



ALSGBI newsletter

SEE THE CENTRE SPREAD FOR THE 2018 ASM SCIENTIFIC PROGRAMME

President's Introduction

Welcome to the winter newsletter. At the time of writing my thoughts are firmly focused on the upcoming Annual Scientific Meeting in Manchester. It is somewhat later than usual this year and is certainly a Winter meeting with a seasonal feel about it. Manchester is already decked with Christmas Markets and the streets are decorated in preparation for our arrival!

Chelliah Selvasekar and the rest of the scientific committee have put together a scientific programme, which is as exciting and packed as I have ever seen, and delegate numbers are already very healthy. The focus on education and avoiding complications is proving to be a popular theme. These two areas together with the ballooning interest in robotics and technology will all be explored in detail over the two days of the meeting.

The recent press coverage of the sad death of a patient following robotic cardiac surgery serves to emphasise the fundamental importance of the training process, mentorship and team factors in the application of these technologies. It is timely therefore that these themes run through the whole of the meeting.

The ALSGBI robotics sub-group have been working hard to put together a robotic training the trainer (TTT) course, which is near completion and will be presented during the ASM. In addition for those of us unfamiliar with the process of LapCo and TTT, part of the live surgery programme will include a case under LapCo conditions complete with trainee, trainer and TTT faculty!

Our efforts to promote good training, and to reduce complications is one of the reasons we enjoy strong support from our Industry partners, who can only benefit from high quality surgical practice. The degree of support will be evident at what promises to be a very busy and interesting industry exhibition.

This year has passed quickly and EAES already seems a distant memory. However it was an exciting meeting and was swamped with high-class talks and presentations from Europe and far beyond. London proved to be a real

draw, and the ALSGBI presence was very much in evidence. As the host society we were able to contribute throughout the programme, and I have to thank those of you who attended and contributed, on behalf of the EAES in making the meeting such a success. A more detailed report from the meeting is within these pages.

I also want to highlight another success - the new look website. You will have noticed that there has been a radical overhaul of the website, which looks great, and is much easier to navigate than its predecessor. There is a members only area with content confined to the membership, and an easy link for joining the society. This has helped facilitate a very successful recruitment drive, which has seen a large number of new members joining up, despite the difficulties we had earlier on in the year with the non-transfer of direct debits from ASGBI to ALSGBI. Well done to our ever hard-working secretariat in addressing that administrative nightmare.

Enjoy reading through the newsletter, which contains a number of reports from studies, meetings, local and national as well as Tan Arulampalam's thought-provoking article on Artificial Intelligence. Those of you who like a printed copy of the ASM programme should keep this newsletter close to hand as well. Many thanks to Neil Keeling and all of the contributors for continuing to make it an engaging read.

I look forward to seeing you in Manchester.



Mr Simon Dexter
President, ALSGBI

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Editor's Introduction



One last gasp of warm air blown up from Southern Europe before the darkness of Autumn sweeps in as the harbinger to a harsh and cold winter (we have been promised). Must be time for the next ALSGBI Newsletter, either that or a Brexit metaphor?

Which brings me to reports of the summer meetings, importantly the EAES in the huge London EXCEL centre which played host to Europe's endoscopic community for a few days to the glamour of Nice for the ESCP meeting. The vast majority of UK surgeons I have met are determined to keep strong links with our European cousins after 29 March next year.

Mr Tan Aralampalam has given us an overview of AI and Blockchain theory in medicine and I do recommend that you read and digest this. He also sneaks into Debbie Gooch's report on a visit to Jaffna by ALSGBI surgeons spreading the word about safety culture in the operating theatre.

This year's ACPGBI Annual Meeting was held in Birmingham and declared a success due to being well attended with a stimulating programme for all. Nader Francis was awarded the CREST prize and Simon Bach the Intuitive Surgical Robotics Grant.

Regional meetings are also covered from the Northern Region meeting.

I hope you find the articles interesting; please feel free to send me reports of your local meetings and events for the Spring Newsletter and do not forget to remind all your trainees and theatre nurses to join the ALSGBI to get involved. Importantly there are a number of Grants, Bursaries and Awards available for trainees who are planning an overseas fellowship and they must be members of the ALSGBI to apply.

Mr Neil Keeling
Newsletter Editor

The ASiT International Surgical Conference 2018

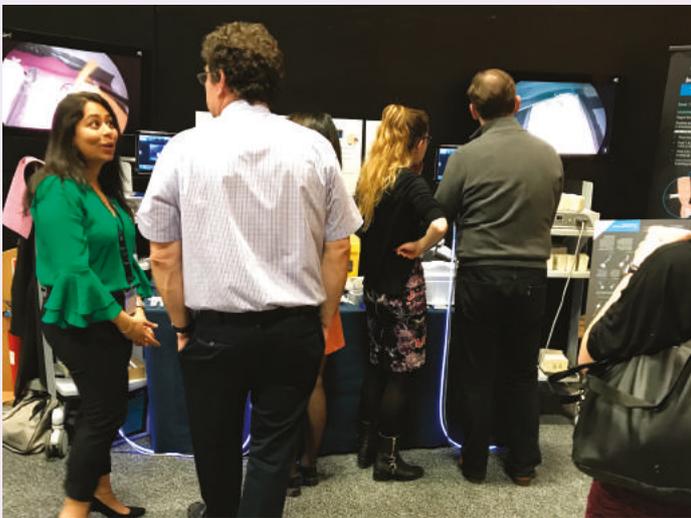
6-8 April 2018, Edinburgh

The Association of Surgeons in Training (ASiT) Annual International conference took place on Friday 6 - Sunday 8 April 2018 at the Edinburgh International Conference Centre (EICC).

