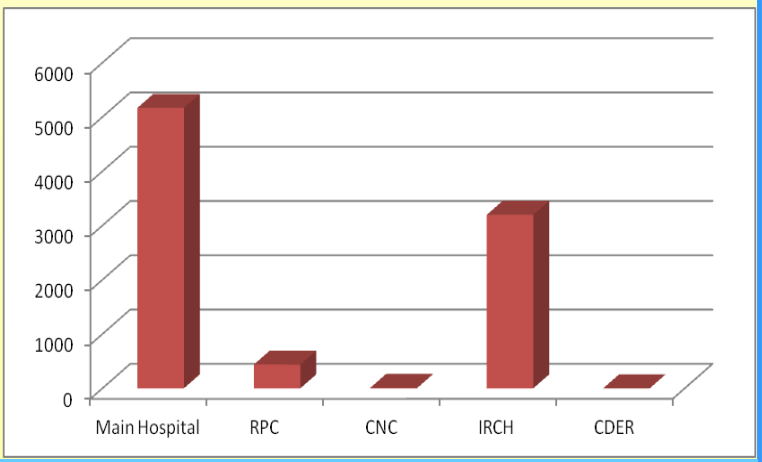
By implementing e-office in AIIMS, better and efficient file tracking movement system is available. By using this software the technologist can track their file status in office .

100% Compliance Of in CNC, Main AIIMS, CDER and IRCH.

ONLINE EXEMPTION PROCESS

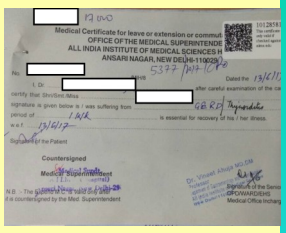
Online exemption process was made live along with the billing module for replacing the paper work involved in the exemption process and also to make it more transparent and error free. Different patient categories like JSSK, MTP etc which had to be completely exempted throughout the particular stay were identified and configured in the system. The online exemption process has enabled reinforcement of exemption polices and made the system more transparent. The technologists can use this information to guide patients for exemption process.

The workflow is as follows:The concerned faculty or the exempting authority will sign the exemption paper/ documents and online exemption of the service charges are done by the MSSOs of the concerned departments. All the supporting documents such as BPL card, signed forms etc are verified and uploaded for future reference.The exemption done by MSSO reflected during the billing process of the patient and MIS of the same can be retrieved at a later stage.



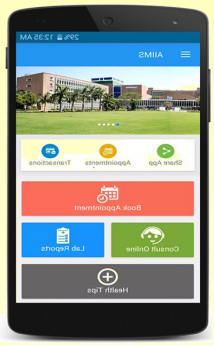
Number of patients exempted online in various centres- till (6/6/2017)

QR CODE IN MEDICAL AND FITNESS CERTIFICATE



Using a QR code for verification of medical and fitness certificates can significantly decrease the increasing incidence of people submitting fake certificates to employers and even in courts which leads to legal complications.
Under the new system, all medical and fitness certificates will have a QR code. The recipient can scan it to reach the AIIMS website and verify whether the certificate is authentic or not .
Once he medical/ fitness certificate is signed by the doctor, its is submitted in the CRO office in RAK OPD.
Using a software program , a UHID based QR code will be generated for each patient from the CRO Room in RAK OPD. QR code-based medical identification is put in medical and fitness certificate which is issued from AIIMS. This code can be read using a QR code scanner which will verify the certificate . QR Code system ensures the authenticity of medical certificate issued by the institution in turn efficiency of the system.

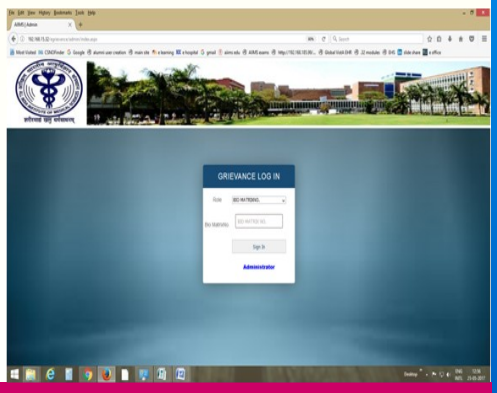
AIIMS APP



AIIMS appointment app, a new intervention in digital AIIMS was launched in June 2017. Now AIIMS appointment app can be downloaded from Google play store .The link to download the AIIMS appointment app is given in http:// www.aiims.edu. One can book both new and follow up appointments through this app using an active phone number. A UHID will be generated for new patients through ORS and he can login to the app using UHID and phone number. Once logged in one can select the concerned department and date as per availability. Once appointment is booked, a confirmation SMS is sent to the registered phone number. Patients can also view lab reports and can also upload their own reports through the site. Besides one can book video consultation with doctor using the app.

