ANNUAL SCIENTIFIC SESSIONS 2014

30th August 2014

at

The Sri Lanka Foundation

Independence Square, Colombo 7

Contents

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Medico-Legal Society Awards

i. Best Research paper
ii. Best Case Report
iii. Best Concept Paper

Annual Scientific Sessions 2014

Programme

Sri Lanka Foundation

Independence Square, Colombo 7

MLS Scientific Session 2014- Programme at a Glance

Time	**Event**	
8.30 a.m. - 9.00 a.m.	Registration	
9.00 a.m. - 9.50 a.m.	Inauguration Ceremony	
9.50 a.m. - 10.10 a.m.	Refreshments	
10.10 a.m.- 11.50 a.m.	Symposium (Auditorium)	
	10.10 a.m. - 10.15 am. : Introduction of speakers	
	10.15 a.m. - 10.35 a.m. Speaker 1	
	10.35 a.m. - 10.55 a.m. Speaker 2	
	10.55 a.m. - 11.15 a.m. Speaker 3	
	11.15 a.m. - 11.35 a.m. Speaker 4	
	11.35 a.m. - 11.45 a.m. Questions from the audience	
	11.45-11.50 noon Final Comments	
11.50 a.m. – 12.50 p.m.	Launching of the Report on "*Reasons for Delays in Child Abuse Cases in Courts and Recommendations to Address this Problem*" and Panel Discussion	
12.50 p.m.- 1.45 p.m.	Lunch (Registered Participants only)	
1. 45 p.m. - 3.45 p.m..	Free paper Session 1, 2,3 & 4	
	FP Session 1	**FP Session 2**
	Free Papers No. 1,2,3,4,5,6,7,8,9,10	Free Papers No. 16,17,18,19,20,21,22,23,24,25
	FP Session 3	**FP Session 4**
	Free Paper No. 31,32,33,34,35,36,37,38,39,40	Free Paper No. 46,47,48,49,50,51,52,53,54,55
3.45 p.m. - 4.00 p.m.	Afternoon Tea	
4.00 p.m. – 5.00 p.m.	Free paper Session 5,6,7 & 8	
	FP Session 5	**FP Session 6**
	Free Papers No. 11,12,13,14,15	Free Papers No. 26,27,28,29,30
	FP Session 7	**FP Session 8**
	Free Paper No. 41,42,43,44,45	Free Paper No. 56,57,58,59

Programme- Inauguration Ceremony

8.30 a.m. - Registration of participants

8.45 a.m. - Invitees take their seats

9.00 a.m. - Arrival of the Chief-Guest

9.05 a.m. – Ceremonial procession

9.10 a.m. - Lighting of the traditional oil lamp

9.15 a.m. - National Anthem

9.20 a.m. - Welcome Address

Mr. S. B. W. de Silva

President, Medico-Legal Society

9.25 a.m. Address by the Chief Guest Hon. Palitha Fernando, PC

The Attorney General of Sri Lanka

9.40 a.m. - Vote of Thanks

Mr. Chathura Galhena

Joint Secretary, Medico-Legal Society

9.45a.m. - Procession leaves

9.50 a.m. - Refreshments

Theme of the year 2014

Are We Poisoning Our Children ?

Symposium

SYMPOSIUM ON "Are We Poisoning Our Children?"

Venue: Main Auditorium

Chairman - Mr. S. B. W. de Silva
President of the Medico- Legal Society

10.10 a.m. Introduction of speakers

10.15 a.m. **Food Additives – How Harmful Are They?**
Ms. Deepika Seneviratna,
Senior Assistant Government Analyst,
Head – Food Section, Government Analyst's Department.

10.35 a.m. **Globalisation, 'Unrestricted' Free Trade & Exploitation: Consumer Rights and Professional Obligations**
Dr. Damayanthi Perera
Specialist in Nutrition, Dietetics and Life Style Management.

10.55 a.m. **Food Safety and Hygiene Issues in Sri Lanka**
Dr. Ruwan Wijemuni,
Consultant Community Physician,
Chief Medical Officer – Colombo Municipal Council

11.15 a.m. **An overview of the legal, regulatory and criminal justice response in Sri Lanka for the protection of the community from harm associated with foods and beverages available for purchase, and proposals for law reform**
Mr. Yasantha Kodagoda,
Deputy Solicitor General,
Attorney General's Department

11.35 a.m. Questions from the audience

Final comments : Chairman

Launching of the Report on "*Reasons for Delays in Child Abuse Cases in Courts and Recommendations to Address this Problem*"

Venue : Main Auditorium

11.50 a.m. – 12.50 p.m.

Panel Discussion

Chairperson:

Hon. Justice Shiranee Tilakawardane

Panelists:

Dr. Ajith Tennakoon, Chief Judicial Medical Officer, Colombo

Mr. Harshana Nanayakkara, Attorney-at-Law

FREE PAPER SESSION 1

Chair persons- Dr. A.R.L. Wijesekara & Mr. Ariyananda Welianga

Time	Abs ref No	Title of the Presentation	Author/s
1.45 - 1.57 p.m.	**FP1**	The Broad Picture of Witness Competence	***Ekanayake C***
1.57 - 2.09 p.m.	**FP2**	Pre- autopsy and Post- autopsy discussions with relations by doctors	***Senanayake S M H M K***
2.09 – 2.21 p.m.	**FP3**	Death of a husband with chronic renal failure due to intimate partner violence	***Nadeera D R[1], Vidanapathirana M[2]***
2.21 – 2.33 p.m.	**FP4**	Detection of hidden forged characteristics in Fabricated Documents	***Weeraratna T U, Apsara K K, Batakandage S A***
2.33 - 2.45 p.m.	**FP5**	Forensic Nurse: How it helps to improve the Clinical Forensic Services in Sri Lanka	***Paranitharan P, Hulathduwa S R, Senanayake S M H M K***
2.45 – 2.57 p.m.	**FP6**	The effectiveness of the techniques commonly employed in the dating of documents	***Kaluarachchi K A S, Jayasundara J M R, Batakandage S A***
2.57 - 3.09 p.m.	**FP7**	Prevalence of deaths and it's correlates in the paediatric medical units at a tertiary care hospital in southern Sri Lanka	***Warushahennadi J, de Silva M H A D, Disanayake C N, Riyasa M N S, Sirimanna H M V***
3.09 – 3.21 p.m.	**FP8**	A statistical evaluation of illegal liquor cases in Regional Laboratory, Kurunegala	***Udeshini D R I, Ramanah G***
3.21 – 3.33 p.m.	**FP9**	A hidden aspect of physical child abuse: A case of voyeurism	***Dassanayake P B , Vadysinghe A N, Dayaratne K M P L , Madagama I R***
3.33 – 3.45 p.m.	**FP10**	Possibility of bypassing the legal system of "Medico-legal cases" treated in Government Ayurvedic hospitals	***Illangarathna Y M G***

T E A

FREE PAPER SESSION 5

Chair persons: Mrs. Sakuntha Tennakoon & Dr. Jayanie Weeratna

Time	Abs ref No	Title of the Presentation	Author/s
4..00 – 4.12 p.m.	**FP11**	The Role of Government Analyst's Department on quality of Sri Lankan Black tea-A case study	***Haputhanthree S P***
4.12 – 4.24 p.m.	**FP12**	Legal and psychological analysis of "criminal offenses" performed by Exorcists in Sri Lanka : Case reports	***Illangarathna Y M G***
4.24 – 4.36 p.m.	**FP13**	A study on knowledge and help seeking behavior regarding child abuse among school children	***Vadysinghe A N , Ramanayake R S , DayaratneK M P L ,Edussuriya D, Ekanayake T, Izzath A***
4.36 – 4. 48 p.m.	**FP14**	'Khat' a stimulant Narcotic smuggled to Sri Lanka	***Rajapakse P S K , Tennakoon S***
4.48 – 5.00 p.m	**FP15**	Suicidal sulphuric acid ingestion: A case report	***Pranavan S, Gunawardena S A***

FREE PAPER SESSION 2

Chair persons- Mr. Upali Gooneratne PC & Dr. Muditha Vidanapathirana

Time	Abs ref No	Title of the Presentation	Author/s
1.45 - 1.57 p.m.	**FP16**	Fault evidence on a vital point/ contradicted by the medical evidence	***Palliyage A***
1.57 - 2.09 p.m.	**FP17**	A rare case of sudden death in young adult	***Vaasuthevaa. K , Tennakoon. U A K***
2.09 – 2.21 p.m.	**FP18**	A comparative analysis of National Guidelines of Medico-legal care of survivors of sexual violence of Sri Lanka and India	***Edirisinghe P A S, Kitulwatte I D G***
2.21 – 2.33 p.m.	**FP19**	Blood Alcohol analysis using Automated Headspace GC	***Karunarathne W D V , Hathurusinghe L S, Tennakoon S***
2.33 - 2.45 p.m.	**FP20**	Trends and challenges of facial trauma presented for medico legal examination	***Kitulwatte I D G, Edirisinghe P A S, Artigala H D M N, Silva A***
2.45 – 2.57 p.m.	**FP21**	The challenges encountered in examination of a survivor of sexual assault by a stranger; A case report	***Gangahawatte S, Edirisinghe P A S, Kitulwatte I D G***
2.57 - 3.09 p.m.	**FP22**	Corex-D poisoning in Sri Lanka	***Hathurusinghe L S, Karunarathne W D V, Perera K A P B Tennakoon S***
3.09 – 3.21 p.m.	**FP23**	Medico-legal challenges in identifying body packers	***de Silva M, Dayapala A, Gamith Mendis G, Haq R***
3.21 – 3.33 p.m.	**FP24**	Case study of Glyphosate (Round up) poisoning	***Dilhani Menike T R M C Priyadarshani H T T, Chandrasiri P G P, Tennakoon S***
3.33 – 3.45 p.m.	**FP25**	Death caused by ill-fitting dental prostheses in a case of an assault	***Sivasubramanium M, Lokuliyana SP***

T E A

FREE PAPER SESSION 6

Chair persons: Dr. Ajith Tennakoon & Mr. J. A. K. Mark

Time	Abs ref No	Title of the Presentation	Author/s
4.00 – 4.12 p.m.	**FP26**	Uncommon Maternal Death	***Dissanayaka D M A J, Gunathilaka K M T B***
4.12 –4.24 p.m.	**FP27**	Quality study of coconut oil in the Sri Lankan Market	***Warnasooriya W M P B K , Senevirathne D***
4.24 – 4.36 p.m.	**FP28**	Intimate partner violence kills	***Gunethilake K M T B, Vidanapathirana M***
4.36 – 4. 48 p.m.	**FP29**	Globalization, Unrestrained Free Trade & Globesity: Traditional vs Transnational Diet: Consumer Rights & Professional Obligations	***Perera A G D***
4.48 – 5.00 p.m.	**FP30**	Value of minor trauma in the diagnosis of physical child abuse; the law of common man	***Gunethilake K M T B, Vidanapathirana M***

FREE PAPER SESSION 3

Chair persons- Ms. Ayesha Jinasena & Dr. Ruwan Illeperuma

Time	Abs ref No	Title of the Presentation	Author/s
1.45 - 1.57 p.m.	**FP31**	"Right to Food", is it a Fundamental Right?	***Gunawardana M L***
1.57 - 2.09 p.m.	**FP32**	A delayed postmortem of a surreptitiously disposed dead baby	***Samaranayaka S P G K, Vidanapathirana M***
2.09 – 2.21 p.m.	**FP33**	Physical child abuse by a close family relative	***Senathunga M M S, Vidanapathirana M***
2.21 – 2.33 p.m.	**FP34**	Misuse of rectified spirits imported under duty exemption facility exposed	***Wimalasena M G S A, Seneviratne M E J***
2.33 - 2.45 p.m.	**FP35**	Awareness on legal concepts and ethical concepts related to sexual offences among 1st year medical students and pre-intern graduates	***Jayaweera M K, Gunawardena S A***
2.45 – 2.57 p.m.	**FP36**	Investigation of the aircraft tragedy occurred 15 years back in the Indian Ocean	***Samarasekara A, Dassanayake P B, Vadysinghe A N, Attygalle U, Vidanapathirana M, Wijewardena HP***
2.57 - 3.09 p.m.	**FP37**	A study on the pH of the groundwater samples submitted by public health inspectors	***Perera M.A.K.K.P***
3.09 – 3.21 p.m.	**FP38**	A national training programme in sexual assault forensic medical examination for medical officers in Sri Lanka	***Perera J, Samarasekara A, Poornima S***
3.21 – 3.33 p.m.	**FP39**	Timing of contusions – a preliminary study	***Ruwanpura P R, Rathnaweera R H A N***
3.33 – 3.45 p.m.	**FP40**	Analytical study of the iodine contents of edible common salts consumed by the Sri Lankans	***Senevirathne D***

T E A

FREE PAPER SESSION 7

Chair persons: Dr. B. P. P. Perera & Dr. Uthpala Attygalle

Time	Abs ref No	Title of the Presentation	Author/s
4.00 – 4.12 p.m.	**FP41**	A retrospective descriptive study on deaths following fatal pressure on the neck at North Colombo Teaching Hospital (NCTH) and Colombo South Teaching Hospital (CSTH) (2004-2013)	***Paranitharan P, Perera W N S, Hulathduwa S R, Ariyaratne D, de silva A***
4.12 –4.24 p.m.	**FP42**	Application of an ancient DNA approach to analyze a highly degraded human remain – A case report	***Chandimal K M, Yasawardene S G, Illeperuma R J***
4.24 – 4.36 p.m.	**FP43**	Reconstruction of vehicle type by examination of injury pattern	***Gunethilake K M T B, Vidanapathirana M***
4.36 – 4. 48 p.m.	**FP44**	Firearm injury as a defense wound in forensic context	***Kumara D M C W , Perera W N S***
4.48 – 5.00 p.m.	**FP45**	Differential DNA extraction; a successful method to isolate male DNA from challenging sexual assault evidence in Sri Lanka	***Wakista P W, Illeperuma R J***

FREE PAPER SESSION 4

Chair persons- Prof. M. S. L. Salgado & Mr. Uthpala Attygalle

Time	Abs ref No	Title of the Presentation	Author/s
1.45 - 1.57 p.m.	**FP46**	Obscenity on the internet; Adequacy of the present legal framework	***Galhena C N***
1.57 - 2.09 p.m.	**FP47**	An Efficient Medical Legal Management Information System	***Wijayanayake A N , Jahubar A , Editirisinghe A***
2.09 – 2.21 p.m.	**FP48**	DNA based forensic identity testing as a valuable tool for crime investigation in Sri Lanka	***Kothalawala S D, Goonawardhana N D S, Wakista P W, G S K W Jayasekara, V Elanahai,R J Illeperuma***
2.21 – 2.33 p.m.	**FP49**	Removal of body parts during embalming: ethico-legal aspects	***Perera B P P***
2.33 - 2.45 p.m.	**FP50**	Application of miniaturized human STR markers (mini-STRs) for a successful DNA testing of formalin fixed foetus – A case report	***Goonawardhana N D S, Udagama P V, FernandopulleND, Illeperuma R J***
2.45 – 2.57 p.m.	**FP51**	Routine reporting to the police of patients admitted to the hospital with injuries or diseases claimed or suspected to have been criminally inflicted; is it a breach of confidentiality?	***Perera B P P***
2.57 - 3.09 p.m.	**FP52**	Illegal trafficking of potable spirit	***Mala S M V D , Wimalasena M S G A Ramanah G***
3.09 – 3.21 p.m.	**FP53**	Some ethico-legal issues concerning medico-legal examination for drunkenness	***Perera B P P***
3.21 – 3.33 p.m.	**FP54**	Identification of Cathine in an unknown white crystalline substance	***Kumarapeli C P, Tennakoon S***
3.33 – 3.45 p.m.	**FP55**	Patients' knowledge on informed consent in clinical practice; a study done at North Colombo Teaching Hospital	***Perera W N S., Perera B P P., Paranitharan P. Wirasinha D C G A***

T E A

FREE PAPER SESSION 8

Chair persons: Prof. Ananda Samarasekera & Dr. P. R. Ruwanpura

Time	Abs ref No	Title of the Presentation	Author/s
4.00 – 4.12 p.m.	**FP56**	Misuse of rectified spirits imported under duty exemption facility exposed	***Wimalasena M G S A, Seneviratne M E J***
4.12 –4.24 p.m.	**FP57**	Sudden Death in Flight- "Economy-Class Syndrome"	***de Silva M***
4.24 – 4.36 p.m.	**FP58**	Analysis of the Type of High Explosive in an Electric Detonator	***Fernando N I K , Dahanayake L A W K, Welianga A Gunatilleke W D G S***
4.36 – 4. 48 p.m.	**FP59**	Comparison of injuries and correlates of male victims of sexual assault during and after terrorism in Sri Lanka; a medico-legal study	***Vidanapathirana M, Tennakoon A, Amararatne R R G S, Gunawardene S, Rathnaweera R H A I, Ratnayake L***

Abstract Reviewers

1. Dr.A.R.L Wijesekera, Former Government Analyst, Former Chairman Sri Lanka Standard Institute and Consultant, Dangerous Drug Control Board
2. Dr. Ajith Tennakoon, Chief Judicial Medical Officer, Colombo
3. Mr. Yasantha Kodagoda, Deputy Solicitor General, Attorney General's Department

The panel of assessors for selecting the Medico-Legal Society Awards for 2014

1. Dr. A. R. L Wijesekera,
   Former Government Analyst, Former Chairman Sri Lanka Standard Institute and Consultant, Dangerous Drug Control Board
2. Dr. S. M. Colombage
   Consultant Forensic Pathologist, Brunei

SYMPOSIUM

ON

"ARE WE POISONING OUR CHILDREN?"