The theme of the Conference was "nurturing excellence" and welcomed 800 delegates, high profile speakers and numerous industry partners combined to create a unique educational environment with a wealth of networking and learning opportunities. The event attracted a significant social media presence over the 3 days with over 100,000 Twitter impressions and the addition of the ASiT conference "app" enhanced the delegate experience.

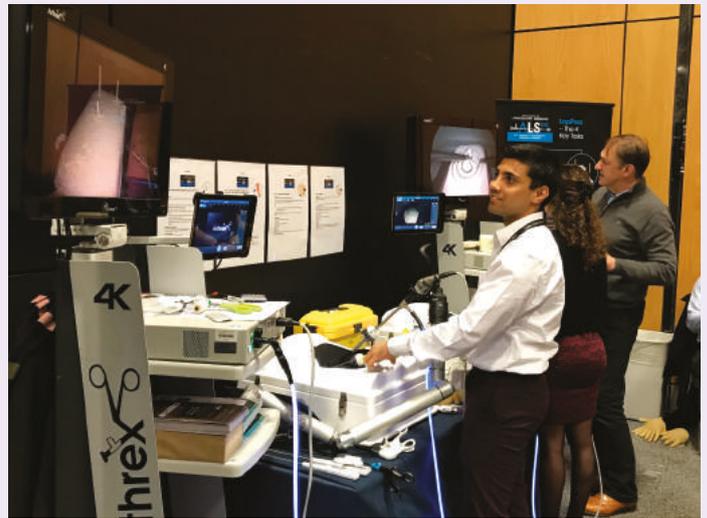
On Friday, 10 subspecialty pre-conference courses were hosted in various locations across Edinburgh for medical students and trainees of all levels through the kind sponsorship from industry partners. This was followed by a welcome drinks reception at the conference venue hosted by the RCSEng to mark the start of what was a fantastic meeting.

The weekend conference programme offered insightful discussion during the Question and Answer session with Presidents of the Royal College of



Surgeons, an inspiring and motivating Silver Scalpel lecture series in Defining Excellence and Optimising Performance, as well as highly educational sessions in the Civilian Trauma Symposium, improving surgical training pilot, equality and diversity, patient safety and career transitions. There were numerous breakout and consensus sessions addressing trainee burnout, trainee collaborative research, bullying and harassment and Surgical MedTech.

The charity gala dinner was generously supported by the RCSEd on the Saturday evening at the Royal College of Surgeons of Edinburgh. This was a thoroughly enjoyable evening for all who attended and raised a great amount of money for our chosen charity - The David Nott Foundation.



There were a number of poster and oral prize presentations throughout the conference. The ASiT/ALSGBI prize was awarded to Mr Ata Jaffar for his abstract "Mechanical Forces in Minimally Invasive Surgery: An Analysis of Surgical Experience".

One of the highlights of the sponsors' village was the ALSGBI stand with Messrs Sedman and Keeling offering access to high fidelity simulators as well as the opportunity to engage in the nationally recognised Lap-Pass by accredited assessors. This was an invaluable opportunity for delegates and one we hope to replicate at our annual conference in Belfast next year.

ASiT would like to thank ALSGBI for all of their continued support. Together we hope to educate and nurture the next generation of laparoscopic surgeons.

Mr Joshua Clements

ST4 General Surgical Registrar

ASiT Honorary Secretary & Northern Ireland Regional Representative



ASiT/ALSGBI Prize Winner 2018



A big thank you to ALSGBI for awarding our project with the "best laparoscopy surgery related abstract". Our work was focused on analyzing forces applied to tissues during laparoscopic handling which, surprisingly, is an area in surgery which has had very minimal research. Through our work we have identified areas in training which need to be worked upon to achieve competence. This has the potential to be objectively benchmarked to determine competence in laparoscopic training.

Ultimately, through further research in partnership with the mechanical engineering department at the University of Leeds, our goal is to decipher safe thresholds of direct mechanical forces in MIS so that iatrogenic tissue trauma is minimized. This can then be fed back to the operating surgeon, in real time, so that the surgeon has more of an awareness of the forces applied through instruments. This will further serve to improve the haptic feedback deficiency that is accompanied by laparoscopic surgery.

Mr Ata Jaffar

ST3 Urology

Yorkshire and Humber Deanery

OesophagoGastric Anastomosis Audit collects over 450 cases in 10 weeks!



Global distribution of registered centres

Oesophagectomy remains the only curative treatment for oesophageal cancer and is increasingly performed using minimal access techniques and in some centres robotically. Anastomotic leaks represent a major complication associated with high morbidity and mortality. Anastomotic leakage also increases hospital costs and is associated in some studies with poor survival due to early disease recurrence. There is a general perception that the leak rate may be increased with minimal access techniques. Over the last 5-10 years

anastomotic leaks are increasingly treated with non-operative endoscopic methods, such as Covered Oesophageal Stents or EndoSponge VAC therapy. The OesophagoGastric Anastomosis Audit (OGAA) is an exciting prospective, multicentre international study aimed to: 1) Assess incidence of anastomotic leaks 2) Assess variation in anastomotic techniques and 3) Assess variation in management of anastomotic leaks.

Co-ordinated by a team from the West Midlands Research Collaborative, Birmingham, UK and led by

an experienced team that has previously been involved in collaborative studies, OGAA is set to be one of the largest prospective multi-centre studies in oesophageal surgery. Since data collection began in early April 2018 the study has recruited in 41 countries on to our database via the encrypted Research Electronic Data Capture system!