E-COMPLAINT MODULE

The present manual system of grievance redressal for any grievances pertaining to civil/patient related etc had many flaws where a compliant registered gets resolved only at its own pace with no provision left for the complainant to speed up the process rather than repeatedly phoning up the concerned persons. A tracking system where the status of the complaint can be checked by the complainant was a dire need, which in turn could improve the efficiency of the whole process
Grievance module is an online platform which eases the process of grievance redressal within the institute and improves transparency of the whole process. All complaints like civil, welfare, engineering etc are registered online and a notification is sent to the concerned stakeholders and the status of the complaints can be tracked.
This module is mainly for administrators of all levels in all areas. It is easily accessible through the intranet portal where a link to the grievance module is given. Each user will have to login with their unique login ID.
A complaint is registered and a complaint number is auto generated and a notification is send through email and SMS to the concerned officer according to the category of the registered complaint.
This module also provides a provision for the complainant to track the action initiated against a particular complaint.
Another highlight of this system is that the complaint remains pending unless it is closed by the complainant. So once the complaint is rectified the complainant closes the complaint and it gets deleted from the pending list.



Medical Laboratory Technologist Horizon of work

ERYTHROBLASTOSIS FETALIS (HAEMOLYTIC DISEASE OF NEW BORN)

Erythroblastosis Fetalis (EF) is a hemolytic anemia in the fetus or neonate caused by transplacental transmission of maternal antibodies of fetal red blood cells (RBCs). The disorder usually results from incompatibility between maternal and fetal blood groups, often RhoD antigens.The adult human body is home of RBCs or erythrocytes. The blood cell carries oxygen, iron & many other nutrients to the appropriate places in the body. When a woman is pregnant, it is possible that her baby's blood type will be incompatible with her own. This can cause a condition known as Erythroblastosis fetalis, where the mother's white blood cells (WBCs) attack the baby's RBCs as they would any foreign body

CAUSES:
Both are associated with blood type. Any blood can be either Rh positive or Rh negative.

1.. Rh incompatibility occurs when an Rh negative mother is impregnated by Rh positive father. The result can be Rh positive baby. In such cases, the baby's Rh antigens will be perceived as foreign invaders. The mother's WBCs attack the baby's as a protective mechanism. If the mother is pregnant with her first baby, Rh Incompatibility is not as much as concern. However, when the Rh positive child is born, the mother's body creates antibodies against Rh factor, which will attack the blood cells if she becomes pregnant with another Rh positive baby.
2. Another type of Hemolytic Disease of Newborn (HDN) is ABO type of incompatibility. In ABO hemolytic disease of new born (ABO HDN) maternal IgG antibodies with specificity for the ABO blood group system pass through placenta to the fetal circulation where they can cause hemolysis. It occurs mainly in mothers with blood group O, because they can produce enough IgG antibodies to cause hemolysis. It is very uncommon type of HDN.

DIAGNOSIS:
EF can be predicted before birth by determining the mother's blood type. If she is Rh negative & the father's blood is Rh positive, the mother's blood will be checked for antibodies against Rh factor.

LABORATORY IDENTIFICATION :
The clinical laboratory assumes the paramount role of supplying accurate data to the attending physician for the diagnosis, treatment and prevention of HDN. Maternal prenatal testing identifies patients at risk for Rh-HDN. The antibody titre is of primary value in assessing patientstients as candidates for Amniocentisis. Amniotic fluid analysis provides an assessment of fetal prognosis in HDN and also an assessment of gestational age, lung maturity, placental function. In severe HDN amniotic fluid analysis can indicate the need of intrauterine transfusion. Postnatal laboratory studies can confirm the suspected diagnosis of HDN, identify those neonates at risk of developing kernicturus, and provide the physician with information pertaining to the treatment of HDN.

Finally, prenatal and postnatal laboratory testing identifies those females eligible for Rh-immune globulin therapy to prevent HDN in subsequent pregnancies.

PREVENTOIN & TREATMENT:

A preventive treatment known as RhoGAM or Rh immunoglobulin, can reduce the mother's reaction to the baby's Rh positive blood cells. This is administrated around 28 week of pregnancy. The shot is administered again at least 72 hours after birth if baby is Rh positive.

If baby experience Erythroblastosis Fetalis in womb, they may be given in-trauterine blood transfusions to reduce anemia. Other procedures also can be done like amniocentesis, Fetal Umbilical cord blood sampling, Ultrasound etc.