FOOD ADDITIVES _HOW HARMFUL THEY ARE?

Ms. D. Senevirathne
Senior Assistant Government Analyst
Head- Food section
Government Analyst's Department

Food additives are the substances which are deliberately added to food to achieve a certain desirable technological quality.

- to facilitate the processing
- to improve the shelf life
- to improve the appearance
- to change the organoleptic properties

People prefer to live in a world where they can harvest there foods fresh from the earth, ate them immediately and without any additives.

Alas, we do not live in such a world .High technology food production and elaborate chains of food distribution have created a situation in which food additives are necessary. Yet for the protection of one self and one's family it is also necessary to be well informed about these hundreds of additives in quite specific terms and highly aware of the possible implications of their inclusion in our daily diet.

It is generally recognized that all chemicals including food are toxic to animals and man if large enough doses are administered. Therefor a limit in the daily intake of any chemical substance is essential.

Some additives are essential to keep the food in good condition such as when the preservation of meat product is far more important than the risks of possibly fatal food poisoning from tainted meat.

The safety of these additives is assessed by long term feeding trials on animals. On these trials acceptable daily intake (ADI) is achieved and they are related to body weight. The additives are permitted in foods when there is enough data available with respect to the toxicity levels etc. Therefore it is important to note that one should never use a non-permitted additive in food.

The main classes of Food additives important to are,

- Preservatives
- Colouring substances
- Sweeting agents
- Flavours and flavour enhancers
- Anti oxidants

The Ministry of health has been issuing Directives on these additives. (Food Regulations made under Food Act)

- Food (Preservative) Regulation-1990
- Food (Sweeteners) Regulation- 2003
- Food (Labeling and Advertising) Regulation- 2005
- Food (Colouring substances) Regulation- 2006 –amendment in 2011
- Food (Anti oxidants) Regulation- 2009
- Food (Flavouring substances and flavour enhancers) Regulation- 2013

Under these regulations, the additives which can be used in different kinds of foods and their levels are given.

The foods are moved from country to country within a common market, a list of additives that are generally recognized as safe has been introduced. These additives have long names, cannot put in the label of the food. Therefore international numbering system has introduced.
ie. INS or E-numbering (E- numbering has introduced to European Economic Community)
The people should aware these E/INS numbers used in the label of food that they consume.

Most of these additives have adverse effects on human. These should be avoided. But is often due to lack of awareness and knowledge about these harmful additives, that majority of the population ends up having them. There are a number of harmful food additives that are found in everyday consumption foods like, chips, cold drinks, high fat diets, caffeine containing beverages and other junk and health foods too.

Some of these additives are not recommended to use in hyperactive children.
Ie.
Some permitted food colours- Tartrazine, Sunset yellow, Ponceau -4R, Erythrosine , Indigo carmine, Brilliant Blue FCF, Carmoisine

Some permitted food preservatives- Benzoic aci, Sodium benzoate, Sulphur dioxide, Sodium nitrate, Sodium nitrite

Butylated hydroxyanisole(BHA) } Permitted antioxidants
Butylated hydroxytoluene(BHT) }

Certain additives are dangerous to asthmatic or aspirin sensitive people.
Pottasium benzoate } Permitted preservatives
Calcium benzoate }

According to Food Regulations,
1. No artificial sweeteners or flavours can be added in food intended for babies and young children.
2. Sodium/ Potassium nitrate or nitrites are not allowed in baby foods.
Most of the artificial dyes are coal tar dyes and the chemical nature is that they are Azo-dyes. Most of Azo- dyes are carcinogens.

Only nine artificial colouring substances are permitted in Sri Lanka. Even with the permitted colouring matters certain individual can show some irregularities in their body functioning.

One of the most common flavor enhancer is Mono Sodium Glutamate (MSG).Which is naturally occurring in sea weed called 'sea tango' .Commercially it is obtained from sugar beet pulp and wheat gluten. It is mainly used in soup mixes, meat products, and sauces.MSG is an excitotoxin, which means it overexcites your cells to the point of damage or death, causing brain damage to varying degrees, and potentially even triggering or worsening learning disabilities. Common adverse effects linked to regular consumption of MSG, include: obesity, eye damage, headaches, fatigue and disorientation, dipression, rapid heartbeat, tingling and numbness. The condition known as " Chinese Restaurant Syndrome" entered the medical literature, describing these numerous side effects. This syndrome also called as "MSG Symptom Complex".

Sodium and Potassium nitrates, nitrites are used in cured meat. That enhances the colour and flavor of processed meats. It is very active against Cl. botulium. But these nitrites and nitrates react with amino acids in the stomach and form nitrosamines. Which are carcinogens. Pregnant women should avoid these nitrite/nitrate containing foods.

Preservatives are as food additives in all kinds of packaged foods. But many of them are actually harmful food additives that should not be consumed without being aware of personal food allergy intolerance.
Sulfites is one of such preservative use in packaged foods .It has the property of curbing the growth of harmful bacteria, maintaining colours and increasing the life of the product. Sulfites are not harmful for most of the people, but for some, sulfites might pose as highly reactive and harmful foods. Its allergy intolerances might vary from rashes to asthma attacks. Foods that contain sulfites in different chemical forms are dry fruits, cordials, ready to serve drinks, wines etc.

BHA or Butylated Hydroxyanisole is used as a preservative in cereals, gum, potato chips , high fatty foods and oils. It's also use as an antioxidant in oils and fatty foods, It's slow down the rate at which fats become rancid.BHA may cause liver and kidney damage, infertility, weakened immune system, birth defects, cancer and should avoid by infants, young children, and pregnant women.

Saccharin is used as non-nutritive artificial sweetener in "Diet", "no- sugar added", "sugar-free", soft drinks and packaged (table top)sweeteners. Saccharin is about 350 times sweeter than sugar.

Studies have shown that Saccharin increases the potency of other cancer- causing chemicals but WHO has removed the saccharin from their lists of cancer-causing chemicals.
Saccharin has been replaced in almost all foods by aspartame and other better- tasting sweeteners.
Aspartame is used as non-nutritive artificial sweetener in “Diet”, “no- sugar added”, “sugar-free”, and other products including soft drinks, drink mixes, gelatin desserts, frozen desserts, jams and fruit spreads, yogurt, breakfast cereal, candy, chewing gum, and packaged (table top) sweeteners.

Aspartame is 200 times sweeter than sugar. Aspartame contained phenylalanine(50%).Phenylalanine is an amino acid regularly found in the body, but some people suffer from a disorder called Phenyl Keto Nuria(PKU); an inability to metabolize phenylalanine .Therefore high levels of phenylalanine can build up in the brain of phenyl keto nuric who consume aspartame

Aspartame may cause brain damage in phenyl ketonurics. Therefore the foods contained aspartame the warning description “shall not be used by phenyl ketonurics “shall be given on the label
Aspartame may cause central nervous system disturbances, menstrual difficulties, may effect brain development in unborn fetus.

Sugar alcohols (Isomalt, Lacitol, Maltitol, Sorbitol, Xylitol) use as sweeteners may cause laxative effect if use large amounts .Therefore the warning description “Excessive consumption may induce laxative effects” shall be given on the label.

The bottom line, most of the products contained more than one of the above additives, so they’d be worth eating those products occasionally or avoiding entirely.

Globalisation, 'Unrestrained' Free Trade & Exploitation: Consumer Rights & Professional Obligations

Dr. Damayanthi Perera

Nutrition &Dietetics Specialist/Independent Researcher

FOREWORD

'*It took five decades after the initial studies linking tobacco and cancer for effective public health policies to be put in place, with enormous cost to human health. Must we wait five decades to respond to the similar effects of Big Food?' (Stuckler and Nestle, 2012).*

DEATH BY ULTRA-PROCESSED, INDUSTRIALIZED DIET!

Are we poisoning our children, is a topical subject but I would like to modify the title slightly to, ***Are they poisoning our children? I leave that to you to decide who, they are.*** This presentation is not about conventional forms of food poisoning. This is about **'white collar food fraud' and 'slow poisoning of our children'** via ultra-processed food and mind- poisoning (via mass media advertising and professional promotions i.e. brand promotions and prescriptions). Concerned professionals and consumers have a right to use the Precautionary Principle to safeguard public interest.

Globalisation & Globesity

Post World War II globalisation is partly the result of planning by politicians from the Global North to break down borders hampering trade. Globalisation is dubbed 'neo-economic colonisation' or coca-colonizsation. Transnational Companies (TNCs) undermine time-tested 'Traditional Diets', food cultures and agricultural practices to boost the sale of highly unnecessary, harmful and potentially harmful ultra-processed 'Transnational Diets' (i.e. burgers, colas and other fizzy drinks, imitation milk, margarine (fake butter), unnecessarily fortified breakfast cereals, noodles, malted milk, yogurt etc.), Genetically Modified Food and agro-chemicals.

The World Trade Organisation (WTO) was created in 1995 to regulate the global free trade. An important observation is that parallel to WTO-driven globalised, unrestrained free trade, there is a global epidemic of obesity dubbed Globesity. There is also an increase in diabetes, heart disease, cancer and other diet related diseases leading to long-term debility and premature death of millions of consumers from industrialised nations and their children. Global food companies are changing global diets, global disease patterns and death patterns.

Many Americans in the prime of their life are ailing or dying due to morbid obesity (Pai, 2006), diabetes, heart disease, cancer and other diet-related chronic diseases. In the UK, children as young as three are dying, literally chocking on their own fat. (UK Parliamentary Select Committee on Health, Third Report, 2003). *Remember, b*abies do not choose their food or read food labels. Most disturbingly, it has also been reported that children of this generation from industrialised nations are facing the prospect of dying before their parents (IASO, 2009-10). Ultra-processed, industrial foods produced by industrialised

nations are largely responsible for reversing the Post World War11 gains in life expectancy. *What an achievement!*

'Food companies unable to increase sales in the United States have moved marketing campaigns for their products to emerging economies in Asia, Africa, and Latin America, with predictable effects on the body weights and health of those regions' populations (Nestle, 2002, Rev.2013).

In essence, humanity has finally arrived at the most dangerous era of human civilisation – Death by ultra-processed, industrialised Diet. With various ***'simulated (fake) milk'*** products in the market and faulty western nutrition and agricultural practices, and policies, we can expect a similar scenario in Sri Lanka too, ***unless effective nutrition and agriculture policies*** and ***consumer protection measures*** are introduced soon. It is in this context that we need to examine the issue of poisoning our children.

CONNECTING THE DOTS & THE BIG PICTURE

Contents in a Capsule – A Food Supplement for All Ages!

Part 1 defines the conventional meaning of poisoning and the influence of advertising and trade puffery on consumers. Part 2 describes some slow poisons. Part 3 provides a historical overview of the perils of unregulated marketing, using some past experiences from unethical infant formula marketing and infant deaths (Refer Section: Milk and Murder). Attention is also drawn to deaths related to hydrogenated fats and margarine. Part 4 provides some important consumer messages. Part 5 is Conclusions and the way forward. Part 6 summarises the key messages in a reader friendly manner: Seven Golden Survival Rules for Modern Consumers. Due to constraints of space, explanations with regard to various products will not be provided in this paper but will be discussed during the presentation. In this paper I touch upon milk and margarine because these are products that are heavily promoted for children. Highly unnecessary and indiscriminate fortification of food products with synthetic vitamins, minerals and various other ingredients is another major worry.

Encapsulating the key issues, the presentation will highlight issues relating to unethical and unregulated advertising, marketing, professional obligations and consumer rights and related issues. The key accent will be on the aggressive promotion and marketing of highly 'unnecessary', harmful and 'potentially' harmful ultra-processed food products (i.e. food, beverage and milk products) to 'uninformed' consumers. Please note the word 'products' (Refer Section: Eat Natural Food – Not Food like Substances!).

This presentation is largely for two groups of professionals (doctors and lawyers) who are in a position to contribute immensely towards consumer protection. The key aim of my presentation is to share more than one and a half decades of post-doctoral research and experience on globalisation, food and health with a view to educating and empowering a powerful group of Sri Lankan consumers. In this paper, I will be presenting some complex, inter-connected issues that affect health and longevity of people. I shall attempt to 'Connect the Dots' and paint the 'Big Picture' regarding 'Big Food' and 'Big Agri'.

PART 1

POISONING

Poisoning- Definition (Oxford Dictionary)

A poison is a substance that when **introduced into** or **absorbed** by a living organism **causes death or injury,** especially, one that kills by rapid action even in small quantity. Routes of exposure may be via oral or dermal exposure or through inhalation.

Colloq. – A harmful influence or principle etc.

Advertising, Trade Puffery and Mind Poisoning

'Neither the print nor audio visual media take an interest in the welfare of the consumer on whose doorstep or living room, the most elaborate trade puffs are landed on a mass scale……. For instance, sections 28 and 29 of the Proposed Consumer Protection Authority Bill, holds a trader liable for misleading or deceptive conduct, and false representations made in connection with product promotions. Instances of advertisements violating these laws and regulations are not all that rare. Nevertheless, the media which is very much a 'partner in crime' is absolved from any liability'. If the media organisations develop a more responsible approach towards advertising it will be a definite and healthy turn towards consumer welfare (Gunatilake, LST Review; Volume 13 Issue 175 May 2002, Pg. 18).

Brand Promotion via Mass Media & Professional Associations

The Food Industry engages in aggressive, unethical, 'Brand Promotion' via print and electronic media using trade puffery, legal loopholes and regulatory lapses to grab the biggest market-share. Ultra-processed food products are also promoted through direct and indirect, unethical medical and nutrition promotion and patronage. TNCs buy professional allegiance, collusion or silence via unethical sponsorships, research grants, etc. Consumers are duped into purchasing harmful and potentially harmful ultra-processed food products. *Such organisations and professionals are betraying the public trust and are failing in their public duty.*

Worryingly, advertising is not regulated in Sri Lanka and the advertising industry and the media are having a field day, literally at the expense of consumers. Ironically, even many media, medical and legal professionals have fallen prey to advertising gimmicks and the plight of the ordinary consumer is unfortunate. Therefore, even belatedly, it is time to bring in effective mechanisms to regulate advertising.

Part 2

SLOW POISONS & SERIAL KILLERS!

Transnational companies are undermining our time-tested food culture and agricultural practices that have evolved successfully over thousands of years, simply to boost their profit. Post-Green Revolution (which is in reality an agro-chemical marketing revolution), is destroying the global eco-system at an alarming rate due to agro-chemical based intensive agriculture and animal farming models promoted by industrialised nations. When the environment is poisoned, the entire eco-system dies. Chronic Kidney Disease of Unknown aetiology (CKDu) appearing in epidemic proportions in the North-Central Province of Sri Lanka and spreading to the rest of the country is an example of a 'deadly system' that poisons the eco-system in the name of modern agriculture and increased yields.

Just to cite one example of slow poisoning, *Cadmium contained in agrochemicals is a 'silent, serial killer' and a 'prime suspect' in the aetiology of CKDu.* ***'Cadmium is a chemical with a long half-life (17-33 years in man), where small daily exposure over long periods leads to accumulation of toxic levels in the kidney'*** (Garrow & James, 1996, pg. 533). Similarly, global citizens are being poisoned slowly through

the modern, Western food system. Should we not worry about the ever increasing cocktail of chemicals added to our food, in the name of processing and preservation? 'Extended shelf life' may lead to 'reduced real life' for consumers! Following are examples of two great professional blunders.

Margarine & Mad Cows - Death by Professional Endorsements

Many consumers may not be aware that partially hydrogenated fats containing ***toxic Trans Fatty Acids (TFAs)*** and TFA laden ***partially hydrogenated margarine recommended*** and ***endorsed whole-heartedly*** by the ***American Heart Association, American Dietetic Association*** and many ***other apex health organisations*** to prevent heart disease caused heart disease! It has been estimated that more than thirty thousand consumers per annum in America may have died due to heart disease caused by such food. This figure excludes those who suffered heart ailments due to the same ***(****Willette & Skerrett, 2001, pgs. 28, 74, 82).* Those who may have died of cancer have not been estimated.The bottom line is: Consumer beware, highly processed food may kill or maim.