Data is now being collected prospectively for 9 months, which includes patients undergoing oesophagectomy over a 6-month period with 90 days follow up. Each of our 623 collaborators can upload an anonymised case onto our secure database for analysis. We also have 30 national leads overseeing the progress of the audit in their respective countries with each registered centre.

Considering the clinical impact of oesophageal malignancy and anastomotic leak, this audit is set to provide a much-needed basis for future research and recommendations in this area. Whilst data collection continues, OGAA looks to be an exciting step forward in oesophageal surgery! The group is very grateful for the ALSGBI for supporting the study.

Our full protocol including the full audit standards can be found at our website: www.ogaa.org.uk

Kobby Siaw-Acheampong

The OesophagoGastric Anastomosis Audit Steering Group

OGanastomosis@gmail.com

Follow our progress on twitter! @OGAAudit

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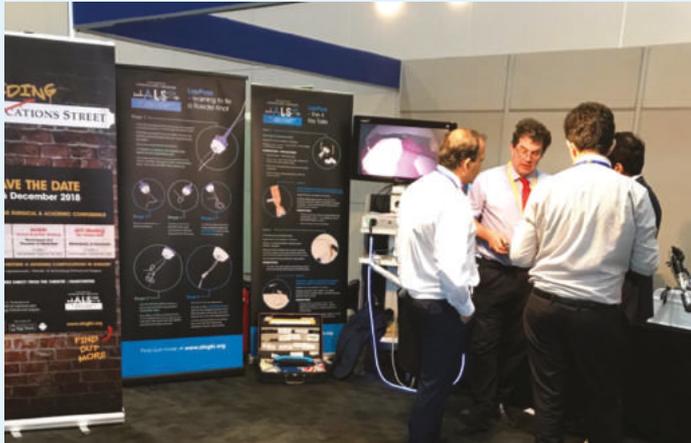
Derek Alderson

Siobhan McKay

[@OGAAudit](https://twitter.com/OGAAudit)

Association of Surgeons of Great Britain and Ireland International Surgical Congress

9-11 May 2018, Liverpool



This year's ASGBI International Surgical Conference was held in May at the ACC in Liverpool and took place over three days from Wednesday to Friday. The theme of the Congress was "Surgical Teams".

It followed the usual format of multiple plenary sessions giving a mixture of short paper sessions interspersed with educational sessions delivered on a wide variety of surgical topics. Numerous society sessions occurred over the three days.

The meeting was opened by Kenny Dalglish who was followed by Alastair Sutcliffe's motivational lecture entitled 'Teamwork at the top of the world'. Alastair was awarded the British Empire Medal for services to General Practice and was notable for taking part in a number of endurance records. He had a subarachnoid haemorrhage and subsequently wrote his renowned book "The Hardest Climb".



The symposia held during the week were provided by a number of the surgical societies. Our own ALSGBI provided the ever-popular Laparoscopic Emergency Surgery Symposium. Other regular providers included "A bad day on call" and an "Emergency laparotomy" session. In addition AUGIS and ACP held sessions on topical aspects of their interest.

The theme of "Surgical Teams" was threaded through the three days with the BJS Keynote lecture by Bruce Renshaw on Multi-disciplinary teams. Our own Past President Tim Rockall delivered the Moynihan Lecture on team working in enhanced recovery and The Sir Bruce Shields lecture was given by Craig McIlhenny on teams in the operating theatre.

The social events of the annual golf competition and the gala dinner were as successful as usual with the dinner being particularly well attended. Plans are already well advanced for next year's meeting in Telford entitled "Coping with complications".

Mr Don Menzies
Consultant Surgeon
ALSGBI Honorary Treasurer



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26th International EAES Congress 2018

30 May–1 June 2018, ExCel London, UK



At the end of May and the beginning of June 2018 the 26th International Congress of the European Association of Endoscopic Surgeons (EAES) was held in England for the first time in its history. For those of you who may not yet be familiar with the EAES, this Society is one of the largest laparoscopic societies in the World, equivalent in size, membership and influence to SAGES (Society of American Gastroenterological Surgeons) and IAGES (the Indian Association) and it was an honour and a great pleasure that we welcomed the EAES to London and co-hosted the meeting. By unanimous accord Professor George Hanna was the conference President and all sessions were co-chaired by representatives of the ALSGBI.

Nearly 1400 delegates from 73 countries attended, slightly fewer than we had hoped for as we had anticipated that London would be a powerful draw in 2018 following the success of IFSO in Westminster last year. The EAES was however significantly enhanced by the presence of delegates from the Far East with formal sessions organised by SAGES, KSEL (Korea), JSES (Japan) and TAES (Taiwan).

The programme was once again of the highest calibre. The format of the EAES meeting is for the two-day scientific programme to be preceded by pre-congress post graduate training modules (five masterclasses and four hands-on courses) which are individually booked and run by renowned European subspecialists in their fields. These were



held at a variety of sites including St Mary's and the ExCel itself and once again were fully subscribed and well received. The congress itself was then opened by Professor Hanna, Professor Jaap Bonjer from Amsterdam (the President of EAES) and our own President, Mr Simon Dexter. We chose the theme of the meeting to reflect our perception of one of our nations strengths - "Excellence through Marginal Gains".

An entertaining and privileged insight into the British movie Industry was given by our guest speaker Sir Roy Button who, now retired, has lived his professional lifetime in the thick of the creative film world and who's CV includes most of the iconic films of our lifetimes. The people he has worked closely with are instantly recognisable to us all with the Harry Potter series of films being only one of the more recent projects he has undertaken. It was fascinating, a privilege to listen to and remind me of how significant the British film industry has been in shaping the world in which we live.