Mrs Deepa Saini,
MLTechnologist, Dr R.P.Centre

COST OF QUALITY VS COST OF POOR QUALITY

The Cost of Quality (COQ) was first developed by Dr. J.M. Juran in 1950 and he made his first Quality Control handbook. The concept was that the hidden costs that we can't see but we can recover. When a Medical Laboratory Technologist or the Lab. Manager thinks about the costs in a medical Lab , he thinks about the multiple expenses like accreditation fee, QC, proficiency testing and acting costs expenses etc but rarely considers the time and cost spent. When a problem or a mistake occurs during any step of the test performed, it very difficult to find the error in the test. Then re - running the samples, adding the standards, contacting the doctor treating the patient are some of the further steps which are generally taken to find out the errors in the processing of the samples . Therefore, when we evaluate or quantify the costs of quality, it is really important to asses the potential and realistic costs associated with poor quality.

The Quality Costs have been divided into several categories .Most approved categories are **P.A.F** :-

P - Prevention - costs include planning , preventive maintenance , work process planing and initial competency assessment.

A - Appraisal - includes the cost of calibration of instruments, Quality control, proficiency testing and accreditation .

F- Failure - includes external and internal failure costs.

Apart from P.A.F there are many other factors which include wastage of time, effort, energy and money .

In May of the year 2014 the Clinical and Laboratory Standards Institute (CLIS) publishes a report titled "Understanding The Quality in Laboratory (QMS20-R)".This report provides an overview of the different types of quality costs and held laboratories to identify quality costs and eliminate unnecessary expenses .

CONCLUSION

It is a false belief that maintaining quality will result in higher cost Laboratory needs to use appraisal tools to identify and fix the defects before the delivery of results to the physicians and patients So, by following quality control standards one can reduce failure .

Ms , Monica Tiwari,
MLTechnologist,
Dept of Hematology

ABSTRACTS

B– cell lymphocytes vs Hematogones by flow cytometry

Hematogones are normal maturing B lymphoid precursors whose morphology and immunophenotype are similar to the blasts found in ALL. These cells are more predominantly found in infants and pediatric bone marrow aspirates, their percentage decreases with increase in age. They are often confused with leukemic blasts.

Hematogones have a characteristic property of CD38++, CD10+, D19+, CD20- or dim, and a cluster often found dimmer and smaller on the CD45/log side scatter display. The CD10, CD38, CD45 combination can be useful.

The earliest recognizable B-lineage precursors expresses CD34 in combination with CD38, CD19, high levels of CD10 (bright), and low levels of CD22 and lacking CD20. These cells progress to the next stages by down-regulating CD34 completely and CD10 partially, prior to the progressive up-regulation of CD20. CD22 levels are also increased slightly as CD20 is up-regulated. Finally, CD10 is down-regulated completely, CD38 partially, and CD22 upgraded to high intensity. The last stage, in which CD10 is completely down-regulated, is considered a mature stage of B-cell

Hematogones are characterized by very low side scatter (SSC) and dimmer expression of CD45 when compared to lymphocytes. They have variable expression of CD20; are positive for CD10 and partially for CD34.

Dr Sandeep Rai
MLTechnologist, Dr BRAIRCH

Coccidian intestinal parasites among immunocompetent children presenting with diarrhea:

Original Article Background: Diarrhoea is an important cause of both morbidity and mortality among children in India. Coccidian parasitic infections are an important cause of diarrhea in immunocompromised patients, but their investigations are rarely sought by the treating physicians in seemingly immunocompetent children. This study was aimed to find the incidence rate of coccidian parasites in all children presented with diarrhoea, irrespective of their immune status.

Materials and Methods: Between December 2015 and May 2016, all fecal samples from children aged between 0 and 15 years presenting with diarrhoea, irrespective of their immune status, were examined using conventional wet mount and modified acid-fast staining. At the end of the study, records of their clinical history and immune status including HIV positivity were evaluated. Findings of wet-mount and modified acid-fast stained smear microscopy were analyzed in relation with clinical details.

Results: During the study, samples from 200 children (single sample) with diarrhea were processed. Their mean age was 5.7 ± 3.3 years (range 4–168 months). Seventeen out of 200 (8.5%) samples were positive for acid-fast coccidian parasites. Eight (4%) samples were found to be positive for Cryptosporidium hominis, while 5 (2.5%) were positive for Cyclospora cayetonensis and 4 (2%) samples for Isospora belli oocysts. Half (50%) of the children who were tested positive for Cryptosporidium and Cyclospora were found to be otherwise immunocompetent. However, all four cases of Isosporiasis were immunocompromised patients.