Many margarine brands are not hydrogenated today but margarine is nothing but a cheap imitation of butter sold with a fancy price tag and the use is highly questionable. Note: *Hydrogenation is detrimental to health but the process is still used in many countries due to the power of the oil lobbies (Erasmus, 1993, pg.105).* Another western blunder is the man-made (scientists made) Mad Cow Disease (MCD) that led to CJD (Creutzfeldt-Jakob Disease) or the human form of MCD that killed many cows and beef consumers in the UK. Details are beyond the scope of this article.

Synthetic Vitamins & Minerals are Toxic

In addition to the long known toxicity of fat-soluble vitamins (A & D etc.) and minerals such as iron, zinc, etc. in excess, there is emerging data that calcium supplementation may lead to heart disease. When you switch on the TV many product advertisements will boast that their product contains added vitamins and minerals – some even twice the requirement. How justifiable is it to add unnecessary vitamins and minerals to milk, instant noodles, yogurt etc. (indiscriminate fortification). These are foods consumed regularly by children. There is a global move by the global fortificant industry to promote mass fortification of staple foods. Details are beyond the scope of this article and have been published elsewhere (Perera, 2013). There is an urgent need for public debate and discussion on mass fortification, GM food and rice.

Fake Milk and Fake Gold

The milk industry markets simulated milk powder brands containing many questionable ingredients as products superior to natural milk. Such products are promoted heavily via the mass media and nutrition and medical patronage and prescription. These products contain various ingredients that may be harmful in the short and the long-run (Valleys, 2008). If you are duped in to purchasing imitation gold as a product better than gold, at a much higher price how would you feel? Refer following section for more details.

PART 3

MILK OF HUMAN UNKINDNESS

Is History Repeating With the Plus, Plus Fake Milk?

Those in nutrition and medicine may be aware of the checkered history of the transnational infant formula manufacturers. History reveals that during the 1930s aggressive and unethical marketing of infant formulas in developing countries resulted in severe undernutrition and death of thousands of infants. The *International Code on the Marketing of Breast Milk Substitutes* (World Health Organisation –

WHO) was subsequently developed as a result of relentless public pressure and consumer boycotts of *Nestlé products*.

The Code prohibits advertising of infant formulas for children below one year. To make good any financial losses that can arise as a result, the industry has resorted to 'manufacturing' simulated milk powder for children over one year and marketing them under various brand names. Please note: Children over one year do not need any special milk powder. This is a false need created by the milk powder industry. Also note: Only cows can produce real milk. The following citation titled 'Milk and Murder' highlights the perverse influence of commerce on child health.

Milk and Murder

*'If your lives were embittered as mine is, by seeing day after day this massacre of the innocents by unsuitable feeding, then I believe you would feel as I do that misguided propaganda on infant feeding should be punished as the most criminal form of sedition, and that those deaths should be regarded as murder' (*Dr Cicely Williams, commenting on the title of her speech, Milk & Murder, 1939). '

'In 1939, a woman doctor spoke at the Singapore Rotary Club. Dr. Cecily William's subject for the evening was Milk and Murder. Cicely Williams charged the artificial baby food industry with murdering babies by promoting their milk as food for infants. Ironically, the president of the Rotary Club, who presided over the meeting that evening, was the local president of Nestlé.'

Commerciogenic Malnutrition

'Dr. Williams' scathing indictment of artificial feeding of infants was followed in the 1960s by Dr. Derrick Jellife's research on the impact of artificial feeding on the health of babies. He coined the term ***"commerciogenic malnutrition"*** *to highlight the connection between commerce and increase in bottle feeding at a special meeting organised on the issue by the Pan American Health Organisation -PAHO' (The Boycott Book).*

Dr William's speech and Dr Jeliefe's reference to severe malnutrition of bottled fed babies as ***"commerciogenic malnutrition"*** highlight the perverse influence of commerce on child health. Their statements are more valid today than then.

PART 4

FOOD ADVISE FOR MODERN CONSUMERS

It is important for parents and all consumers to be aware of the changes in global food processing, food marketing and the tricks of the food trade in order to be able to make wise food choices.

A Globalised Food Market

World's Food system today is not a comprehensive market place of small producers but an oligopoly (Stuckler & Nestle, 2012, Patel, 2007, Pollan, 2008). Globalisation and 'unrestrained' free trade have created powerful Transnational Companies (TNCs) that exert perverse influence on all facets of life i.e. food, agriculture, pharmaceuticals, science, politics, trade, law, water, environment, etc. The traditional food and agricultural systems have been hijacked by a handful of Transnational Companies (TNCs) 'working the global food and marketing system' - Agricultural, Agro-chemical, Food Processing and Marketing Companies (i.e. global supermarkets and others).

Brainwashing of Consumers

Due to globalisation and 'unrestrained' free trade, healthy traditional diets are influenced negatively and the ecosystem is destroyed. ***Transnational Companies (TNCs) use many unethical marketing practices***

such as undermining wholesome, natural food such as rice and milk as nutritionally inadequate to promote branded, fortified food products. They also create a fear psychosis in the minds of the consumers via the mass media to promote sales of ***fake milk, fake butter (margarine)*** and even ***soap.*** Currently some brands of yogurt and soap are marketed via creating a bacteria phobia (i.e., an unnecessary fear regarding bacteria). Gene-engineering is complemented with mind- engineering (i.e., brainwashing).

The Nexus

There is a nexus between the TNCs, Western governments, media, professional associations, and ironically even the United Nations (Hertz, 2001; Nestle, 2001, 2010; Palmer, 1988, Rev.2009, Chapt.15). Sri Lanka lacks strong and powerful consumer lobbies and the country is a haven for such TNCs. The following is an interesting eye opener for consumers.

Functional Foods Deconstructed!

Marion Nestle, Professor of Human Nutrition and author debunks the irrationality of functional foods: *'These days, food products constructed for this purpose are classified in their own special category and are variously called, 'functional foods," designer foods," or sometimes, nutraceuticals." I much prefer the designation 'techno-foods……'* (Nestle, 2002, Rev. 2013, pg. 295). Please note the word 'constructed'.

'*Functional foods are about marketing, not science or health'. …..European Food safety authority has been so reluctant to allow health claims for most functional foods much to the distress of marketers* (Nestle, 2010) but public health officials have been slow to respond to protect public health (Stuckler & Nestle 2012, loc. cit; Nestle, 2001)**.**

320,000 Ultra-processed (Prostituted) Foods

In the US '*Since 1990, food companies have introduced over one hundred thousand new packaged foods and beverages, over one fourth of which are 'nutritionally enhanced' functional foods that can be marketed as higher in calcium, fiber or vitamins, and low in salt, cholesterol, sugar or fat. Advertising comprises just part of the campaign to market these goods. The companies also use unrelenting pressure to influence health organisations, nutrition professionals and government officials to act in ways that will enhance-or at least not harm–the companies sales efforts……. The methods used often involve the transfer of large sums of money in ways that are marginally legal*' (Marion Nestle, 2002 b cited by Schmid, 2005, pg. 160).

By 2002, there had been about 320,000 items competing for supermarket shelf space large enough to hold just 50,000. *'Some such products, among them* no-fat cookies, vitamin-enriched cereals, and calcium-fortified juice drinks, contain so much sugar that they belong at the top of the Pyramid. Developing such foods has only one purpose: attract sales' (Nestle, 20002, Rev. Ed. 2013).

As Western consumers begin to realise the folly and danger of intensive farming, ultra-processed and fortified food, they are moving towards minimally processed organic food and 'natural nutrition'. As a result of the above, market saturation and the economic downturn in the West; Western industries have begun to lose their business prospects and are scrambling for the growing markets in developing nations. Under these circumstances, in addition to the normal trade puff and hype we see daily via the media, marketing of Genetically Modified (GM) food and rice and unnecessary fortification, etc., masquerading as humanitarian interventions. Emerging, independent research data on the effects of GM food is worrying and no unwilling consumer should be made to consume GM foods. Nevertheless, GM foods are not labeled in Sri Lanka.

Eat Natural Food – Not Foodlike Substances!

So what is the final answer? Leave the 320, 000 ultra-processed, foodlike substances on the supermarket shelves and purchase natural or minimally processed food. It will be good for health and your wallet too and this is called 'Voting with your Wallet'. When you see those advertisements on TV, promoting powdered milk products for children over one year, remember that they are not real milk but milk like substances!

'.... And you are better off eating whole fresh foods rather than processed food products. ..... For a while it used to be that food was all you could eat, today there are thousands of other edible food-like substances in the supermarket. These novel products of food science often come in packages elaborately festooned with health claims, which brings me to another, somewhat counterintuitive, piece of advice. If you are concerned about your health, you should probably avoid products that make health claims. Why? Because a health claim on a food is a strong indication it's not really food, and food is what you want to eat '(Pollan, 2008).

Processed Food and Genocide

Available data indicate that ultra-processed food is killing or maiming the Western consumers. Nevertheless, despite the evidence, the Global North is exposing the Global South to deadly epidemics of obesity, diabetes and other Non-Communicable Diseases (NCDs) such as cancer and CKDu by marketing and promoting unhealthy food products and agro-chemicals. There is also relentless pressure and coercion to accept highly unnecessary, dangerous and potentially dangerous fortified food and Genetically Modified (GM) food and rice. If Williams was alive what would she call this - murder or genocide?

When you see advertisements full of fake science, industrial love and corporate humanity, I hope you will now be able to see through the trade puffs and the hype. Monteiro et al. (2010) highlight the need to enact laws to protect the people from commercial exploitation by Transnational Companies.

PART 5
CONCLUSIONS & THE WAY FORWARD

Food and Nutrition without Guilt

Like Garments without Guilt, this presentation is about Food and Nutrition without guilt. Nutrition Science has been hijacked by the food industry and scientific information is 'puffed-up' and 'cooked up' according to the marketing needs of the industry. There are nutrition and medical professionals ever willing to assist the industry to do the modifications and promotions. If you want your children to be healthy, then it is important to understand the difference between 'Real Human Nutrition' and 'Industrial Nutrition' that promote 'Fake Food' purely for profit.

Today, consumers are confused to the core. Professionals and consumers belong to one of the following categories: informed, ignorant or indifferent. The Industry profits from ignorance and confusion. A few, enlightened consumers from the Global North (Pollan, Foreword, Nestle 2013) and the Global South (Shiva) and others have realized the dangers and the exploitative nature of the unrestrained, Free Trade policies and agreements. Majority of the policy makers and the consumers from the Global South may not be unaware of the serious negative implications of 'unrestrained' Free Trade, particularly in the areas of food, heath, agriculture, environment and the economy.

Most food products marketed by Transnational Companies are ultra-processed, unnecessary, unhealthy, known to be harmful or potentially harmful and expensive. It has been observed that almost parallel to the introduction of unrestrained Free Trade Policies, there is a massive epidemic of obesity (Globesity), diabetes and other Non-Communicable Diseases (NCDs) leading to long-term ill health and debility or premature death in the US and other industrialised nations. This trend is now spreading globally.

Today we live in a dangerous era in human nutrition where the lines between 'science' and 'nonsense' and 'natural food and fake food' are blurred to those blinded by money, perks and privileges offered by the industry. It is sad to see professionals who are willing to sacrifice the lives of children and other consumers literally for a plate of rice at a Star-Class Hotel.

In a globalised world, knowledge is the key to good health and survival -- not branded, expensive food products or the so-called 'Functional Food' touted aggressively via the mass media. *The take-home message is that all natural foods including natural water are functional. Novel and ultra-processed, industrial food may be dysfunctional and dangerous and may lead to long-term debility or death.*

With more than 300,000 processed food products (prostituted food) on the global market, you need a Nutritionist and professional advice on food and nutrition not to learn about what to eat but what not to eat. Mind the quacks but beware of the industry-friendly professionals and self-proclaimed Nutrition Experts.

The author highlights the need to adhere to natural and 'minimally' processed food for health, longevity, economic and environmental reasons. Choose or prescribe natural or minimally processed food.

A key conclusion of this presentation is that we do not have to expose our consumers to the predicament faced by consumers of industrialised nations. We have a golden window of opportunity to save our consumers, the environment and the economy by educating and empowering the consumers and enacting the necessary laws to protect the consumers. The question is whether there is a will for collective action. I leave it to you to decide.

PART 6

Seven Golden Survival Rules for Modern Consumers

1. *Fresh, liquid milk is the best.*
2. *Natural foods need little or no advertising. Do not purchase food products that are advertised with various claims. Use natural or minimally processed food on a regular basis.*
3. *Children over one year, pregnant and lactating women or the elderly do not need the so-called 'specialized milk or special age-specific milk or food products'. Such products contain unnecessary and questionable ingredients that may pose short and long-term health problems.*
4. Nature provides natural, safe, healthy and nutritious food. A*void fortified or enriched milk and milk products (yogurt), beverage (malted beverage, etc.) and food (biscuits, instant noodles). Common fortificants are: Vitamins, minerals, synthetic DHA & ARA, probiotics etc. (Margarine & skimmed milk are required to be fortified with vitamin A & D by law but both are not natural food). Purchase non-fortified products and lobby for change.*
5. *Avoid Energy Drinks - They may be dangerous and excess energy leads to obesity.*
6. *If a professional association or a professional recommends or prescribes any simulated (fake) milk products or highly processed, branded food products with added vitamins, minerals or novel ingredients (synthetic DHA, ARA etc.) request for information on natural or minimally processed alternatives to the product, the necessity, the cost benefit and the short and long-term safety of the product. You have a right to request for a written prescription.*
7. *Exercise your consumer rights – Unlike Medicine, Nutrition is not a regulated profession in Sri Lanka. Check the credentials of the prescriber and if possible for any conflicts of interest.* Mind the quacks but beware of the industry-friendly professionals and self-proclaimed Nutrition Experts.

Knowledge is the key to good health & survival – not 'Branded Food'. Consider the 'Seven Golden Survival Rules' as your free 'Life Insurance Policy'.

An overview of Sri Lanka's legal, regulatory and criminal justice response for the protection of the community from harm associated with food and beverages and proposals for law reform

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Consumption of food and beverages is essential for the existence of human beings. We eat and drink foods and beverages that are both essential and not so essential for our existence. While some of the foods and drinks we take are produced and prepared by ourselves, some other foods and drinks are produced by others and processed or prepared by us before consumption. Some other foods and drinks are both produced and prepared or processed for consumption by others and we merely consume them. On a routine basis, a major portion of purchasing we engage in relates to the procurement of foods and beverages following their production, importation, processing, packaging, and distribution. When we engage in such procurement, we rely heavily on the assumption that such items of food and beverages are in a fit state for human consumption, does not contain any substances which may be harmful to the human body, and that the information provided and is available alongside and associated with the marketing and sale of such foods and beverages contain an accurate and comprehensive description of the items we purchase. Unfortunately, contemporary developments and our own experience denote that, that assumption is neither safe nor prudent.

Some of the foods and beverages available in raw, semi-processed and ready for consumption form, do not conform with relevant hygienic standards, and contains harmful substances. Even some imported foods and beverages are not immune from this allegation. Consumption of such food and beverages could cause health hazards and serious harm to the human body. Further, information contained in the marketing cum advertising associated with some foods and beverages and information available on the containers and wrappers of certain foods and beverages do not contain accurate and comprehensive information relating to such foods and beverages. Even more dangerous is the fact that some of the information provided by producers, those who process, importers, and traders, contain exaggerated and misleading information. In certain situations, the absence of accurate and comprehensive information may be due to the impracticalities associated with providing such information. In certain other instances, the absence of correct and comprehensive information, as well as providing exaggerated facts and half truths, as well as false and misleading information, arises out of deliberate decisions to mislead consumers and lure them

towards such products, and cheat consumers into taking decisions to purchase the relevant foods and beverages.

Thus, there is a compelling need to impose certain prohibitions relating to the production, processing, importation, packaging, storage, distribution, marketing and sale of certain foods and beverages and regulate such activities. Doing so is in the best interests of consumers and the society as a whole.

This presentation focuses on the existing legal, regulatory and criminal justice response relating to the manufacture, importation, processing, packaging, storage, distribution and sale of food and beverages. The presentation contains references to the existing scope of the legal and regulatory framework provided by the Food Act and the Consumer Protection Act and associated subsidiary legislation. The efficacy and the sufficiency of the regulatory and law enforcement mechanisms put in place by the Food Advisory Committee of the Ministry of Health in terms of the Food Act and by the Consumer Protection Authority in terms of the Consumer Protection Act will be dealt with in the presentation from an 'outsider's perspective'. The presentation will also contain recommendations aimed at improving the existing legal, regulatory and law enforcement mechanism, as well as the overall criminal justice response relating to foods and beverages.

ABSTRACTS OF FREE PAPER PRESENTATIONS

FP-01

The Broad Picture of Witness Competence

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Men are ordered to pay damages, evicted from premises, divorced and even convicted and sentenced on the testimony of witnesses. Our witness competence standard is enumerated in S.118 of the Evidence Ordinance, it is whether the witness is 'prevented from understanding the questions put to him or from giving rational answers to them by reason of tender years, disease of the mind or body etc..' This paper analyzes the sufficiency of this rule viz mental disorders, how it could be improved and whether a trial judge is properly equipped to assess competence.