The main Congress had seven parallel sessions in progress at any one time and there were 79 sessions in all. The standard of scientific presentation was extremely high. Throughout there was an active and well attended Industry Trade exhibition which was regularly plied with food and drink and served as a bustling central hub to renew old acquaintances, to meet new friends and to learn "the craik" at first hand.



The social evening was also held in the ExCel where the quality of the finger buffet of roast beef and Yorkshire puddings and fish & chips was surprisingly good. The highlight of the evening however was undoubtedly Mike Parker and his band playing a fabulous repertoire of modern toe-tapping classics which had everybody on the floor dancing. Mike is one of our Association's ex-presidents and clearly a man of multiple and hidden talents. What a show!

The EAES is an excellent society and membership is very heavily discounted for members of the ALSGBI; we have been closely affiliated with them for years and play a significant role in their meeting each year. The founders of the EAES were in the founders of laparoscopic surgery in the continent which was the birthplace of therapeutic laparoscopy. As a member of EAES we also have the opportunity to receive *Surgical Endoscopy*, the foremost laparoscopic journal in the World (which is edited by Professor Hanna).

I thoroughly recommend attending their meetings, held once a year in the summer months. Next year it will be held in Seville and I hope we will see as many UK delegates as possible. Seville is a beautiful and historic city in Andalucia, Spain and there will be something for everybody. Mark the dates 12 June (pre-congress) and 13-14 June for the Conference itself.

Mr Peter Sedman
ALSGBI Past President

AUGIS 21st Annual Scientific Meeting

19-21 September 2018, Edinburgh



AUGIS enjoyed a successful Annual Scientific Meeting in Edinburgh with a host of great speakers, parallel sessions, a Training Day, Free Papers and a trade exhibition complete with robotics. Topics covered included

Pre-habilitation, minimally invasive strategies to tackle pancreatitis, a debate on robotic surgery, how randomised trials are changing clinical practice and quality performance indicators in cancer treatment. There was general agreement that the quality of the presentations was very high this year and the international contribution was significant.

AUGIS looks forward to welcoming delegates to its next Annual Scientific Meeting in Liverpool 2019.



13th European Society of Coloproctology 2018 Scientific Meeting

26-28 September 2018, Nice, France



Set in the modern Acropolis Palais de Congress, a short walk away from the old town of Nice, this was the most highly attended ESCP meeting ever. With a very strong UK contingent in terms of faculty and attendees the content was of a diverse and excellent quality highly relevant to today's colorectal specialist.

Spread over 4 days gave opportunity to top up knowledge and meet surgeons from across Europe. Tuesday was strictly speaking the pre-congress

practical workshops including Operative techniques for preventing and repairing para-stomal hernias, AIN and high resolution anoscopy for surgeons and an Endo-anal and pelvic floor workshop.

The main conference kicked off with a 'tips and tricks' session with Wexner, Heald and Solomon followed by symposia on Hereditary Colorectal Cancer and the ever-popular consultants' corner. As always parallel sessions on education, guidelines and trials were also in progress together with a large poster section around the hall and adjacent to the bustling industry exhibition.

The opening drinks reception on the Wednesday evening was very informal and the Beach Part at Castel Plage beneath the Promenade des Anglais overlooking the Bay of Angels was most successful.

Keynote lectures included Microbiomic and Metagenomic Influences on Colorectal Patients (Linda Ferrari and Des Winter), Management of Para-aortic and Lateral Pelvic Lymph Nodes in Colorectal Cancer (Peter Tsarov), Breath Biopsy for Colorectal Cancer Screening (Mark Katory), Big Data in Surgical Practice (Emmanuel Tiret) and Strategies to Reduce SSI (Marja Boermeester). Although a predominantly laparoscopic surgeon I found the focus on the abdominal wall a useful symposium and to wrap things up Steven Brown's summary of where we are in haemorrhoidectomy.

Of note to our members is how laparoscopic bowel resection is pretty much the norm now; it is no longer controversial but the mainstay of treatment across Europe.

The weather was fantastic and although I doubt next year's meeting in Vienna will be as good I look forward to attending.

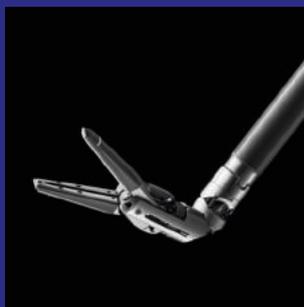
Mr Neil Keeling

ALSGBI Anglian Regional Representative

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4th Northern Laparoscopic and Robotic Video Symposium

5 October 2018, James Cook University Hospital



We had another productive and excellent 4th Video Symposium in the 'Learning Research Institute' (LRI) postgraduate centre at James Cook University Hospital on 5 October 2018. A total of 110 delegates and faculty attended this interactive one day symposium that was accredited for 6 CPD points by RCS Edinburgh.

This meeting was graced by national and international faculty including Dr Misha Luyer, Upper GI, Bariatric and Pancreatic Minimally Invasive Surgeon from Eindhoven, Netherlands, Mr C Selvasekar, Consultant Robotic Colorectal Surgeon from Manchester and Mr Bruno Sgromo, Consultant Upper GI Laparoscopic and Bariatric

Surgeon from Oxford.

The meeting was organised and convened by Mr A Reddy and Professor YKS Viswanath with huge support from our regional MCh faculty: Mr G Bussa, Mr T Gill, Mr A Gilliam and Mr V Shanmugam.

The day included a series of video talks including robotic colorectal surgery and pancreatic surgery with minimal access oesophagectomy and gastrectomy. It ended with a few presentations from trainees in the North East. Mr S Dexter, ALSGBI President, shared a few moments on 'the future ALSGBI' as a national association and emphasized robotic and advancing technology.