Conclusion: We highlight the high incidence of coccidian parasites among immunocompetent children with diarrhea. The clinicians need to be aware that coccidian parasites are a potential cause of childhood diarrhoea even in immunocompetent children.

Ms Omvati Vats,
TO, Dept .of Clinical Microbiology,

SCIENCE CORNER

Cyto - histo pathological correlation in various ophthalmic disorders

Cytopathology is a non-invasive technique in which early diagnosis is made whereas histopathology is a gold standard technique. Patient has to undergo invasive procedure under anesthesia, while the reports are available after 36 – 48hours. Sometimes, delay of two days in getting histopathology reports can occur, so the present study was planned to find out the utility of various cytological techniques & correlate them with histopathology. A retrospective study was carried out over a period of one year (2016) at the department of Ocular Pathology of Dr. R P Centre, AIIMS .Slides were reviewed by two pathologists of Dr.R P Centre, AIIMS. A total no.of 34 cases in which FNAC was done in 15 cases, Impression cytology in 14 cases and Cytospinin 5 cases. These were correlated with histopathological diagnosis. The FNAC and Cytospin smears were stained by Papanicolaou(PAP) and Giemsa(MGG) method. Impression cytology smears and histopathology sections were stained by routine hematoxylin and eosin stain.11 cases were reported as benign and 23 were malignant on histopathology.15 cases were reported as benign and 19 as malignant in cytology. Thus, Specificity was 100% and sensitivity was 85%.Cytology is a sensitive non-invasive technique ,it is safe and inexpensive method. It provides minimal discomfort to the patient without anesthesia .Cytology is a useful technique and treatment can be started based on the cytology reports. **However, in view of 85% sensitivity, cases negative for malignancy on cytology should be managed based on clinical judgment.**

Ms Neelima Sharma
T O, Dr R.P Centre

Prognostic importance of HLA DRβ1 gene and PTPN22 gene polymorphism in rheumatoid arthritis

MHC or HLA gene and some of the non-MHC genes have been claimed to be associated with genetic predisposition in RA. Most of the studies are from Western countries. Few studies are from India which has heterogeneous population with different genetic background and culture.

Objective: Aim of the present study was to find the prevalence of HLA DRβ1 alleles and PTPN 22 gene SNP in RA patients and to see their correlation with laboratory and clinical parameters.

Method: We studied 150 cases of RA and 100 healthy controls. Diagnosis of RA was done by revised ACR criteria of Arnett (1987) and ACR/ EULAR criteria[16]. HLA DRβ1 typing was done by low resolution SSP PCR and autoantibodies (RF, anti-CCP2 Ab, ANA, dsDNA, ACLA) were done by ELISA.

Result: In RA, the most common HLA DRβ1 allele was DRβ1*04 (23.3%) followed by DRβ1*10 (20.7%), DRβ1*03 (9.3%) and DRβ1*01 (8.7%). Contrary to this, some alleles of DRβ1 were significantly less expressed in RA like DRβ1*07 (P= 0.00) and DRβ1*14 (P= 0.010). DRβ1*04 positive patients had significantly more RF positivity while in DRβ1*10 positive patients had increased RF and anti-CCP2 Ab. DRβ1*04 positive cases had positive correlation with score of ACR/ EULAR. DRβ1*10 positive patients had negative correlation with the age of the RA patients. These patients have shown early onset of disease.PTPN22 C1858T SNP was found in only 4% cases of RA. No correlation was established with PTPN 22 SNP positivity and clinical parameters.

Conclusion: In our study RA patients have less DRβ1*04 positivity as compared to the Western literature. In our area, DRβ1*10 is more common than DRβ1*01. HLA DRβ1*07 and *14 are found to be protective for RA. PTPN 22 SNP have not shown any diagnostic or prognostic significance while HLA DRβ1 typing in RA may be an important prognostic marker.

Mr Pramod Verma, MLT,
Dr BRAIRCH

AWARDS & ACCOLADES

AIIMS SHOOTING BALL TEAM
36th National Shooting Ball Championship 2017 held at Rajasthan

Mr Dinesh Tomar, Technical Officer, Deptt of Anatomy, AIIMS & Mr Sanjeev, MLT, Deptt of Pharmacology, AIIMS
Are active members of AIIMS Shooting ball team and has represented Team AIIMS many times at National Levels.
Mr Sanjeev has owned the positions of Captain and Vice-Captain many times

Microbiology Unit, Laboratory Medicine, JPNATC, AIIMS actively participated in Hand Hygiene Week Celebration and got third prize in Rangoli making competition

Ram Avtar, MLT, National Eye Bank, Dr R P Centre, AIIMS Won **Third Prize in Shot Put Throw at ABLAZE 2017** (An inter college Sports event organised by Optometry Students' Association, AIIMS)

Participated and qualified in **Race held at Ambedkar Stadium**, Delhi to get selected in AIIMS Football Team.