Competence assesses whether an individual is capable of functioning as a witness. In our law, fact witnesses can only testify to facts they have already perceived. Testifying relays to the Court what was so perceived. This process therefore utilizes a number of brain functions. Selection, recall and interpretation are just a few. Psychological conditions affect these functions in different ways. Persons suffering from such conditions may satisfy the competence test but they may well speak of a fantasy, a hallucination or of an implanted memory. Certain other disorders induce witnesses to exaggerate. These exaggerations may cast doubt on the entire testimony. Should these exaggerations not be issues of competence rather than of credibility? The 'deficit' between what is perceived and what is recalled is usually a matter of credibility. But when this is occasioned by mental disorder or other similar cause, it becomes a matter of competence. The test of competence should therefore contain scope for the assessment of the psychological structure of the subject a swell.

The contemporary competence standard is therefore an over-simplification. Moreover, trial judges should be assisted by psychiatrists in assessing competence as 'credibility' only attaches to those who are truly 'competent'.

FP-02

Pre- autopsy and Post- autopsy discussions with relations by doctors

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Pre –autopsy discussions are routinely held by doctors to obtain history from relations before the autopsy to diagnose the cause of death and manner of death. In domestic violence cases wrong statements of relations are often come accrossed indicating their involvements. But history recorded during the inquest procedure has no legal value unlike medicolegal examinations of patients.

Some doctors feel that they are not legally bound to explain relations about autopsy findings and opinion (post autopsy discussion) because autopsy is done on a court order. But doctor is ethically bound to discuss the findings with relations because next of kin has the right to know about the truth. There are several advantages of post autopsy disscussion such as clearing doubts, health education, a form of psycotheraphy and a chance to request an immediate second postmortem examination. As such the unnecessary exhumations which yield very little informations can be avoided. Issues raised by relations are the very important possibilities and doubts that investigators should confirm or exclude. Unlike public discussions, small group discussions about matters related to a court trial is not considered as a contempt of court.

Unlike in Sri lanka In jurisdictions with a developed medico – legal system, the coroners are either medically or leglly qualified or have obtained a relevant degree. Furthermore, many ancillary staff like bereavement social workers, counsellors and forensic nurses are available to give the necessary information to relatives. Many jurisdictions have a policy of making the autopsy report available. In Sri Lanka postmortem report is issued only for a perticular purpose like insurance or civil case . Therefore pre autopsy and post autopsy discussions by medical offcier should be incoorperated as legally recognised steps in the inquest procedure of the criminal procedure code.

FP-03

Death of a husband with chronic renal failure due to intimate partner violence

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Introduction

Chronic renal failure (CRF) is a progressive loss in renal function over a period of time resulting from a decrease in the total number of nephrons due to multiple reasons. In CRF, abnormal platelet function increases bleeding tendency and failure of vitamin D metabolism causes renal osteodystrophy. Therefore, nonfatal trauma may leads to death of such people.

Case report

A 69 year old person with CRF was admitted to a tertiary care hospital following assault by his wife with an iron bar to both lower limbs. On admission, he was ill and unable to walk. Investigations revealed low haemoglobin and low red blood cells. X rays showed multiple fractures in both lower limbs and right wrist joint. He was managed conservatively and blood had not been transfused. He died on day four due to cardiac arrest. Postmortem examination revealed multiple abrasions, contusions, underlying fractures with severe muscle contusions and haemorrhages. Histology of the renal tissues revealed the features of chronic renal failure and occlusion of tubules.

There was similar history of battering of the husband by the wife over past one year. There was old healed fracture with callous formation in right tibia.

Conclusion

Considering the clinical situation of the deceased and the effects of trauma, the cause of death was ascertained as acute on chronic renal failure due to musculoskeletal trauma. This emphasizes the fatal outcome of the chronic disease due to otherwise nonfatal trauma.

Fatal intimate partner violence against elderly should be further explored.

FP-04

Detection of hidden forged characteristics in Fabricated Documents

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Introduction

A fabricated document can simply be defined as a tampered genuine document. Genuine documents are manipulated by insertion of new component/s or deletion/alteration of already existing component/s. Such fabrications are incorporated into documents by physical/chemical erasure, photocopying, desktop printing, type writing etc. The following cases will describe the detection of forgeries using different optical and analytical techniques.

Case 1

A Canadian permit card was submitted for examination. The card had few separable layers on which the images of two different persons were printed. Examination via VSC 6000 revealed that the image of the imposter was printed only on the front and reverse layers of the card to conceal the image of the genuine passenger present on other layers.

Case 2

A title deed executed in 1909, forwarded by the Department of Archives, was examined and found that the current entries were written with ball point pen ink after chemical erasure. Presence of ball point pen writings on such an old deed was disputed as ball point pens were first introduced to the market in 1945. Observation under UV and IR radiation could reveal the previous writings written in different inks.

Case 3

A questioned visa on a passport received from the Magistrate's Court in Negombo was examined. Only the face of the passenger produced fluorescence under UV while the rest of the visa behaved as dull UV. Different behavior under UV, cut marks and fiber disturbance observed under incident light proved that this particular fraction was taken from a different paper.

Conclusion

Whenever a document is fabricated the changes occurred in ink, paper and other components created by mechanical and electronic devices will help identifying the manipulations.

FP-05

Forensic Nurse: How it helps to improve the Clinical Forensic Services in Sri Lanka

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Introduction:

With the rapid rate of advancement of knowledge and living standards, changes in any field of practice are inevitable. Sri Lankan Clinical Forensic Medical Services should also be geared to adopt current global trends. One such relatively new introduction would be the "forensic nurse".

Objective:
The authors wish to elaborate on the usefulness of introduction of forensic nursing service to the health care system of the country.

Discussion:
Service of a forensic nurse specially trained to handle a wide array of clinical forensic scenarios could be utilized in following instances:
A-Conducting medico-legal clinics including registration of patients, fixing appointments, handing over diagnosis cards, follow up of referrals and reports
B- Examination of victims (and suspects) of alleged sexual offences, child abuse, intimate partner violence and conducting intimate body searches including pre examination preparation with explaining the procedure
C- Alcohol and other substance abuse, providing care for the detainees
D- Collection, storage, labeling, preservation and dispatch of forensic samples for varying purposes. (As a qualified assistant for forensic medical practitioner- FMP)
E- As a female chaperon for the FMP with empathy (instead of present practice of utilizing a casual labourer) and as a translator
F- Maintaining inventories of FMP patient's properties
G- Removal of dressings for examination and redressing
This will enable to strengthen the existing clinical forensic services as well as to expand the horizons of the same in the future. The inclusion of DNA in investigations and ethical aspects of examining individuals are getting momentum. This also highlights the need of a specialized forensic nursing service.

Conclusion:
A qualified, skillful, professional and devoted forensic nurse will undoubtedly add a "humanitarian touch" to medico-legal services while improving the quality of care and leaving a pleasant memory in the minds of those who are already victimized.

FP-06

The effectiveness of the techniques commonly employed in the dating of documents

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Introduction
The dating of documents is one of the most difficult tasks encountered by the document examiners. In certain circumstances it is important to know when a document was created, or whether the date appears on the document is accurate. Without evidence of the creation of a document, examiners cannot decide when a document was created. Therefore, they find answers for these problems through a variety of scientific examinations and techniques.

Objective
The objective of this paper was to discuss the effectiveness of the techniques commonly employed in the dating of documents.

Discussion
There are three fundamental approaches for dating documents. The first approach allows the first possible date of existence for a given composition of ink, toner or substrate. Since these parameters do not vary with time this approach is also called static approach. The second approach, dynamic approach, is based on aging processes of parameters over time. It measures the changes of questioned document parameters with time and determines the relative age of a document compared to others. The third approach focuses on at reconstruction of the chronology among documents or ink entries by ordering them in sequence. This is sometimes equivalent to the determination of relative age. The deterioration of inks and paper occurs due to various environmental factors and chemical reactions in the ink itself. These factors can change a document and therefore limit the ability to study it thoroughly. The static approach provides a means of straightforward to determine the age because it is based on the analysis of stable compounds found in the ink, toner or substrate. However, the dynamic approach is being developed by scientists by means of sophisticated techniques as it has not come to a standstill.

Conclusion
It can be concluded that the science of document dating is not yet an exact science.

FP-07

Prevalence of deaths and it's correlates in the paediatric medical units at a tertiary care hospital in southern Sri Lanka

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Introduction
Sri Lanka is in a phase of a rapid demographic, infrastructural transition. With these developments, the facilities and expertise in the field of medicine has also remarkably improved. Analysis and review of the death will inform the policy makers to implement recommendations using a "no blame" approach, with a focus on preventing future deaths via policy changes, changes in professional practice and response to emerging trends.

Objective
To evaluate the prevalence of deaths, its causes and correlates occurred at the medical paediatric units at Teaching Hospital Karapitiya (THK).

Method
Data was collected retrospectively from 2009 during a five year period. Socio-demographic and clinical data was collected from the records at the medical paediatric units, Office of the Coroner and the Office of the Judicial Medical Officers at THK.

Results
There were 76874 admissions and the prevalence of deaths was 0.18% (n=138). Seventy two (52%) were boys. A majority of 58.7% (n=81) were infants which was followed by 1-5 year and >5 year group which was 18.1% (n=25) and 23.2% (n=32) respectively. Although there is a significant difference in the number of deaths in different age groups, it was not statistically significant (P>0.05). 44.2% of deaths were due to infections which was the main cause of death. Congenital Heart Disease and chronic diseases accounted for 24 (17.4%) and 19 (13.8%) of deaths which were the main cause of deaths among the non-communicable diseases.

Conclusion
Although the data is not representative of the entire country, it is evident that the prevalence of deaths has reduced but infections and associated complications contribute to a major proportion of mortalities in children. Further research is needed to find out the contributory factors and the recommendations to further reduce the mortality rates.

FP-08

A statistical evaluation of illegal liquor cases in Regional Laboratory, Kurunegala

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Introduction

Illegal liquor is an alcoholic drink that produced without any legal permission. Inferior quality illegal liquor is highly unsafe for health and many social problems arise due to illegal liquor consumption. Therefore it is important to get an idea about variation of illegal liquor production in Sri Lanka.

Investigation

Government Analyst's Department, Regional Laboratory, in Kurunegala, receives court cases in illegal liquor such as kassippu, goda and toddy from sixteen districts in Sri Lanka. Since 2010, the highest numbers of court cases were received from Kurunegala and Kegalle districts while the lowest were received from Jaffna and Mannar districts. Further, in the past three years, the significant increase of illegal liquor cases was observed in Puttalum and Polonnaruwa districts. Alcohol content of these illegal liquor samples was measured at the laboratory.1,728 and 2,031 unlawfully distilled sprit samples were received in the year 2012 and 2013. The alcohol contents of these samples varied from 1.0%v/v to 84.7%v/v and 1.0%v/v to 60.3%v/v respectively. The alcohol content of unlawfully fermented liquor was observed below 15%v/v. Alcohol content of illegal toddy samples varied from 4.6%v/v to 7.8%v/v and 2.3%v/v to 7.1%v/v respectively. Further it was found that 50 % of unlawfully distilled sprit samples contained copper, higher alcohols and ketones also.

Conclusion

The analytical results revealed that there is a considerable variation in the alcohol contents in illegal liquor. Therefore, there is a high risk in consuming illegal liquor since it can lead to alcohol intoxication and poisoning. Presence of excess copper in the illicit liquor can damage the liver and kidney. Further overdose of higher alcohol and ketones present in illegal liquor will have very harmful effects on health. Therefore considering public health, strict punishment should be enforced for the betterment of the future society.

FP-09

A hidden aspect of physical child abuse: A case of voyeurism

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Introduction

Child abuse is an area in Forensic Medicine where the diagnosis and management could be difficult due to various reasons. Extended back ground information is a must where there is slightest doubt of child abuse in order to identify compounding factors and address accordingly. Here we report a case of physical child abuse, where the reason for abuse is within the child herself-voyeurism- which is hardly found in literature.

Case report

An eleven year old female child who was the third of a family with poor socio-economic back ground was brought by the Police for clinical forensic examination. School teacher has noted that the child was limping due to beating by step father. In the initial assessment step father admitted that he assaulted the child. Deep inquiry revealed the reason for assault, which was to prevent the child from watching parents having sex, which she used to do repeatedly, in spite of severe warning. Multiple contusions and abrasions in different stages of healing on face and limbs were detected on examination. A case conference was held and a diagnosis of physical child abuse was made and she was diagnosed as a case of voyeurism, which was treated with behavioral therapy while keeping her under parental custody with supervision of medico-legal authorities.

Discussion

Voyeurism is a psychosexual disorder in which a person derives sexual pleasure and gratification from looking at the naked bodies and genital organs or observing the sexual acts of others, usually hidden from view of others. It is rare in females, common before 15 years and this child did not engage in any sexual activity after watching sexual acts. Importance of extended back ground information is highlighted in the management of child abuse to overcome misdiagnoses and identify rare form of presentations.

FP-10

Possibility of bypassing the legal system of "Medico-legal cases" treated in Government Ayurvedic hospitals

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Introduction

When a person with trauma or any criminal behavior comes to a government hospital in addition to the treatment and management an investigation through Police/JMO is also done. However thousands of patients are treated daily at many government ayurvedic hospitals too without police/JMO investigations. A fracture can be caused in many ways namely following child or elderly abuse, or result of a fatal accident or even upon a murder. Unless there is a mechanism at ayurvedic hospitals to refer at least suspected cases to police/JMO the possibility of bypassing the system is unavoidable.

Objective

The possible outcomes of this practice have to be investigated in detail.

Discussion

An abused child with a fracture can easily be fast tracked through ayurvedic medical treatment, unless the treating doctor has been preoccupied with a suspicion of possible child abuse. The MBBS, or post graduate training compels the western medicine doctor to investigate trauma/suspected cases using the collective picture of the injury pattern, history and investigative findings and then to arrive at a conclusion regarding the circumstances of the injury. Whereas in ayurvedic medicine mostly they adhere to the management of the patient rather than going into other medico-legal details.

Conclusion

It is not adequate to teach and assess comprehensively the subject of the forensic medicine in the ayurvedic medical school, without emphasis on practicing the regulatory mechanism to investigate suspected medico-legal cases. As such author wish to extend this idea to the members of the Medico-Legal Society in order to implement a proper surveillance system in collaboration with other disciplines like the Ministry of Health and Justice at least as an initiative at the Ayurvedic hospital at Rajagiriya and then to extend islandwide.

FP-11

The Role of Government Analyst's Department on quality of Sri Lankan Black tea-A case study

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Introduction
Sri Lankan Black tea has kept a considerably remarkable reputation among the international tea consumers because of its unique taste and quality. Production is carried out by acceptable processes notably withering, leaf macceration, aeration and drying of the tender shoots of varieties of the species *camellia sinensis.*
A case was submitted to the Government Analyst's Department by CID for the chemical analysis of tea samples which was suspected to be of poor quality and ready to be exported.

Objective
Examination of the samples for the conformity with the standard SLS(135:2009) for black tea in order to find out whether the samples are of poor quality or not.

Methodology
Chemical analysis was carried out on 24 tea samples submitted using the methods specified in the standard SLS(135:2009) for Black Tea.

Results
Out of the 24 tea samples only 4 samples conformed to the specifications of SLS (135:2009) for black tea. All the other 20 samples had high fibre contents. Out of 20 samples 04 samples had high Total Ash content, 04 samples had high Alkalinity and 3 samples showed low water extract values.

Conclusion
Chemical analysis revealed that all samples which did not conform to the SLS Standared had high fibre contents due to a high amount of stem parts in the samples.
The samples which did not conform with respect to alkalinity and water extract had been treated with a basic chemical substance or substances or such substances. The proper investigation and prompt action of CID officers and accurate scientific findings of the Government Analyst's Department prevented exportation of poor quality tea and thereby protected the image of Sri Lankan Black Tea.

FP-12

Legal and psychological analysis of "criminal offenses" performed by Exorcists in Sri Lanka : Case reports

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Introduction

According to traditional belief, evil spirits can be expelled through the service of a spiritual warrior. Such people are empowered with their own rules and speculations in their own pseudosciences. Cases mentioned below give reasons for the author to analyze the related psychological and legal aspects.

Case reports

1. A goblin had entered a one month old baby causing poor sucking. The "Poosari" had shaken the baby to chase the goblin away causing her death.
2. A witch doctor at "Deevalaya" had assaulted a wife in order to chase the bad evil when she was brought there by the husband following a panic attack.
3. To expel the demon, a knife had been inserted into the mouth of a girl causing her death.

Some attribute certain disease conditions to unseen super powers such as demons, ghosts etc and hence they believe they can obtain a cure through the so called spiritual protectors. Psychological analysis explains the "aawesaya" as a disease condition called a Trance. In the third case illustrated the perpetrator happened to insert the knife in a state the state of "aawesaya". What would be the mens rea in the said act/s according to legal analysis? Diminished responsibility would be the psychiatric diagnosis? Can they be exempted from punishment for these criminal acts?

Conclusion

Making of the public aware of psychiatric illnesses like Trance, could prevent many deaths!