We plan to host the 5th Northern Video Annual Meeting in November 2019. We look forward to the next meeting and invite all trainees to make a note of the date and value your continued support.
Thanks.

Professor YKS Viswanath

Consultant Upper GI and Laparoscopic Surgeon
ALSGBI Northern and Yorkshire Representative

Mr Anil Reddy

Consultant Robotic Colorectal Surgeon

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References: 1. Greiling, M. A multinational case study to evaluate and quantify time-saving by using custom procedure trays for operating room efficiency. Data presented at the 23rd Congress of the European Association of Hospital Managers, Zurich, Switzerland, September 2010 (poster).

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Jaffna, Sri Lanka 2018



Earlier this year Tan Arulampalam, Jane Hendricks and I were lucky enough to travel to Sri Lanka with one of our ex ALSGBI Presidents, Mike Rhodes. Our visit coincided with the Annual conference of the College of Surgeons of Sri Lanka in the Northern Province. Jaffna was hit very badly by the Sri Lankan civil war and has spent most of recent years rebuilding itself. One of our past Staff Grades in Colchester, Mr Dayalan Ambalavanar, who is a specialist in urology as well as being a lecturer at the University of Jaffna, kindly invited us to attend the conference to speak on human factors in patient safety, to demonstrate some laparoscopic surgery and also run a basic surgical skills course.

We arrived in Colombo at 8pm on a warm Sunday evening and then arose the next morning at 5am to catch the train up to Jaffna. The journey was amazing: Through beautiful countryside, along very bumpy tracks and with lots of people watching opportunities!

A warm welcome awaited us in Jaffna and after a short trip to the hotel we were quickly put to work and attended the inaugural meeting. I could go on and on about this absolutely fantastic experience. We visited the Jaffna Teaching Hospital where Jane and I assisted Tan and Mike in laparoscopic hernia, gallbladder surgery and de-roofing of a renal cyst in conditions not quite the same as at home. We were, however, welcomed with smiles and kind handshakes everywhere.

Jane and I visited a smaller provincial hospital where we spoke to the nursing staff. They couldn't believe we were nurses in such "important" roles.



We saw the lady who sewed the swabs sitting next to the patients sitting awaiting their procedures.

Tan and I delivered a talk on human factors to a very attentive audience - that may be because they had never seen a consultant surgeon and nurse work together with a very level authority gradient! Our talk was well received, but I feel we have a few years yet until they are as relaxed as we are in England. Mike gave an interesting talk about cholecystectomy and retrieval of bile duct stones laparoscopically and Tan spoke on colorectal advances in the UK.

Jane led (much to the delegates' surprise) the workshop on basic surgical skills. It was well received and I think the delegates left with more knowledge than they had bargained for.

Later we also visited a fantastic children's after school club. These children have very little. The majority of men were killed during the war and the women are working hard to provide for their families. We are interested in developing a programme whereby we can work with this charity school to support the children in coming years. To this end we really need to go back again, to work with the teams raising the patient safety awareness ideals, demonstrating more laparoscopic surgery, promoting the idea of multidisciplinary teams and continuing to educate the surgeons in post.

Watch this space for more information.

Ms Debbie Gooch
ALTS Chair



ALSGBI Scientific Programme

Wednesday 5 December 2018

THE SCIENTIFIC PROGRAMME MAY BE SUBJECT TO CHANGE AT SHORT NOTICE

TIMETABLE	
08:30 – 19:15	REGISTRATION DESK OPEN REFRESHMENT TIMES
08:30 – 09:30	Tea & Coffee
12:30 – 14:00	Lunch
15:30 – 16:00	Tea & Coffee
	INDUSTRY EXHIBITION CHARTER 2 & 3, GROUND FLOOR Meet with the leaders of industry and partake in the highly competitive Industry Challenge
09:00 – 09:05	WELCOME: Mr Simon Dexter (President) & Mr Roger Spencer, Chief Executive The Christie NHS Foundation Trust CHARTER 1, GROUND FLOOR
09:05 – 09:10	PLATINUM PARTNER'S PRESENTATION Chairman: Mr Simon Dexter (Leeds) SHAPING THE FUTURE OF SURGERY  Mr Bill Rieth; Director, Global Strategic Marketing – New Product Development, ETHICON
09:10 – 16:10 <i>Flexible Timing</i>	LIVE HD LAPAROSCOPIC, ROBOTIC & TECHNOLOGY ENHANCED SURGERY SIMULTANEOUSLY FROM THE CHRISTIE MANCHESTER & ROYAL DERBY HOSPITAL Manchester THEATRE 4 (T4)  & THEATRE 5 (T5)   Derby OR1 THEATRE 6 (T6)   MANCHESTER OPERATING TEAM Mr Vijay Ramani; Mr Chelliah Selvasekar Mr Michael Smith; Mr Hamish Clouston TRAIN THE TRAINER TEAM Professor Nader Francis, Teacher (Yeovil) Mr Omer Aziz, Trainer, (Manchester) Mr Tobias Evans, Senior Trainee (Manchester) ROYAL DERBY HOSPITAL TEAM Mr Altaf Awan; Mr Imran Bhatti
In progress by 09:10	T4 ROBOTIC HYSTERECTOMY WITH PELVIC LYMPH NODE DISSECTION Mr Michael Smith (Manchester) 
From 09:10 – 12:00	T5 ROBOTIC UROLOGICAL PROCEDURE: RADICAL PROSTATECTOMY OR PARTIAL NEPHRECTOMY Mr Vijay Ramani (Manchester) 
In progress by 09:00	Derby T6 BILE DUCT EXPLORATION Mr Altaf Awan (Derby)  
09:10-12:00 Moderators: Mr Tan Arulampalam (Colchester); Mr Simon Dexter (Leeds) Professor David Jayne (Leeds); Professor Scott Kelley (USA) Mr Paul Leeder (Derby); Mr David Mahon (Taunton) Robotic Urological Moderators: Professor Noel Clarke (Manchester) Mr Maurice Lau (Manchester); Mr Jeremy Oates (Manchester) Robotic Hysterectomy Moderators: Miss Eva Myriokefalitaki (Manchester)	