Participated in **Race during ABLAZE 2017** held at AIIMS

APPRECIATION FOR ORGANIZATION OF ICMLS-2017

Mr Sumit Singh ,
MLT, MICROBIOLOGY, AIIMS

Mr Irshad Ahmed,
MLT,AIIMS

Mr Santosh Balooni,
MLT, AIIMS

EVENTS & CELEBRATION

Cultural Event at ICMLS-2017

Deepa Saini, Shama Parveen ,Uma Pali, Shrity Biswas, Neelam Singh (MLTs AIIMS) along with Medical Laboratory Technologists of ESI Delhi and LHMC presented a musical Saraswati Vandana at Inaugration Ceremony of ICMLS 2017

Preeti Sharma (JRF, AIIMS), Gajey Bhandari, Ram Avtar, Indresh Singh, Preety Rana(MLTs AIIMS) gave a rocking BHANGRA group performance at cultural evening .

Ms Vidushi Uniyal (MLT, Hematology AIIMS) gave a solo dance and Ms Shama Parveen (MLT, CNC AIIMS) sung a melody song as SOLOIST at cultural evening performance at ICMLS 2017.

Group Dance Performance ***CHAM CHAM*** was presented by MLTs - Shakti Sharma, Vidushi Uniyal, Deepa Saini , Gajey Bhandari and Indresh Singh

Hand Hygiene Week Celebration (5th May, 2017) held at JPNATC, AIIMS

TECHNOLOGISTS' PARTICIPATION IN AIIMS PREMIER LEAGUE 2017 AND ABLAZE 2017

Technologist's e-

ART AND GALLERY

This photo depicting amazing Natural Beauty is captured by Mr Gajey Singh, MLT, Deptt. Of Nephrology *Using his smart phone during the journey from Manali to Leh.*

हर मोड़ पर रौशनी के गुल खिला देना
अँधेरा गर दिख जाए तो दिए जला देना
गम न आएगा भूलकर भी दरवाजे तक तेरे
बस पोंछ कर आंसू किसी के तू मुस्कुरा देना

व्रत बनाये रखना रमजान बनाये रखना
गीता बनाये रखना कुरान बनाये रखना
ईद भी अपनी और दिवाली भी अपनी
इस आदमी को मौला तू इंसान बनाये रखना

Mr Dinesh Tomar

TO

Anatomy

SKETCH BY MR PRAMOD KUMAR ,MLT, BRAIRCH

This LOGO dedicated to National Medical laboratory Professionals, Week is designed and prepared by

Ms Leena, MLT, Deptt of Haematology

Achievements

Mr Anand Mandia Medical Laboratory Technologist Blood Bank JPNATC is the representative of JPNATC AIIMS in Team Ministry of Health and leads the team as CAPTAIN and has earned all over championship of Power Lifting, Bench Press and Body Building .

He has won:

- **SILVER Medal in Delhi State Power Lifting Bench-press Championship (160Kg weight lift)**
- **SILVER Medal in Inter Ministry Power Lifting Championship 2016-17(570 Kg weight lift)**
- **GOLD Medal in Inter Ministry Bench-press Championship**
- **SILVER Medal in Inter Ministry Body Building Championship.**
- **SILVER Medal in National Power Lifting Bench-press Championship 2016-17 at Coimbatore, Tamil Nadu.**
- **GOLD Medal in National Power Lifting Classic Championship 2016-17 at Jammu.**
- **GOLD Medal in National Power Lifting DEADLIFT Championship 2016-17 at Jammu (210 Kg Weight Lift).**

Mr Indresh Singh, MLT , Lab Oncology , IRCH , AIIMS got ***ICMLS ORGANIZATIONAL EXECELLENCE AWARD 2017(Cash Prize- Rs 5,000, a Memento and Certificate) at First National Conference of ICMLS*** For his Outstanding Contribution in strengthening the organizational network for Medical Laboratory Technology Profession. He is young Technologist Leader having outstanding organizational capabilities. He is Post Graduate in Biochemistry and has keen interest in Molecular Biology Techniques. We are glad to have him amongst us.