FP-13

A study on knowledge and help seeking behavior regarding child abuse among school children

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Introduction
Child abuse is a complex medical and social problem in the world affecting millions of children. In the recent past awareness programs have been carried out in schools targeting the at risk population. But rarely is the effectiveness of these assessed.

Objectives: To evaluate the knowledge of school children regarding modes of child abuse and help seeking behavior in such situations.

Methodology
A randomly selected sample of 222 school children were provided with a questionnaire on child abuse and help seeking behavior. Marks were given and the results were analyzed.

Results
Knowledge of the legal age to be called a child, to vote, to get married & to do a job was 79%, 49%, 36% & 82% respectively. 57 % were unaware of sexual abuse as the commonest form of presentation in our country. If felt they were being abused, 87% of the children were ready to talk to someone about it and 98% of students chose their parents. 71% of the students planned to get away from the place if they encountered a sexual assault. 97% were aware about the presence of a school guidance counselor and 88% were ready to talk to her/him. 63% knew that there were helplines available. As the source of information to fill the questionnaire 17% chose school.

Conclusion & Suggestions
It appears that the level of knowledge among the respondents regarding the legal age limits for marriage and doing a job was less than 50%. More than 85% of respondents were ready to talk to parents or the school guidance counselor following abuse. As a very low percentage chose school as the source of information for their current knowledge, it is recommended to carry out teaching programs at school level.

FP-14

'Khat' a stimulant Narcotic smuggled to Sri Lanka

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Introduction

Khat (Catha edulus) [celastraceae] is a stimulant narcotic known by a variety of names such as qat, kat and chat etc. It is a native plant in Africa and Arabian Peninsula. The leaves of khat are chewed for a stimulant effect Cathinone is the major psychoactive component of the plant Catha edulis. Cathinone is a monoamine alkaloid and an amphetamine like stimulant which is said to cause excitement, loss of appetite and euphoria.

Case report including investigation/Results

Recently in December 2013 Sri Lanka custom authorities made a siezure of nearly 50 kilograms of khat plant material at the Colombo International Airport. This is the first time khat smuggling is detected in Sri Lanka. A representative sample from the confiscated exhibit was submitted to the Narcotic Laboratory of Government Analyst's Department in January 2014. Cathinone was extracted and confirmed by Thin Layer Chromatography and GCMS.

Conclusion

Khat is classified as a narcotic and illegal to use, sell and possess in many countries such as the United Kingdom, Poland, Norway etc.
In Sri Lanka cathinone is listed in the Fourth schedule, part I of the UN "Convention Against illicit traffic in Narcotic Drugs and Psychotropic substances" Act. No. 1 of 2008.
However, it is interesting to note that there is no legislation regarding khat in Sri Lanka and steps should be taken to include khat in the relevant Sri Lankan Narcotics legislation.

FP-15

Suicidal sulphuric acid ingestion: A case report

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Introduction

Deaths from ingestion of sulphuric acid are rare. Many of the cases reported are suicidal and are usually from south Asia.

Case report

A 64-year-old man working as a swimming pool attendant was found dead by the swimming pool. There was no history of suicidal tendency. Past medical history from the relatives indicated that he had been suffering from hemorrhoids Examination of his quarters revealed a plastic can of sulphuric acid with a pierced lid. There was no suicidal note.

On postmortem examination, there were black leathery lesions around the mouth with multiple drip marks directed downwards, to the neck and upper part of the chest. Internal examination revealed approximately 300ml of blackish fluid within the peritoneal cavity. The mucosal surface of the tongue, oropharynx was swollen and ulcerated. Esophagus also showed grayish discoloration. The stomach mucosa showed full thickness necrosis with an 8 cm diameter perforation on the greater curvature of the stomach. The cause of death was given as acute sulphuric acid poisoning.

Conclusion

Injuries from exposure to corrosive substances is common in Sri Lanka, mainly as accidental & homicidal circumstances. Although suicidal acid ingestion is occasionally seen with weaker acids such as acetic acid or phenolic substances, ingestion of strong acids such as sulphuric acid are rarely encountered. The medico-legal issues & pathophysiology of acid ingestion are discussed in this case report.

FP-16

Fault evidence on a vital point / contradicted by the medical evidence

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In the recently judgment of the Court of Appeal in *Prageeth Athurupana v. Attorney General* (CA 126/2009 decided on 06/02/2014), the faults evidence given by a prosecutrix contradicting the medical evidence was evaluated.

As narrated by the prosecurtix in her evidence, on the day of the incident when the she was all alone at home, the appellant came and blindfolded her with a piece of cloth. The appellant took her on his shoulders for a distance which had been described by her as 4 k. m. The appellant put her on the ground using force, raised her frock and removed her under garments. The accused was armed with a knife and committed the act of sexual intercourse on a shrub jungle where thorny bushes were found. Prosecutrix said that she sustained injuries on her legs. Further, she had said that it was her first sexual intercourse.

Prosecutrix was examined by a JMO on the same day of the incident. Although she said that it was her first sexual intercourse, doctor reported that he found old tears in her hymen. According to the oral testimony, prosecutrix sustained abrasions on her legs, but the doctor did not find any such abrasions. Doctor only found a nail mark on her breast. Even though it was stated that the rape was committed on a land with thorny bushes, there were no injuries on her buttocks.

The medical evidence contradicted the prosecurix's version. The Court of Appeal acquitted the appellant purely on the basis that in a rape case if the prosecutrix has given false evidence on a vital point, it is dangerous to act on her evidence even if her evidence is corroborated.

FP-17

A rare case of sudden death in young adult

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Introduction

Congenital diaphragmatic hernia (CDH) commonly present in the neonatal period with respiratory distress. Late presenting CDH is rare and the majority present with non specific gastro intestinal or respiratory symptoms. CDH with mediastinal shift is life threatening emergency.

Diaphramatic hernias through the postero lateral foramen of Bochdalek (BH) represent the commonest type of CDH. It allows herniation of abdominal organs into thoracic cavity.

Case report

19 years of psychiatric patient presented with epigastric pain and shortness of breathing following ingestion of a metal key 2 days back. . There was no associated history of trauma or fever. He had cardiac arrest on admission then underwent cardiopulmonary resuscitation.

On auscultation breath sounds and air entry was reduced in left side chest. Ultra sound scan reveals thick food particles in the left chest cavity and chest Xray showed left side pleural effusion with mediastinal shift. Patient treated as case of oesophageal perforation

About ten hours after admission he died. Post mortem findings reveals congenital left side strangulated diaphragmatic hernia. A small metal key found in caecum and no evidence of bowel or oseophageal perforation

Conclusion

Cause of death is strangulated diaphragmatic hernia. Presentation of Bochdalek diaphragmatic hernia in adult age is exceptionally rare. The clinical symptoms of diaphragmatic hernia are frequently vague and non specific including respiratory and gastrointestinal complaints. Clinicians should be aware about these symptoms. In this case ingestion of metal key and repeated vomiting causing reverse peristalsis may have be worsen the pre existing diaphragmatic hernia

FP-18

A comparative analysis of National Guidelines of Medico-legal care of survivors of sexual violence of Sri Lanka and India

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National Guidelines of Medico-legal care are important to a country to deliver equal services to the victims. This is specially so in survivors of sexual violence to have a degree of uniformity in approaching, treating, management and documenting. Indian and Sri Lankan National Guidelines of were published in 2014 where Indians preceded Sri Lankans by three months. The comparative analysis of the guidelines is to find whether each can learn from the other.

The Indian Guideline is a 74 page comprehensive document written in a semi structured manner while the 40 page Sri Lankan Guide is more structured with bullet points. Although both documents include aims of achievement as improving of the quality of the medico-legal services delivered to sexually assaulted survivors, Sri Lankan Guide has adopted more of a protective statement of intent to the doctors. One of the main differences in the Sri Lankan Guide is the grade of recommended practices based on the facilities available. The Indian Guideline is more comprehensive in the areas of informed consent, respect, autonomy of survivors including police intimation whereas Sri Lankan Guide only describes the guiding principles. The Indian guide give specific instructions on dealing with persons from marginalized groups such as those with disabilities, sex workers, persons with alternative sexual orientation , children, persons facing caste, class or religion based discrimination. The Indian Guide also highlights gender and cultural sensitive examinations where standard operational procedures in examinations are recommended. Both guidelines though similar in technical aspect, Sri Lankan Guide emphasizes more on trace evidence collection. Indian Guide has several annexes including laws related to sexual assault and guide for opinion formation.

There are many similarities and difference. Thus, learning from each other will enable to improve the future versions. However, commitment of the administrative and political authority on implementation is the need of the hour.

FP-19

Blood Alcohol analysis using Automated Headspace GC

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Introduction

Direct injection of biological samples into GC columns has been used in the past as the method of sample introduction for blood alcohol analysis in toxicology cases. This typically leads to column contamination and poor analytical performance. Therefore many laboratory analysts use extensive sample preparation techniques to extract and concentrate the compounds of interest from this unwanted non-volatile material. These extraction and concentration techniques can become time consuming and costly. Headspace analysis avoids this time and cost by directly sampling the volatile headspace from the container in which the sample is placed. An aliquot of the vapour in the headspace is delivered to a GC system for separation of all the volatile components.

Objectives

Headspace gas chromatography is a technique used for the simultaneous concentration and analysis of volatile compounds. The popularity of this technique has grown and has gained worldwide acceptance for analysis of alcohols in blood and in pharmaceutical products and it has become the method of choice for the routine analysis of blood alcohol.

Method

Automated headspace connected to a GC with FID was used for the analysis. 16% v/v n-propanol in deionized water was used as the internal standard. The mixture of ethanol, methanol, acetone, acetaldehyde and isopropanol standards were prepared in deionized water to check the specificity. For the method validation 20- 320 mg/100ml ethanol in blood samples were prepared to obtain the calibration curve. The method precisions were calculated using the standard of 80 mg/100ml and the recovery percentages were calculated using 80,100, 120 mg/100ml standards.

Results and Conclusion

The calibration curve was linear in the range of 20-320 mg/100 ml. The correlation coefficient was 0.998. Precision was satisfactory with a 3.5% relative standard deviation. Therefore the method is accepted and used in the routine analysis of blood alcohol concentration in the samples received by the Forensic Toxicology Laboratory in the Government Analyst's Department.

FP-20

Trends and challenges of facial trauma presented for medico legal examination

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Introduction
Maxillofacial injuries occur in a significant proportion of medico-legal cases and pose a challenge in formation of a medico legal opinion at times. The injuries can involve soft tissues such as burns, blunt and sharp injuries, or fractures of the facial bones as well as trauma such as eye injuries. The penal code of Sri Lanka identifies disfiguration to the head or face as a form of grievous hurt.

Objectives
The study was conducted to analyze the pattern, magnitude and the medico legal challenges of maxillofacial trauma in victims presented for medico-legal examination in a Teaching Hospital in Sri Lanka.

Methodology
A retrospective analysis was done on maxillofacial trauma presented for medico legal examination during a period of 2 years. The information was gathered on a proforma to full fill the objectives. The data was analyzed using SPSS statistical package.

Results
Out of the 200 cases of maxillofacial trauma 161 (81%) were males while there were 39 (19%) females. 109 (55%) were due to assaults while there were 77(39 %) following road traffic accidents. Blunt soft tissue injuries were observed in majority 150 (75%). Forehead was identified as the commonest area of injury 114(57%). Commonest associated injuries were found on limbs (27%) Isolated facial injuries were observed in 78(39%) while majority (55%) out of them wasnon grievous. There were 6 (8%) of isolated facial injuries in which the category of hurt was not ascertained but a remark on possible facial disfiguration was made.

Conclusion
Facial injuries were commonly reported following assaults and majority of them were blunt soft tissue injuries. Providing a strong medico legal opinion on the category of hurt in facial trauma is a challenge to the medical experts due to the difficulties in determining possible facial disfiguration.

FP-21

The challenges encountered in examination of a survivor of sexual assault by a stranger; A case report

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Introduction

Sexual assault by strangers though subjected to many myths and speculations is a poorly understood as well as poorly researched area due to lack of reporting and difficulties in investigations.

Case Report

A 26 year old working girl lodged a complaint of a sexual assault by a stranger at the local police around 2.30 a.m. stating that she was abductedr in a white car while returning home 4 hours ago. The girl was a trainee accountant who worked overtime on that day. After the incident she has gone home, washed herself and changed clothes before coming to the police station. During the incident her spectacles were broken. Police took her to the scene and then brought for medico-legal examination 11 hours after the incident. Examination revealed that she was anxious, disturbed and was in a fear. Nose, right ear and neck had abrasions and lacerations. The genital examination revealed tenderness over the area and a fresh bleeding from a hymenal tear in the posterior margin. Low and high vaginal swabs were negative for spermatozoa. Cervical swab or internal vaginal examination using speculum was not done since she claimed to be a virgin prior to the incident. Emergency contraception was given and she was referred to the psychiatrist and the STD clinic.

Conclusion

Although corroborative scientific evidence is the main and may be the only evidence in proving sexual assaults by strangers loss of evidence along the investigation process is common. Ignorance of the victims regarding scientific evidence, procedural delays, not obtaining proper samples are some to name. Improving public awareness on evidence collection and developing standard operative procedures are important to overcome the issue.

FP-22

Corex-D poisoning in Sri Lanka

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Introduction

Corex-D is a cough and cold syrup preparation composed of dextromethorphan, chlorpheniramine and ephedrine. Even though Corex-D is a prescribed drug, over the counter availability, legality, inexpensive price and the extensive abuse information on various websites lead to misuse and abuse of Corex-D syrup.

Case studies

Non fatal cases due to ingestion of large dose of Corex-D by poly drug users are very common in Sri Lanka. But deaths from overdose or poisoning with Corex-D are very rare. We report the deaths of seven teenage males in one incident, who purposely ingested large doses of Corex-D for recreational purposes and sixteen non-fatal cases of Corex-D abusers.

In non-fatal cases, blood and/or urine samples of suspected drug abusers and blood, urine, and/or bile, vitreous humor and stomach of fatal cases were received for analysis. Liquid-liquid extraction with chloroform was carried out and qualitative analysis of drugs and their metabolites in biological specimens was carried by GC-MS.

The results revealed that the specimens of seven fatal cases contained dextromethorphan metabolites (dextrophan, morphinan-3-ol,7-methyl) and/or non-fatal cases, dextromethorphan metabolites were identified in one case together with tramadol. Five cases were positive for tramadol only, while one case was positive for both tramadol and Benzodiazepine. In one case tramadol and nicotine were identified. In three cases, only Morphine was identified. One case was positive for benzodiazepine only, while one was positive for both phenobarbital and dextromethorphan metabolites. No drugs were identified in three cases.

Conclusion

The results revealed that the cause of death in fatal incidents was due to Corex-D poisoning. Further, according to the results, it is evident that there is a growing trend in poly-drug use among drug addicts. Hence necessary steps must be taken to control this situation.

FP-23

Medico-legal challenges in identifying body packers

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Body packing is a recognized mean of smuggling worldwide. First reported case of body packing of drugs in medical literature is a case of swallowing Hashish packed in condoms in 1973. In addition to drugs, valuables like gold are found to be transported across boarders in a similar fashion. But we failed to find such incidents in the medical literature.

There are three type of body packing. First type is the “swallowers” who intentionally swallow a large amount of transporting material before crossing the international boundaries. Second type is the “pushers” who use their rectum or the vagina to transport smuggling material. Third type is the “stuffers” who swallow small amounts of material because of fear of arrest at the time of using or trading it.

In this paper it presents four different cases of body packing which was examined at the JMO office, DGH Negombo. It discusses the different mode of presentations of body packers, the way they were examined and investigated, and their management. Further in this paper it eleberates the difficulties and challangers encountered during the investigation. Such problems would increase in the future due to advancement of packing techniques.

Diagnosis of body packing is extremely difficult. Understanding regarding the subject is minimal in the medical staff. Further studies regarding this subject is essential for proper identification and management of body packers.

FP-24

Case study of Glyphosate (Round up) poisoning

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Introduction

Glyphosate is a weedicide, which contains carbon and phosphorous ($HO\text{-}COCH_2NH\text{-}CH_2\text{-}PO\text{-}(OH)_2$). However it does not affect the nerve system in the same way as organophosphate insecticides and is not a cholinesterase inhibitor. Acute toxicity of Glyphosate itself is very low. Glyphosate itself is relatively harmless, some of the products with which it is formulated have a rather less benign reputation. The most widely used type of surfactant in Glyphosate formulations are ethylated amines. Members of this group of surfactants are significantly more toxic than Glyphosate.

Method

An UV/Visible Spectrophotometric method was used in the qualitative and quantitative determination of Glyphosate in body fluids. It was found that the method is more suitable for the analysis of Glyphosate in stomach contents, urine, water and other beverages. In this method glyphosate is reacted with sodium nitrite under acidic condition to quantitatively yield N-nitrosoglyphosate which has the absorbance maximum of 243nm.

Case studies

Nine homicidal and suicidal cases suspected to be due to glyphosate poisoning received during the year 2012 to 2014 will be discussed in this paper.