TIMETABLE	
12:00 – 12:05	 PLATINUM PARTNER'S PRESENTATION Chairman: Mr Simon Dexter (Leeds) THE AGGREGATION OF MARGINAL GAINS Mr Paul Lewis, UK Business Development Manager, Colorectal, UGI, HPB & Gynaecology, KARL STORZ Endoscopy (UK) Ltd
12:05	 INTRODUCTION TO LAPCO TRAIN THE TRAINER Professor Mark Coleman (Plymouth) Chairman: Mr Simon Dexter (Leeds)
12:30	LUNCH will be served in The Industry Exhibition Charter 2 & 3
13:00 – 15:00	T4  LAPCO TRAIN THE TRAINER LAPAROSCOPIC RIGHT HEMICOLECTOMY/LAPAROSCOPIC ANTERIOR RESECTION (ROLE PLAY) Professor Nader Francis, Teacher (Yeovil) Mr Omer Aziz, Trainer (Manchester) Mr Tobias Evans, Senior Trainee (Manchester)
	T5  LAPAROSCOPIC ANTERIOR RESECTION Mr Hamish Clouston (Manchester) Mr Chelliah Selvasekar (Manchester)
13:00-15:00 Moderators: Professor Mark Coleman (Plymouth) Mr Neil Keeling (Bury St. Edmunds); Professor Sarah O'Dwyer (Manchester); Mr Graham Whiteley (Bangor); Mr Malcolm Wilson (Manchester)	
From 15:00 – 16:10	Derby T6  INFRA-COLIC LAPAROSCOPIC APPROACH TO 'WALLED OFF NECROSIS' WITH ROUX EN Y PANCREATIC CYST JEJUNOSTOMY Mr Altaf Awan (Derby) Mr Imran Bhatti (Derby)
'AS LIVE' RECORDINGS. SHORT DVDS ON COMPLICATIONS AND HOW TO DEAL WITH THEM PREVENTION AND MANAGEMENT OF COMPLICATIONS OR NEAR MISSES Chairman: Mr Simon Dexter (Leeds)	
15:00-16:10 Moderators: Mr Simon Dexter (Leeds); Professor Nader Francis (Yeovil); Professor Scott Kelley (USA) Mr Paul Leeder (Derby); Professor Saumitra Rawat (India) Mr Peter Sedman (Hull)	
16:10 – 17:00	 THE USE OF ICG IN GI SURGERY – PERFUSION & BEYOND Mr Manish Chand, UCLH (London) Chairman: Mr Simon Dexter (Leeds)
17:00 – 17:05	 PLATINUM PARTNER'S PRESENTATION Chairman: Mr Simon Dexter (Leeds) THE CURRENT & FUTURE LANDSCAPE OF ROBOTIC SURGERY Mr Michael Ghattas, Clinical Sales Manager, Intuitive Surgical
17:05 – 17:25	 INTRODUCTION TO ROBOTIC TRAIN THE TRAINER Mr Chelliah Selvasekar (Manchester) Chairmen: Mr Simon Dexter (Leeds) Professor Nader Francis (Yeovil)



LIVE LINKS SPONSORED BY COOK, ETHICON, INTUITIVE, KARL STORZ, MÖLNLYCKE HEALTHCARE
THE LIVE SURGERY CAN ALSO BE VIEWED IN THE INDUSTRY EXHIBITION, CHARTER 2 & 3, FROM THE MEDTRONIC STAND

ALTS Scientific Programme

Wednesday 5 December 2018

TIMETABLE	
17:25	<p>ANNOUNCEMENT OF THE TOP 2 POSTERS FOR PRESENTATION Chairman: Mr Simon Dexter (Leeds)</p> <p>PRESIDENT'S ROUND-UP OF THE DAY</p>
17:30 – 19:15	<p>THE PRESIDENT'S DRINKS RECEPTION in Manchester Central, Charter 2 & 3 with special guest, Mr Andy Burnham, Mayor of Greater Manchester</p> <p>INDUSTRY EXHIBITION Meet with the leaders of industry and partake in the highly competitive Industry Challenge</p>
19:30 – 22:30	<p>CONFERENCE DINNER at The Midland Hotel, Manchester After Dinner Speaker former Derbyshire, Essex, Natal and England Player and England Cricket Selector, Mr Geoff Miller OBE</p>

TIMETABLE	
08:30–12:30	ALTS delegates are welcome to attend the ALSGBI live surgery programme
13:00–14:00	<p>REGISTRATION & LUNCH INDUSTRY EXHIBITION CHARTER 2 & 3, GROUND FLOOR Meet with the leaders of industry and partake in the highly competitive Industry Challenge</p>
14:00–14:05	<p>WELCOME & INTRODUCTION: Mrs Debbie Gooch (ALTS Chair) CHARTER 4, GROUND FLOOR</p>
14:05–14:30	<p>THE ELEMENTAL HEALTHCARE LECTURE WHOSE FAULT IS IT ANYWAY?  Professor Michael McMahon Consultant General Surgeon specialising in Upper Gastrointestinal Surgery (Leeds) Chairmen: Mr Tan Arulampalam (Colchester) Mrs Debbie Gooch (Colchester)</p>
14:30–15:30	<p>HUMAN FACTORS IN FAILURE; HOW DO HUMAN FACTORS HINDER OR HELP OUR TEAMS? WHAT WE CAN DO TO PREVENT COMPLICATIONS? Mr Tan Arulampalam Laparoscopic & General Colorectal Surgeon Colchester Hospital Chairman: Mrs Debbie Gooch (Colchester)</p>
15:30–16:00	<p>TEA, COFFEE & EXHIBITION VIEWING TIME INDUSTRY EXHIBITION CHARTER 2 & 3, GROUND FLOOR Meet with the leaders of industry and partake in the highly competitive Industry Challenge</p>
16:00–17:30	<p>LEARNING FROM EVENTS SMALL AND LARGE: FROM A CRISIS IN THEATRE TO THE MANCHESTER ARENA ATTACK Mr David Jones Consultant General and Colorectal Surgeon Wythenshawe Hospital, Manchester Chairmen: Mr Tan Arulampalam (Colchester) Mrs Debbie Gooch (Colchester)</p>
17:30–17:35	<p>THINK! PLASTIC WASTE. THINK RESPONSABLE Mr Steve Lynn, Sales Director Elemental Healthcare  Chairmen: Mr Tan Arulampalam (Colchester) Mrs Debbie Gooch (Colchester)</p>
17:35–19:15	<p>Meet with the leaders of industry and partake in the highly competitive Industry Challenge</p> <p>THE PRESIDENT'S DRINKS RECEPTION INDUSTRY EXHIBITION CHARTER 2 & 3, GROUND FLOOR with special guest, Mr Andy Burnham Mayor of Greater Manchester</p>
19:30–22:30	<p>ALTS CONFERENCE DINNER 'Ashas', 47 Peter Street, Manchester M2 3NG Exclusive Event! Pre-booking essential as spaces are limited</p>

ALSGBI Scientific Programme

Thursday 6 December 2018

TIMETABLE

08:30 – 09:00 **REGISTRATION, TEA & COFFEE** IN THE INDUSTRY EXHIBITION, CHARTER 2 & 3, GROUND FLOOR
INDUSTRY EXHIBITION
Meet with the Leaders of Industry and partake in the highly competitive **Industry Challenge**

09:00 – 09:05 **INTRODUCTION:** Mr Simon Dexter (President)
CHARTER 1, GROUND FLOOR

09:05 – 09:15 **PLATINUM PARTNERS' PRESENTATIONS**
Chairman: Mr Simon Dexter (Leeds)

INNOVATION IN GI LAPAROSCOPY
Mr Abrie Botha, Consultant Upper GI Surgeon, Guy's & St Thomas, London

BIBRAUN
SHARING EXPERTISE

Mölnlycke

MÖLNLYCKE HEALTHCARE
Mr Chris Rogers, Sales Director

09:15 – 10:03 **DVD SESSION (6 DVDS)**
Chairmen: Mr David Mahon (Taunton)
Mr Colm O'Boyle (Cork)

STORZ
KARL STORZ – ENDOSCOPE

ALL ABSTRACTS ARE PUBLISHED IN FULL IN THE ALSGBI ABSTRACT BOOK WHICH CAN BE DOWNLOADED FROM THE ALSGBI WEBSITE

09:15 – 09:23 **DVD 01** PILOT TRAINING INITIATIVE FOR TRANSANAL TME (TATME): OUR EXPERIENCE
Presenter: B Mahendran
University Hospitals Plymouth NHS Trust, UK

09:23 – 09:31 **DVD 02** LAPAROSCOPIC ADHESIOLYSIS AND COMBINED LAPAROSCOPIC/CYSTOSCOPIC APPROACH FOR REMOVAL OF BLADDER EROSION AND MESH
Presenter: E Tokidis
York Teaching Hospitals NHS Trust, UK

09:31 – 09:39 **DVD 03** MINIMISING THE IMPACT OF A FAILED BANDED BYPASS: REMOVAL OF AN ADJUSTABLE GASTRIC BAND AND PLACEMENT OF MINIMIZER RING
Presenter: S Korambayil
East Surrey Hospital, Redhill, UK

09:39 – 09:47 **DVD 04** ROBOTIC PERINEAL HERNIA REPAIR
Presenter: A Macleod
Sunderland Royal Hospital, UK

09:47 – 09:55 **DVD 05** LAPAROSCOPIC REPAIR OF A HIATUS HERNIA IN TOTAL SITUS INVERSUS
Presenter: C Gilbert
Surrey and Sussex NHS Trust, Redhill, UK

09:55 – 10:03 **DVD 06** INTRALUMINAL BLEEDING WITH JEJUNO-JEJUNAL OBSTRUCTING CLOT FORMATION POST ROUX-EN-Y GASTRIC BYPASS (CASE REPORT)
Presenter: B Berczky,
Royal Derby Hospital, UK

10:03 – 10:13 **POSTER PRESENTATIONS: THE TOP 2**
Chairmen: Mr David Mahon (Taunton)
Mr Colm O'Boyle (Cork)

OLYMPUS
The World's Endoscope

10:13 – 10:45 **TEA & COFFEE** WILL BE SERVED IN THE INDUSTRY EXHIBITION, CHARTER 2 & 3, GROUND FLOOR
INDUSTRY EXHIBITION
Meet with the Leaders of Industry and partake in the highly competitive **Industry Challenge**