Results

Glyphosate was identified in the stomach/stomach contents in 08 cases, intestines in 03 cases, liver/kidney in 01 case and urine in 01 case. Further, the suspected liquid or poison bottle forwarded in 03 cases, the suspected beverage samples sent in 02 cases and vomitus sample sent in 01 case were positive for Glyphosate.

Conclusion

Even though, Glyphosate is a class III poison according to the WHO pesticide classification on hazards, the reported cases show that there is a growing trend in the community to use this pesticide also as a weapon for both suicide and homicide. Therefore, strict regulations must be introduced by the relevant authorities to control the access of this poison to unwanted hands.

FP-25

Death caused by ill-fitting dental prostheses in a case of an assault

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Introduction
History is an important part in medico-legal investigation of a death. In this case, the relatives of the deceased claimed that the death was due to an assault.

Case report
A 40 years old man was admitted to a local hospital following an assault, after taking alcohol. He was admitted with chest pain and ECG showed ischaemic changes and transferred to GH Kandy; while on the way he was coughing and found to be struggling to breath and dead on admission to GH Kandy.

Autopsy ordered by Magistrate, Kandy. History reveals that he had been assaulted while he was after taking alcohol. There are no significant illnesses in the past.

Scene of assault did not reveal any significant findings. In external examination there was cyanosis, petechial haemorrhages in both eyes. There are two superficial contusions seen, two incisor teeth was deficient in the lower jaw.

Internal examination revealed, denture obstructing the laryngeal part of the pharynx with vital reactions in pharyngeal wall. Lungs were oedematous, occlusion of the coronary arteries with ischaemic scarring in the myocardium. Gastric contents were smelling of alcohol with blood alcohol level of 185 mg/ 100ml.

Conclusion
The death was due to aspiration of ill-fitting denture in a patient who was under influence of alcohol (choking). Choking is blockage of internal airway, usually between the pharynx and bifurcation of trachea. Alcohol intoxication is a well known contributing cause for choking.

FP-26

Uncommon Maternal Death

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Introduction

Pregnancy places a woman at some risk of illness and death. Cerebrovascular complications are uncommon in women of childbearing age; however the literature review shows the risk of stroke and CVA complications are increased in pregnancy and puerparium compared to non-pregnant women in same age.

Case History

A 29 year old married P3C3 mother died after 30 days of LSCS. History of iron deficiency anemia in during 2nd and 3rd trimesters and she underwent emergency LSCS due to back pain in the 35th week of pregnancy. She developed severe headache, vomiting and altered behavior on the following day. On the second day following surgery, her GCS was 8/15 and the clinicians have found that the fundus was normal but had mild neck stiffness. She was transferred to a tertiary care hospital and died after 30 days. At Autopsy there was brain oedema and thrombi occluding both internal carotid arteries.

Discussion

The accurate prevalence and incidence rates of internal carotid artery (ICA) occlusion are difficult to ascertain as ICA occlusion can remain asymptomatic. In a retrospective, population-based study on patients with symptomatic ICA occlusion, the incidence rate was 6:100000.

Conclusion

ICA occlusion is an important cause of cerebral ischemia. The clinical cause of ICA occlusion is variable, from being a completely asymptomatic to devastating strokes. In Sri Lanka, non-availability of morphological and functional imaging techniques for early detection of the antenatal and postpartum cerebrovascular complications especially in peripheral hospitals should be addressed.

FP-27

Quality study of coconut oil in the Sri Lankan Market

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Introduction

Coconut oil is one of the most important oils in the tropical region. It is essential in Sri Lankan diet. Almost 50 percent of the fat in coconut oil is made of lauric acid, a compound with unique health promoting properties. When the oil becomes rancid, it creates destructive free radicals which cause irreversible damage to cells. According to Standards, the iodine value of coconut oil should be between 7 and 10, the saponification value should not be less than 245 and it should not contain more than 1.0 % of free fatty acids (FFA) expressed as lauric acid. According to above standards, the quality of the coconut oil can be classified as genuine adulterated and poor quality.

Objective

To determine the quality of coconut oil in Sri Lankan market

Methodology

Samples were submitted by Public Health Inspectors from all over the country and 124 samples which met inclusion criteria were analysed using standard methods as given in SLS 32:2002. Samples which were not sufficient were excluded. Free fatty acid content, saponification value and iodine value were analysed with qualitative test for adulterants. Values were analysed using percentages and test of significance (ANOVA- test).

Results

Out of 124 samples analysed, 31 were genuine (25%), 8 were of poor quality as high free fatty acid content (6%), 27 were adulterated (22%) and 56 contained vegetable oil other than coconut oil (47%). Out of 75% of the non-genuine samples, 69% was found containing vegetable oil which was significantly higher (P=0.000, coefficient value 0.795).

Conclusion

The results revealed that most of the samples submitted as coconut oil contained other vegetable oil. This is due to the introduction of vegetable oil to the local market and people using imported crude palm oil for a cheaper price. To prevent this adulteration of coconut oil, legislation should be expeditiously introduced.

FP-28

Intimate partner violence kills

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Introduction

Gender based violence (GBV) is found from womb to tomb. In article 1 of 1993 UN declaration on elimination of violence against women offered the first official definition of GBV. An important sub topic of this aspect is Inmate partner violence (IPV). Medicolegal management of this problem is not yet being adequately addressed. It should be multidisciplinary approach including medical, legal, police, psychological and social workers. In Sri Lanka, even though this happens in different levels, there is no proper coordination among professionals. This leads to improper management of cases and ultimately end up with fatal outcomes.

Back ground History

Following case discussion is based on four cases of IPV ended up with fatal outcomes. In one case, following long term family conflict and multiple hospital visits, wife jumped into a lagoon with children resulting death of the children. In the second case, following long term family conflicts and multiple hospital visits, the wife and child were found dead due to burns. Another two instances, following long term family conflicts and multiple hospital visits, the wives were found buried after being killed with manual strangulation and blunt force trauma respectively.

Conclusion

Though the above wives had visited the hospital several times, IPV had not been identified due to the absence of a screening tool specific to Sri Lanka. Otherwise, they could have been identified and referred to a “Mithuru Piyasa” and deaths may have been prevented. Therefore, evidence based management plan should be developed for IPV victims in Sri Lanka.

FP-29

Globalization, Unrestrained Free Trade & Globesity: Traditional vs Transnational Diet: Consumer Rights & Professional Obligations

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Introduction:
Post World War II globalization is partly the result of planning by politicians from the Global North to break down borders hampering trade. Globalization is dubbed 'neo-economic colonization'. Transnational Companies (TNCs) undermine time-tested 'Traditional Diets', food cultures and agricultural practices to boost the sale of highly unnecessary, harmful and potentially harmful ultra-processed 'Transnational Diet' (i.e. fizzy drinks, imitation milk, margarine, unnecessarily fortified breakfast cereals, noodles, malted milk etc.), Genetically Modified Food and agro-chemicals. Monteiro et al. (2010) highlight the need to enact laws to protect the public from such commercial exploitation.
Globalized, 'unrestrained' Free Trade of highly processed food products is creating a global epidemic of obesity (Globesity) and diabetes leading to premature death. The public have an inalienable right to be informed fully and in a timely manner regarding food and health issues.
Objectives: To educate and empower consumers, professionals and policy makers regarding the perils of ultra-processed food and the globalized food trade.

Methods
Review of data on food, health and agriculture, supplemented with observations on consumer manipulation via advertising, professional associations, professionals and INGOs.

Results
Food Industry engage in aggressive, unethical, 'Brand Promotion' via print and electronic media using trade puffery, legal loop holes and regulatory lapses. Ultra-processed food products are also promoted through direct and indirect, unethical medical and nutrition promotion and patronage. TNCs buy professional collusion or silence via unethical sponsorships, research grants etc. Consumers are duped in to purchasing harmful and potentially harmful food products.

Conclusions
In most countries, consumer protection comes with extra sharp teeth in the areas of civil and criminal liability. Sri Lanka lags behind and there is a strong need to reform the consumer justice system in Sri Lanka (Gunatilaka, 2002).The public, professionals and the policy makers have a right to use the Precautionary Principle to protect public interest.

FP-30

Value of minor trauma in the diagnosis of physical child abuse; the law of common man

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Introduction
According to the definition of Meadow (1989), child abuse is defined as treating a child unacceptable for given culture at any given time. Major criteria for diagnosis of physical child abuse include sever, multiple, and patterned injuries with different stages of healing. Sometimes, even a single, minor injury may be sufficient to diagnose physical child abuse based on how much it is unacceptable to that particular culture at any given time.

Background history
When single minor trauma is found, the criteria that could be used to decide whether it is unacceptable to culture at any given time include; if (a) Severe pain, (b) Severe disfiguration, (c) Negligence and lack of care such as injuries to main members (d) Unacceptable punishments such as biting, burning, pinching or tying to an object and (e) Severe mental trauma such as non-sexual genital injuries.
Such single minor injuries include deep injury on the body, bite mark, pinch mark in genitalia, deep patterned burns such as cigarette burns and ligature marks. Lots of information can be gathered from minor injuries and their consequences such as how much of care was rendered etc.

Conclusions

Therefore, new criteria for the diagnosis of physical child abuse is introduced using single minor injuries. But there is no objective and defined way of deciding how much the trauma is unacceptable for the culture at a given time. Therefore, this should be decided by law of common man, that is, if the ill-treatment of the child is unacceptable to a common man in the society.

FP-31

"Right to Food", is it a Fundamental Right?

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In April 2001, the People's Union for Civil Liberties (PUCL), Rajasthan, India filed a writ petition in the Supreme Court of India seeking legal enforcement of the 'Right to Food'.

The PUCL claimed that Central and State Governments have violated the Right to Food by failing to respond to the drought situation, and in particular by accumulating gigantic food stocks while people were starving.

In the case of *People's Union for Civil Liberties v. Union of India & Ors*, Writ Petition (Civil) No.196 of 2001 (known as "the Right to Food Case") it was argued by the Petitioners that 'Right to Food' is an implication to Life enshrined in Article 21 of the Indian Constitution.

Over time, the scope of this action has considerably expanded. Today it covers a wide range of issues related to the right to food, including the implementation of food-related schemes, urban destitution, the right to work, starvation deaths, maternity entitlements and even broader issues of transparency and accountability.

The final Judgment of this case has not yet been pronounced, but the several interim orders had made a considerable implication on the state responsibility to uphold the 'Right to Food' which every human being is entitled for. In some of the interim orders made in this case, some significant orders were made in order to preserve the right to food of the people.

Further the Supreme Court of India has appointed two 'Commissioners' for monitoring the implementation of the interim orders and to ensure compliance by the relevant state entities.

However, in Sri Lanka though the Right to life has been accepted by the Superior Court's decisions and Indian judgments, and these have been used in many Public Interest Litigations, the Right to Food has not yet been recognized as a Fundamental Right either by a Constitutional provision or by the Superior Courts' decisions of fundamental right applications or writ applications.

FP-32

A delayed postmortem of a surreptitiously disposed dead baby

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Introduction

In today's society, the needs of people are varied. People's needs clash with their social acceptance. In this setup, the rate of illegal terminations of pregnancy has increased. The legal and health systems in a country are often needed to detect, prevent and manage such situations.

Case report

Police received a phone call from an unknown person on the 1st of December 2012, at night. It was regarding a body of a baby, left near an abandoned land. Police handed over the body to a tertiary care hospital. The next day, a court order was obtained for a judicial postmortem but the investigating police officer received an immediate transfer to a new station and the file with the court order had been left without handing over properly. Nearly after one and half years, the relevant authorities realized that a postmortem was not done, a fresh court order was issued and it was done.

At autopsy, a foetus wrapped in a paper was identified. All the members of the body were found. No evidence of violence. The length was 23cm and according to the Hess's rule, the foetal age was 16 to 20 weeks. According to radiological and odontological assessments, approximate foetal age was 18-19 weeks.

Conclusion

The approximate foetal age was ascertained as four and half months. Therefore, the foetus is non-viable. Spontaneous or induced abortion could not be ascertained. Preservation of a foetus in a refrigerator, at a busy mortuary for more than 1 ½ years should be commended.

FP-33

Physical child abuse by a close family relative

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Introduction

Any form of child abuse can cause negative effect on a child's physical, mental and social development. Usually the abuser of physical child abuse is mother or father of the child. We present a case where the abuser was the brother of the mother.

Case Report

A 6 year old girl of a single mother was brought from a government home to a tertiary care hospital with a court order for medico legal examination. When mother left to work, child had to stay with her uncle. She had been assaulted with a long metal rod by her uncle three days ago to the back of her legs as punishment for bed wetting. In previous occasions too, she had been punished verbally and physically and sometimes, as a punishment food had not been given.

Examination revealed pediculosis, tramline contusions, contusions of different stages of healing and hypo pigmented scars.

She was admitted for further investigations and was found to be having iron deficiency anemia, developmental delay in fine motor and social, and communication skills with a developmental age of 3 ½ years.

Conclusions

Child abuse and neglect was the only cause found for the developmental delay in this child. Further research is needed to explore specific out comes due to child abuse. A national guideline for examination of physical child abuse should be implemented.

FP-34

Misuse of rectified spirits imported under duty exemption facility exposed

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Case History: A company manufacturing disinfectant for exportation had imported rectified spirits under a duty exemption facility. The said company has declared that they use ethanol as the main raw material to manufacturer this, but the analysis reports which have been previously issued for the export product revealed that they contained only traces of ethanol. Hence the Special Task and Vigilance Division of Sri Lanka Customs suspected the claimed manufacturing process for misuse of imported ethanol, and requested the Government Analyst's Department to subject samples for analysis to find out the exact positions in this regard.

Methodology

Sampling : Four samples were collected from the disinfectant manufacturing factory during a raid by the Customs.

The Company was asked to prepare the disinfectant according to their recipe at the laboratory in the presence of the Government Officers and samples of raw materials, the semi-finished product and the finished product were collected. The sample of the product to be exported was collected from the manufacturing line.

Laboratory Analysis: Ethanol of the semi-finished product, finished product and the export product was extracted into the brine solution using the pet-ether brine solvent system. Direct strength of the raw material ethanol and the distilled strengths of the extracted semi- finished product, finished product and the export product were measured using the hydrometer. Confirmation of Ethanol was carried out by Gas Chromatography with FID detector using a RTX-Wax capillary column

Results: The analytical results revealed that Ethanol content of the raw material ethanol, the semi- finished product and the finished product was 95.4%, 62.4% and 58.6% respectively. Only traces of ethanol were identified in the sample declared to be exported.

Conclusion: The chemical characteristics of the finished product were not similar to that of the declared export product. Ethanol has not been used to manufacture the disinfectants as declared by the company. A clear abuse of the rectified spirits importation facility under the duty exemption facility.

FP-35

Awareness on legal concepts and ethical concepts related to sexual offences among 1st year medical students and pre-intern graduates

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Introduction

Sexual offences are frequently encountered and considered as a crime against basic human right. It is crucial to improve the awareness on legal and ethical aspects of sexual offences among medical professionals where the knowledge should be transferred via undergraduate curriculum. By assessing and comparing the awareness on legal as well as the ethical concepts related to sexual offences, we intend to assess the need to integrate these concepts in to the current undergraduate curriculum

Objective

General objective was to analyse the awareness on legal and ethical concepts related to sexual offences among a cohort of medical students on commencement and completion of the medical undergraduate curriculum.

Methodology

Study was conducted as a descriptive cross sectional study using a self-administered questionnaire. The questionnaire focused on five hypothetical scenarios related to sexual offences. Responses were collected ensuring confidentiality. The data was analysed using SPSS software.

Results

141 1st year students and 55 pre-intern graduates participated in the study. There were 112 females and 84 males. In all areas there was no statistically significant difference between males and females in the answers they provided. (Chi Square test $p > 0.05$). There was a statistically significant difference in the areas of the definition of rape, aspects of consent between batches.

Conclusion

The responses from the 1st years on many occasions were as accurate as the pre interns. This was an encouraging sign and possibly implied that there is a general awareness on legal aspects of sexual offences. There were however lapses in knowledge from both batches which raised the need for more specific awareness programs on laws related to sexual offences to be introduced within the medial curriculum.

FP-36

Investigation of the aircraft tragedy occurred 15 years back in the Indian Ocean

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Introduction

Tragedies of aircrafts are of concern for public, human rights organizations, law enforcement authorities and defense, aviation authorities etc. It becomes more complex when it happens to a civil aircraft during the period of war. The reconstruction of the incident and identification of humans are the most important aspects of forensic investigation. The loss of forensic evidence is inevitable with lapse of time and especially debris in an environment where constant changes occur, like water.

Case report

The investigation of a blasted civilian air craft ANTONOV belonging to LION AIR-operated in Sri Lanka, done nearly 15 years after the disaster, said to be due to a terrorist attack while in the air and debris deposited in the sea.

Analysis of dispersion of debris, pattern of destruction of the engine and body and circumstantial evidence suggested that it was due to striking of heat seeking Surface to air missiles (SAM) shoulder type in the air.

Identification of individuals was a step wise process through clothes and personal effects, skeletal analysis including Forensic Odontology and DNA.

Conclusion

This emphasizes the importance of a comprehensive forensic investigation with multidisciplinary approach including local and foreign expertise in order to address the issues in a justifiable manner.

FP-37

A study on the pH of the groundwater samples submitted by public health inspectors

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Introduction
The pH is a measure of the acidity or basicity of the aqueous solution. The pH is one the most important water quality parameters in determining the corrosivity of water. In general, lower the pH, higher the level of corrosion. The internal corrosion of piping systems raises health impacts which were associated with leaching of lead, copper and other harmful metals from the water pipes into the drinking water supply.

Objective
Examination of the samples which were submitted by the Public Health Inspectors, for testing of the conformity to the relevant standared SLS (614: 2013) for potable water with respect to the pH. It should lie within the range of 6.5 - 8.5.

Method
The measurement of pH of the groundwater samples submitted from May 2013 to July 2014 was carried out using a glass electrode.

Results
Out of total number of 86 samples analyzed, the pH of the 47.7% of the samples was below 6.5. That means almost 50% of the samples were acidic. Further, the pH values of 78.0% of the acidic samples were between pH 5.0 and 6.0.

Conclusion
This examination revealed that 50% of the analyzed samples were acidic. Although pH usually has no direct impact on the water consumers, it is one of the most important operational water-quality parameters. Careful attention to pH control is necessary at all stages of water treatment to ensure satisfactory water clarification and disinfection. For effective disinfection with chlorine, the pH should preferably be less than 8 but not too low. The pH of the water entering the distribution system must be controlled to minimize the corrosion of water mains and pipes in household water systems. Failure to do so can result in the contamination of drinking water with the harmful metals and in adverse effects on its taste, odour and appearance.

FP-38

A national training programme in sexual assault forensic medical examination for medical officers in Sri Lanka

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Introduction
Sexual assault forensic examination (SAFE) is a specialized area in medicolegal practice. Doctors without special training conduct SAFE in rural Sri Lanka. SAFE is a difficult skill to impart during the undergraduate curriculum due to time constraints, privacy and confidentiality issues.

Objectives
Objectives are to present the development of a SAFE curriculum, contents and teaching methodologies adopted at the training programmes on SAFE, and analysis of participants' feedback.

Methodology
Six, forty hour nationwide training programmes on SAFE were conducted. Curriculum was developed by consultative meetings of stakeholders. Content included anatomy, physiology, communication skills, testifying skills, victim friendly and holistic management of victims in addition to content on forensic evidence. Seminars, problem based learning and mock trials were active teaching methods used by a team of resource persons from various institutions. Feedback was analysed using SPSS by a demonstrator not involved in the programme.

Results and discussion
115 doctors were trained. 32.17% had over 5 years' experience in medicolegal work. 75.7% had no special training in SAFE. Programme was a great opportunity to improve their knowledge (97.4%), 33.9% acquired new knowledge. 81(70.4 %) were Medical officer – medico-legal (MOML) in outstations and rated the overall programme as excellent (64%) or good (35%). However, there was dissatisfaction about timetabling; rated as excellent (13.9%), good (65.2%), due to work pressure of resource persons. Training programmes were successful probably due to considering stakeholder needs in curriculum development, active learning and the team work of resource persons.

Conclusion
Stakeholder needs should be considered in curriculum development in postgraduate forensic training. We advocate using this as a licensing training programme for SAFE in Sri Lanka and this curriculum to be upgraded for postgraduate training in Forensic Medicine.

FP-39

Timing of contusions – a preliminary study

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Introduction
Contusions composed of a major group of mechanical injuries produced by blunt force impacts. Aging of bruises based on their colour changes significantly varies according to different schools of thought.

Objectives
To work-out an appropriate reference scale of colour changes and other parameters of skin contusions for local setting

Materials and Methods
Injuries of blunt force impact [contusions] on body surface in otherwise healthy victims, referred to JMO office Karapitiya, with reliable circumstantial evidence about exact timing of its infliction, were electronically recorded by using full spectrum digital camera with optical filters of different wavelengths. Re-examination was carried out where feasible. These photographic records were then analyzed against timing of injuries by using computer adobe photoshop with resolution digital screen.

Results
There had been 29 cases with 3 – 72 hours after the incident. Red colour lesions were observed in 14 victims with upto 24 hours old lesions and in two cases with 72 hours old contusions. Five cases with purple blue lesions had injuries of 48 – 72 hours and another five cases had bluish lesions since the incident. The skin temperature was 0.1 -0.2 degrees higher within 24 h compared to control region and 0.3 – 0.5 degrees higher in lesions of 72 hours.

Conclusions
The red colour is most significant in recent contusions up to 24 hours, but may persist for several days in some patients whereas puple-blue discolouration is generally observable within 48 – 72 hours with a few individual variations. A continuous survey covering broader contingent of cases with assessment of all other parameters is essential to arrive at more reliable conclusions about timing of injuries..

FP-40

Analytical study of the iodine contents of edible common salts consumed by the Sri Lankans

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At the joint WHO/UNICEF/ICCIDD work shop held in New Delhi in 1989, it was recommended that the ideal strategy for control of iodine deficiency disorders (IDD) in Sri Lanka was universal iodization of salt.

Then the Government decided to implement the compulsory iodization of salts. Considering the average daily intake of iodine, the iodine levels of salt was kept at a safe level of 15mg/Kg - 30mg/Kg.

The food (Iodization of salt) Regulation was accordingly implemented.

Objective – To evaluate the quality of iodization of edible common salts available in the market by Determination of iodine content present.

Methodology –480 samples from year 2010 to 2014 which were received from Public Health Inspectors all over the country were analyzed for iodine content using the standard method given in SLS 79 and 80 laid down for edible common salts.

Results

The % varies from year 2010 to 2014 , Iodine content as 'I' less than 15 mg/Kg was 16%,15 % ,16% 34%, 26% Iodine content as 'I' 15mg/Kg -30 mg/Kg was 67%,75 %, 73%, 65%, 69% and Iodine content as 'I' more than 30 mg/Kg was 17%,10 %, 3%, 1%, 5%

Conclusion

According to the results the risk for high iodine intake is prevented.
The required iodine level between 15 -30 mg/Kg is not more than 75% and iodine content less than 15 mg/Kg lies around 25%. Therefore still there is a potential risk for IDD.
Iodine can be lost due to improper storage conditions. Therefore awareness programs should be carried out to educate the people about proper storage conditions. Proper control system should be implemented to maintain the level of iodine at the manufacturing stage.

FP-41

A retrospective descriptive study on deaths following fatal pressure on the neck at North Colombo Teaching Hospital (NCTH) and Colombo South Teaching Hospital (CSTH) (2004-2013)

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Introduction: Death due to fatal pressure on neck results from hanging, manual or ligature strangulation. The autopsy findings vary among the three.[1-6] A study focused on the different internal and external findings would shed some light into the interpretation of injuries. Further, exploring the demographic details and causative factors would help in pattern recognition and implementing preventive measures.

Objective: The objectives of the study were to analyze the different external and internal injuries following fatal pressure on the neck and to describe the socio-demographic features of the deceased.

Methodology : Data collected from eighty deaths due to fatal pressure on the neck, belonging to the researches for the past ten years were gathered according to a preplanned questionnaire and analyzed using SPSS statistical package.

Results: The results revealed preponderance of male victims (84%). The highest percentages of deaths were observed in the 21-30, 31-40 and above-60 age groups (20% each). The majority were married (58%), unemployed (50%) and represented lower socio-economic background (43%). Use of alcohol was found in 50% though only 11% was addicted to recreational drugs. The vast majority of deaths were due to hanging (90%) while manual strangulation accounted for 6% and ligature strangulation for 4%. In 72% of cases, the ligature was present at the time of examination. The victim's own residence was the place of choice in deaths due to hanging. Internal injuries were less in hanging compared to other two forms. Manual strangulation caused highest degree of internal injuries. Among internal injuries, muscle contusions were the most frequent followed by hyoid fractures and thyroid fractures respectively.

Conclusion: This study concludes hanging as the commonest method of application of fatal pressure on neck. Internal injuries are commonest in manual strangulation while commonest intern injuries are the muscle contusions.

FP-42

Application of an ancient DNA approach to analyze a highly degraded human remain – A case report

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In cases of prolonged exposure to high humidity conditions, the hard biological material such as bones and teeth may be the only evidence left for DNA analysis. However DNA extractions of such samples exposed to prolonged microbial activity under high humidity conditions often contain highly fragmented DNA molecules having shorter lengths. This makes Polymerase Chain Reaction (PCR) amplifications not only targeting nuclear genetic markers but routine mitochondrial DNA markers difficult or even impossible.

A part of a skeleton of an individual supposedly to be of 30 years old was found from a river. He was reported to be missing two years ago. DNA was extracted from a piece of a rib using a modified phenol chloroform method. Initial test results indicated that DNA in the extraction was severely fragmented from the combined processes of decomposition and microbial-induced degradation.PCR targeting 12 nuclear DNA markers having fragment lengths 105-327 base pairs (bp) failed to amplify in PCR. Amplification was not obtained from a region of the human mitochondrial DNA (mtDNA HVS1) having a size of 440bp.

Human mtDNA HVS 1 region of the bone DNA extract was amplified in PCR by using four overlapping first round and second round nested PCRs using primers described previously for ancient DNA analysis by Lertrit *et al,* 2008. In nested PCR, amplicons were obtained for all four mtDNA primer pairs generating fragments in sizes of 161bp, 135bp, 228 bp and 247bp. Each product was sequenced bi-directionally generating a final sequence having 324bp in length covering nucleotide positions from 15998 to16322. The polymorphisms observed were matched with that of the putative mother of the deceased at a maximum random match probability of 0.88%.

This case highlights a reliable approach to successfully analyze highly degraded biological material from challenging cases of identity testing in mass disasters.

FP-43

Reconstruction of vehicle type by examination of injury pattern

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Introduction

The main objective of investigations in hit and run accidents is to trace the vehicle. This is significant when there is no eye witness. It is easy when vehicle is a car or heavy vehicle since it leaves expected injury patterns. Following case discussion is based on a body found roadside with un-common run-over injuries.

Case report

An unidentified body with injuries was found roadside in supine position. There was no eyewitness. Autopsy revealed three groups of injuries; crushed fractures in feet and pelvis, and superficial abrasions over knees. Distance from feet to knee injuries was 23 inches and to pelvic injuries 46 inches. Stomach had liquor smell.

Discussion

Two areas of crush injuries with injury free area in-between except over knees suggest run-over by two tires. The distance between two crush injuries was 4 feet and was compatible with rear wheels of a three-wheeler. Injuries over knees were not severe and were situated midway between two severe injuries and were compatible with front tire of three-wheeler. Less severe injuries by front tire may be due to less weight exert on it. The deceased would have been in lying position under the influence of alcohol. Clothes may have prevented tire marks. The absence of injuries on the rest of the body should be due to the clearance space from floor and it is 9”-14” in a three-wheeler. No paint or glass fragments on the body for further confirmation.

Conclusion

Injury pattern was compatible with run-over by a three-wheeler.

FP-44

Firearm injury as a defense wound in forensic context

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Introduction

When a person is being assaulted he will naturally move his limbs to protect his head, trunk or limbs causing defense injuries. Usually these are seen in the palms, wrist, knuckles and extensor surface of forearms. Examination of defense wounds in homicidal victims is of immense importance to the forensic pathologist. However firearm injury as a defense wound is rare in forensic practice.

Case report 01

A 72 year old businessman was shot down by an unknown gang while he was going to the bank with his wife on a busy road. He struggled with the gunman to prevent shooting and covered his head with his arm. On examination he had entry and exit wound on the right arm and an entry wound on upper abdomen causing laceration of inferior vena cava.

Case report 02

A municipal council member was shot down by an unknown gunman while he was driving a car with his friend near Peliyagoda. He sustained multiple entry wounds on left hand and fatal perforated injury to the head.

Conclusion

Thorough examination of defense injuries is very valuable in forensic context. The type of injury sustained gives an idea regarding the weapon, helps in reconstructing the events and provide clues to the range of fire. Not only that based on the presence of such injuries it can be given an opinion that the victim was able to comprehend the attack and provided resistance during the incident.

FP-45

Differential DNA extraction; a successful method to isolate male DNA from challenging sexual assault evidence in Sri Lanka

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DNA testing of sexual assault samples is often challenging as they contain an imbalanced mixture of a higher amount of vaginal epithelial cells and blood of the victim with comparatively lower amount of sperms cells from the male assailant. The success of DNA analysis of such samples depends on isolating the male DNA from the mixture. Conventional DNA analysis of samples in this nature generates mixed DNA profiles which sometimes can be challenging to interpret. This may also lead to a complete masking of male DNA by female counterpart leading to mis-interpretation of results.

Separating sperm cells away from the victim's biological material during DNA extraction is preferred over the other methods that demand expensive equipment and chemicals. Differential DNA extraction procedure involves two step cell lysis processers of preferentially breaking open female cells and leukocytes followed by subsequent stronger lysis of sperm generating separate female and male DNA fractions.

This study demonstrates the success of isolating the male DNA from sexual assault specimen using differential extraction.

DNA was extracted from 75 sexual assault samples (Vaginal swabs, stains on clothing and slides) using differential DNA extraction. Each DNA fraction was subjected to PCR followed by obtaining DNA profiles.

Presence of male DNA was established in 44% of the samples tested. In one-fourth of those samples (25.3% n=19) complete separation of male and female DNA profiles was achieved. Among 18.7% (14), presence of male DNA was observed in female DNA fraction indicating that sperm heads have already been lysed by the time of sampling. This becomes likely when the time elapsed between the rape and sample collection increases. For the remaining of the samples (56% n=42) no male DNA profiles were recovered. Absence of male DNA in those samples was confirmed by a highly sensitive male specific Y-chromosomal DNA test.

FP-46

Obscenity on the internet; Adequacy of the present legal framework

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It was not so long ago that we experienced a considerable amount of obscene material of Sri Lankan youth and adults on the Internet. As a countermeasure, steps were taken to direct the Local Internet Authorities to shutdown sites which purportedly published such material. This article focuses on the adequacy of the legislative safeguards in countering such acts.

The Computer Crimes Act No. 24 of 2007 being one of the legislations governing internet and computer regime, is silent as to publication of obscene material. Obscene Publications Ordinance 04/1927 (amended) defines; production or possession of obscene objects for distribution or public exhibition; importing or exporting the same; or in any manner to put such material to circulation as offences. Penal Code (s.285) defines sale, distribution, importation, or printing for sale or hire, or willfully exhibiting to public view of the same to be an offence. S.286 states possession for the purpose of sale, distribution or public exhibition also to be an offence.

It is interesting to note that a definition for Obscenity is scarcely found in our legal context. Some pertinent issues in this regard would be - whether present material made available on the internet would fall within the ambit of legislative provisions afore-referred to? Who the actual offenders are? How to trace them to be brought before Courts in Sri Lanka? Can the publishers of these web sites be traced and tried? Can the hosts be charged for the offences committed? - Jurisdictional issues- Can we apply highly localized concepts of 'obscenity' in a more globalized environment such as the internet.

It is my view that, steps taken to compel the local Authorities to shutdown sites concerned remain inadequate to address the real issue, since such material would still be available at large to the rest of the world.

FP-47

An Efficient Medical Legal Management Information System

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For decades, forensic evidence has been important in the investigation and adjudication of criminal casework, capable of identifying suspects and exonerating the wrongly accused. In recent years, however, severe laboratory backlogs have clogged the system and affected the ability of the Medical – Legal system to fully benefit from the value of forensic evidence. Most of the forensic examination need for analysts to spend time in administrative follow-up rather than analytical duties. The combination of increased caseload and inefficient information management processes significantly clogs the entire Medical – Legal process, and promises to worsen in the future as the forensic sciences expand their scopes and activities.

The Department of Forensic Medicine, University of Kelaniya recognised the importance of streamlining case management to reduce the staggering backlog, decided to develop a fully web based, an efficient Medical Legal Management Information Ssystem (MLMIS). This MLMIS enables more efficient sharing of forensic information among criminal justice stakeholders, including doctors, law enforcement officers, prosecutors and laboratory technicians. Further, it provides an electronic platform that enables more efficient sharing of forensic information among criminal justice cases. The main features of this system can be summarized as: manage post mortem records, automatic report generations, report writing with spell checker , gallery view for research and teaching purpose, scheduling appointments and etc.

The registered users in MLMIS can log into the system to access or provide medical information based on their accessing privilege. The postmortem information can be stored in a variety of multimedia forms such as video, audio, pictures and text. This system enables the decion making process of assigning doctors for a particular postmortum, accoding to the availability and the workload of each doctor. The advantages of the developed MLMIS over paper record data handling is invaluable. However, the efficiency of the system depends on the commitments and determine the maximum benefits as expected.

FP-48

DNA based forensic identity testing as a valuable tool for crime investigation in Sri Lanka.

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DNA typing; the characterization of individuals at the level of the hereditary material DNA has become as a powerful tool of human identity testing in criminal investigations in Sri Lanka. From January 2003 to August 2014, 3347 DNA tests for criminal casework have been performed by Genetech as the main provider of DNA typing services to the government of Sri Lanka. This report examines some trends in using this technology during the past fourteen years.

Each case was referred to Genetech through a Court Order by the magistrate or the district Judge. Out of all 3347 cases, 32.4% (n= 1086) were homicide where 21.5% (n= 721) were sexual abuse and rape. Nearly 2.2% (n=72) involved both rape and murder where as 2.4% (n=80) tests were for human identification from mutilated body parts. Burglary and theft accounted for 19.5% (n= 651) while 9% (n=300) of cases were on road accidents and other crimes.

More than 13 % (n=437) of all the cases were on child abuse and rape. Age of the child victims were varied from two months to 17 years and the suspects were between eight to 72 years of age.

DNA testing for crime investigation was referred from 128 Courts of 25 districts of the Island, where Colombo accounted for most number of cases (n=298) followed by Ratnapura (n=281), Hambantota (n=243) and Kandy (n=203).

The average number of cases submitted in 2003 was 07 cases per month. As a result of educating the law enforcement officers, members of the judiciary, medical professionals and general public through lectures and workshops on the use of the technology, average number of cases per month increased up to 56 in 2012 followed by a peak average of 71 in 2013. This demonstrates a growing reliance on DNA typing for resolving criminal cases in Sri Lanka.

FP-49

Removal of body parts during embalming: ethico-legal aspects

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Internal organs and tissues, especially after being dissected at autopsy, are considered by the undertakers as inimical to effective embalming. Therefore, they would rather remove them from the body and dispose, without the consent of relatives or authority of the Inquirer, by burying them in unmarked locations before embalming. Rarely, this practice would interfere with the criminal investigations as the Judicial Medical Officer would find is impossible to conclude his investigations without examining organs when requested by a magistrate to perform a second autopsy on an exhumed body. Although this practice is both intuitively and rationally unethical as it violates many basic ethical principles it is not that obvious whether it violates any statutory or common law principles. Since it has been well-established that there is no property in a corpse this practice does not come under 'conversion' or 'theft'. It may not be actionable under a common law offence of 'wrongful interference with a body' as in some commonwealth countries. Inquirers may have a legal authority over a dead body until he authorizes the release of the body to relations. Once it is in the possession of the next of kin he does not seem to have any authority over the body. The Transplantation of Human Tissue Act is silent about such acts. Even if it says that removal of body parts without proper consent of the deceased and next of kin and buying and selling them are illegal it is silent on the punishment for the former. This paper discusses the ethico-legal aspect of this practice and suggests some recommendations.

FP-50

Application of miniaturized human STR markers (mini-STRs) for a successful DNA testing of formalin fixed foetus – A case report.

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Appling DNA technology is the most powerful tool to accurate identification and confirming family relationships of individuals in criminal investigations. In forensic DNA testing, Short Tandem Repeat (STR) DNA regions in the human genome are selectively amplified in Polymerase Chain Reaction (PCR) amplification to generate DNA profiles that all unique to individuals.

However, under certain circumstances, such as biological degradation and chemical alteration of nuclear DNA, the analysis using conventional PCR methods fail to generate DNA profiles from a biological sample. One of the main reasons for this failure is due to breaking of DNA molecules into shorter fragments by microbial and chemical processes of decomposition. Inabilities to amplify a DNA sample having fragmented DNA in PCR bring major technological limitations to obtain a DNA profile from it.

This case report reveals a novel approach of DNA testing of a foetus that has been extracted during the autopsy of a deceased female, which was kept preserved in formalin for two months under ambient temperature. Preservation of tissues in formalin causes irreversible damage to DNA mainly by fragmentation creating faliure in amplification of foetus DNA by conventional PCR that amplify DNA fragments having lengths from 200 to 450 base pairs.

Therefore a panel of PCR primes was newly designed by moving the primer annealing positions to the target STR region as close as possible to generate miniaturized STR (mini-STRs) DNA fragments in PCR ranging from 56 to 168 base pairs in length. A full DNA profile of the foetus was generated for human STR loci CSF1PO, TPOX, THO1, D7S820, D13S317 and D16S539. Maternity of the foetus was confirmed by comparing the profile with the profile of the deceased mother demonstrating a success of the novel mini-STR approach in generating profiles from highly fragmented DNA.

FP-51

Routine reporting to the police of patients admitted to the hospital with injuries or diseases claimed or suspected to have been criminally inflicted; is it a breach of confidentiality?

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Medical officers in government hospitals routinely report every patient with injury or disease if it is suspected or claimed to have been criminally inflicted without patient's consent. It seems to be a blatant violation of medical confidentiality, which is one of the most fundamental ethical duties of a doctor. However, the conventional wisdom seems to be that doctors have moral and legal duty to report crimes to the police. Since there has been no serious challenge to this practice the medical officers seem to have taken the ethical and legal soundness of it for granted. Nevertheless, a careful examination of the ethical justifications of breaching confidentiality in this manner and legality of it would show that these arguments are untenable. It appears that there is no sound ethical or legal basis for the practice of blanket reporting of patients with injuries and diseases suspected or claimed to be of criminal origin.

FP-52

Illegal trafficking of potable spirit

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Introduction: Ethanol is a potable sprit and is the principal type of alcohol found in alcoholic beverages. According to the Excise Ordinance of Sri Lanka, potable spirit can only be imported by license holders by paying the corresponding duty. Several cases were reported in the period from December 2013 to February 2014, importing potable spirit with false declarations. Samples collected from suspected containers, detained by the Sri Lanka Customs, were sent to the liquor laboratory of the Government Analyst's Department for analysis.

Case background

Case I - The Cargo Examination Directorate of Sri Lanka Customs has detained seven containers declared as tar.

Case II -The Revenue Task Force of Sri Lanka Customs has detained eight creates, said to contain standard medium density fiber board from Malaysia.

Case III -The Central Investigation Bureau of Sri Lanka Customs suspected the imported chemical consignment declared as RDB Palm Olein.

Seven samples from case I, four samples from case II and four samples from case III were received for analysis.

Methodology: The qualitative analysis for alcohol was carried out using the Gas Chromatography (Shimadzu GC 2010 Plus, capillary column RTX 624) with FID detector. Further the percentage of alcohol was determined using alcohol hydrometer. All samples were analyzed to test for conformity in the SLS standards for the rectified spirit (SLS 351-1983).

Results & Conclusion: The analytical results revealed that the ethanol content in case I, II and III were in the range of 95.9 - 96.2 % (v/v), 95.3 - 95.5% (v/v) and 95.8 - 95.9% (v/v) respectively and found to be inconformity in the chemical requirements for the potable spirit according to SLS 351-1983.

The analytical results exposed that the declarations made by each Importer were untrue and thereby our laboratory helped the Sri Lanka Customs to take legal actions against each company.

FP-53

Some ethico-legal issues concerning medico-legal examination for drunkenness

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Judicial Medical Officers examine drivers and others for drunkenness on police request. The doctor-patient relationship thus formed is complicated, as the suspect is often brought before the doctor against his will. The examination, which is to be performed, is usually not for his benefit and the suspect has no choice of the doctor or institution, in which the examination is taken place. Validity of consent given by the suspect is not straightforward as the element of 'voluntariness' may not be there. Some of them are intoxicated beyond their capacity to consent. In that case, the doctor should decide whether to proceed with his examination without the suspect's consent. If he decides to go ahead, he should be prepared to justify his actions if need arises. In the event of examination without consent, the doctor may have to respond to the police, who would request him to divulge certain information he gathered during the examination. Some suspects, in spite of having the capacity, may still refuse to be examined by the doctor and the latter is usually expected to make his observations and pass them to the police in the name of justice. Some would argue that the doctors should not even make passive observations available to police unless they do not mind breaching confidentiality. Since the doctors seem to have responsibility towards both the police and the suspects there will invariably be conflict of interests unless they are clear about the scope and limitations of their responsibilities to both parties.

FP-54

Identification of Cathine in an unknown white crystalline substance

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Introduction

Cathine is a monoamine alkaloid found naturally in the shrub Catha edulis (Khat). It is a psychoactive drug of the amphetamine class which acts as stimulants.

The Drug abuse in Sri Lanka is continuously growing fast and different new narcotic drugs come to the market day by day.

Cathine was identified for the first time in Sri Lanka recently by the Government Analyst's Department.

Case report including investigation

Group of three people were arrested by the police Narcotic Bureau in December 2012 on information. They were informed that the above people are involved with Heroin business and have heroin with them. On examination, the PNB officers detected a parcel containing a white crystalline powder in their custody. The weight of the powder was 248.3 grams. They suspected that the powder could be Cocaine, since the powder was white in colour and sent it to the Government Analyst's Department for further examination.

Method

The preliminary colour tests were carried out for Opiates, Cocaine and Amphetamine type stimulants and found negative. Therefore further qualitative analysis was carried out by TLC, GC-MS and FTIR and identified and confirmed that the powder was Cathine. The quantitative analysis was carried out using GC with FID detector.

Results

The TLC, GC-MS and FTIR results confirmed the presence of Cathine in the sample. Further analysis by GC-FID revealed that the sample contain 57.5 grams of Cathine in the sample.

Conclusion

Cathine is included as a controlled substance in many countries and in Sri Lanka; Cathine is included in part III of the UN Convention Against Illicit Traffic in Narcotic Drugs and psychotropic substance Act No.1 of 2008. It is suggested that more attention to be paid on controlling this drug in Sri Lanka as well as the other new designer drugs that are fast moving throughout the world.

FP-55

Patients' knowledge on informed consent in clinical practice; a study done at North Colombo Teaching Hospital

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Introduction : Informed consent in medical practice is based on the first principle of medical ethics, which is autonomy. It refers to the idea that patients have a right to decide what should be done to their bodies. It not only makes patients aware of proposed treatment regimes, risks involved, alternative treatment methods available etc. but also makes them part of the clinical decision making process. This would positively promote the patients' compliance as they feel that they are part and parcel of the project of his/her medical management.

Objectives: The objectives of this study were to find out the knowledge, attitudes and practices regarding informed consent in the inward patients of the North Colombo Teaching Hospital.

Methodology: The design was a prospective study and the study population was the inward patients of the North Colombo Teaching Hospital. The patient needed to be more than 18 years and to have given consent for medical intervention. Data was collected on an interviewer administered questionnaire. The attitudes were measured using Likert scales. And the statistical analysis was done using SPSS.

Results: Our study population consists of almost equal number of men and women (45% and 55% respectively). Almost all of them knew the concept of consent (95%). 26% say that once given consent cannot be revoked. 47% agree to respect the children's ideas and 62% think that children of 16 years and above should be treated like adults.

Conclusion : Patients have a fairly good idea about 'informed consent' but there are some gaps needs to be filled such as they think that it cannot be revoked once given. Still a large minority think that patients cannot refuse treatment. On the positive note almost half think that children's ideas should be respected and more than half think that adolescents should be treated as adults.

FP-56

Misuse of rectified spirits imported under duty exemption facility exposed

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Case History: A BOI registered company manufactures disinfectant for exportation had imported rectified spirits under a duty exemption facility. The said company has declared that they use ethanol as the main raw material to manufacturer this, but the analysis reports which have been previously issued for the export product revealed that they contained only traces of ethanol. Hence the Special Task and Vigilance Division of Sri Lanka Customs suspected the claimed manufacturing process for misuse of imported ethanol, and requested the Government Analyst's Department to support them to find out the truth.

Methodology : Sampling - Four samples were collected from the disinfectant manufacturing factory during a raid by the Customs.
The Company was asked to prepare this according to their recipe at the laboratory in the presence of the Government Officers and samples of raw materials, the semi-finished product and the finished product were collected. The sample of the product to be exported was collected from the manufacturing line.
Laboratory Analysis - Ethanol of the semi-finished product, finished product and the export product was extracted into the brine solution using the pet-ether brine solvent system. Direct strength of the raw material ethanol and the distilled strengths of the extracted semi- finished product, finished product and the export product were measured using the hydrometer. Confirmation of Ethanol was carried out by Gas Chromatography with FID detector using a RTX-Wax capillary column

Results: The analytical results revealed that Ethanol content of the raw material ethanol, the semi- finished product and the finished product was 95.4%, 62.4% and 58.6% respectively. Only traces of ethanol were identified in the sample declared to be exported.

Conclusion: The chemical characteristics of the finished product were not similar to that of the declared export product. Ethanol has not been used to manufacture the disinfectants as declared by the company.

FP-57

Sudden Death in Flight- "Economy-Class Syndrome"

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Introduction
The term "economy-class syndrome" defines an infrequent episode of venous thromboembolism (VTED) related to long distance travel, mainly by plane. However, this relation has not clearly been demonstrated by investigators.
We describe a case of sudden death in flight after developing shortness of breath inside the flight that lead to emergency landing to Katunayaka airport.

Case report
A 46years old previously healthy obese Malaysian female was traveling in economic class from Saudi Arabia to Malaysia after Mecca pilgrimage. After about 3 hour of fly, she developed shortness of breath. It had progressively increased and flight staff had given oxygen, some inhaler medicine and warmed the patent. She died in about 30 minutes after resuscitation inside the flight. An emergency landing to Katunayaka airport was done to dispatch the body.

Autopsy revealed large anti-mortem blood clots in bilateral pulmonary arteries which occupies the whole lumen, slightly adhered to lumen and had heterogeneous red blue tan appearance. Both lungs were severely congested. In the right atrium and ventricle blood clots were not demonstrated and valves were normal. Dissection of the upper leg veins from iliac vein to the femoral veins demonstrated adherent thrombus inside the vessel. Transverse sectioning of the muscles of the posterior tibial compartment of both sides revealed thrombi in leg veins with the characteristic protruding morphology. Other organ dissection was unremarkable.

Conclusion
Though a strong relationship between pulmonary embolism and long air travel has not been demonstrated by investigators, this evident a typical "economy-class syndrome".

FP-58

Analysis of the Type of High Explosive in an Electric Detonator

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A device used to initiate high explosive charges through a explosively generated supersonic shock is technically called as a detonator. Electric detonator consists of a sealed cylindrical metal tube which contains a metal wire-filament connected to two leads inserted through one end. This filament is embedded in a heat sensitive fuse-head of a chemical mixture.

When an electric current is passed through the leads to the wire-filament, resulting heat ignite the fuse-head. This in turn ignites the delay element next to fuse-head and then a small charge of primary explosive. The initiation of the primary explosive in turn causes detonation of secondary explosive at the base which is approximately 60 mg of military high explosive.
The detonation of the high explosive generates supersonic shock wave initiating the high explosive charge in the explosive device, into which the detonator has been inserted.

Detonators are categorized as explosives under the explosives act No. 1133/13 -2000.05.24.
Usually detonators as court productions are forwarded to the Government Analyst's Department for examination in the form of an exploded debris after rendered safe. Comprehensive examination of a detonator is not possible unless the metal casing is cut open; that is not safe since primary explosive in it is friction sensitive.

However, the internal components and the explosives in a detonator can be examined by dissolving the aluminium tube with a strong solution of sodium hydroxide.The presentation describes a simple, safe and convenient technique to be followed in order to identify the type of high explosive and the type of ignitor- fuse in a detonator.

FP-59

Comparison of injuries and correlates of male victims of sexual assault during and after terrorism in Sri Lanka; a medico-legal study

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Introduction

After the defeat of terrorism in May 2009, we observe a change in the social, cultural, political and the crime patterns. Though a lot of studies have been done on sexual assault of female victims, no in-depth study has been done on male victims. This study was conducted to describe the nature of injuries and characteristics of male victims of sexual assaults during terrorism and compare those with after terrorism.

Methods:

A cross-sectional study on male victims of sexual assaults was conducted at selected tertiary care hospitals. All Medico-legal examination forms (MLEFs) of 6 consented forensic medical practitioners covering 10 year period from May-2004 to May-2014 were screened.

Results:

Of all the MLEFs (31,210), 102 (0.3%) were male victims of sexual assault. Ages ranged from 3-36 years and 68% were 10-19 years of age. Ninety four percent had no injuries. Fresh anal tears were found in four and old scars in two. Thirty five percent were during terrorism and 65% after it. Place of living and age of victims had no significant difference with the period of occurrence ($p>0.05$). The circumstances such as time, place, perpetrator and number of incidents had significant difference with the period of occurrence ($p<0.05$). None of the natures of sexual acts showed any significant difference with 2 periods of occurrence ($p>0.05$). Referrals to psychiatrist showed significant difference ($p<0.05$).

Conclusions:

During terrorism, sexual assaults occurred at daytime, outside home, by non-relatives and multiple times. After terrorism, sexual assaults occurred during night, at home, by relatives for more than once. There is no significant difference in the nature of sexual acts during 2 periods. Significant increase in male sexual assaults at home by relatives after terrorism needs to be further investigated in order to develop evidence based interventions.