TIMETABLE

10:45 – 11:10 **AVOIDING COMPLICATIONS IN ROBOTIC SURGERY**
INTUITIVE.
Professor Scott Kelley
(Mayo Clinic, Rochester, USA)
Chairman: Mr Simon Dexter (Leeds)

11:10 – 11:35 **THE EUROPEAN ASSOCIATION FOR ENDOSCOPIC SURGERY LECTURE. TRAINING IN MINIMAL ACCESS SURGERY IN ASIA PACIFIC AND AVOIDING ERRORS & COMPLICATIONS**

Professor Saumitra Rawat
(Sir Ganga Ram Hospital, New Delhi, India)
Chairman: Mr Simon Dexter (Leeds)

11:35 – 12:10 **MINI SYMPOSIUM: 'THE IMPORTANCE OF GETTING IT RIGHT'**
Chairman: Mr Simon Dexter (Leeds)
Followed by Questions & Answers
ON THE EDGE OF DISASTER: NEAR MISSES IN MINIMAL ACCESS COLORECTAL SURGERY
Professor Nader Francis (Yeovil)

STAYING OUT OF TROUBLE

Professor Peter Sagar (Leeds)
Panel: Professor Nader Francis (Yeovil)
Professor Scott Kelley (USA)
Professor Saumitra Rawat (India)
Professor Peter Sagar (Leeds)

12:10 – 12:25 **LESSONS FROM CORESS**
(Confidential Reporting System in Surgery)
Professor Frank Smith (Bristol)
Chairman: Mr Chelliah Selvasekar (Manchester)

12:25 – 13:05 **FREE PAPERS FROM SUBMITTED ABSTRACTS (4 PAPERS)**
Medtronic
Chairmen: Mr Paul Leeder (Derby)
Professor YKS Viswanath (Middlesbrough)

12:25 – 12:35 **FP 01** ANASTOMOTIC LEAK AFTER COLORECTAL SURGERY: AN INSIGHT OF RISK FACTORS
Presenter: H Younus
King's College Hospital, London, UK

12:35 – 12:45 **FP 02** IMPACT OF ROBOTIC PLATFORM ON RECOVERY AFTER RECTAL CANCER SURGERY
Presenter: T Petropoulou
Sheffield Teaching Hospitals, UK

12:45 – 12:55 **FP 03** LAPAROSCOPIC TOTAL ADVENTITIAL RESECTION OF THE CARDIA PROVIDES IMPROVED SURVIVAL FOR PATIENTS WITH CANCER AT THE OESOPHAGO-GASTRIC JUNCTION
Presenter: A Botha
Guy's and St Thomas' Hospitals, London, UK

12:55 – 13:05 **FP 04** LAPAROSCOPY IN EMERGENCY GENERAL SURGERY (LEGS): A NATIONAL MULTI-CENTRE REVIEW OF CURRENT CONSULTANT PRACTICE IN THE UK
Presenter: P Sodde
North West Deanery, UK

ALSGBI Scientific Programme

Thursday 6 December 2018

TIMETABLE

13:05 – 14:00 **LUNCH** WILL BE SERVED IN THE INDUSTRY EXHIBITION, CHARTER 2 & 3, GROUND FLOOR
INDUSTRY EXHIBITION
 Your last chance to meet with the Leaders of Industry and partake in the highly competitive **Industry Challenge**. All competition coupons to be handed to Team ALSGBI by 14:30

14:00 – 14:15 **ANNUAL GENERAL MEETING**



AGENDA

- 1 Apologies for Absence (Mr David Mahon)
- 2 Minutes of the ALSGBI AGM held on Friday 10 November 2017 at City Hall, Cardiff (Mr Simon Dexter)
- 3 Honorary Secretary's Report (Mr David Mahon)
 - a. ALSGBI Session @ ASGBI International Surgical Congress, The International Centre Telford, 7-9 May 2019
 - b. 27th International Congress of the EAES, Seville, Spain, 12-15 June 2019
 - c. ALSGBI 2019 Annual Scientific Meeting Royal Armouries, 14-15 November
 - d. ALSGBI 2019 Laparoscopic Surgery Training Day, St James's University Hospital Leeds, 13 November
 - e. ALSGBI 2020 Annual Scientific Meeting, ILEC, Ibis London Earls Court, 7-8 December
 - f. ALSGBI 2020 Laparoscopic Surgery Training Day, 6 December
 - g. ALSGBI Council & Regional Election Results
 - h. Announcement of the Travelling Scholarship Winners
- 4 Honorary Treasurer's Report (Mr Donald Menzies)
 - ◆ Membership Fees
- 5 Director of Education's Report (Mr Paul Leeder)
 - ◆ LapPass
- 6 President's Report (Mr Simon Dexter)
 - ◆ Incorporating Robotics & Technology Enhanced Surgery
- 7 Any Other Business

14:15 – 14:30 **SWORD (Surgical Workload, Outcomes & Research Database) UPDATE**
 Mr Ian Beckingham (Nottingham)
 Mr Mark Vipond (Gloucester)
 Chairman: Mr Simon Dexter (Leeds)

14:30 – 15:00 **THE ALSGBI LECTURE TRAINING IN ROBOTIC COLON & RECTAL SURGERY**
 Professor Scott Kelley, (Mayo Clinic, Rochester, USA)
 Chairman: Mr Simon Dexter (Leeds)



TIMETABLE

15:00 – 15:40 **FREE PAPERS FROM SUBMITTED ABSTRACTS (4 PAPERS)**
 Chairmen: Mr Andrew Day (Redhill)
 Mr Ewen Griffiths (Birmingham)

15:00 – 15:10 **FP 05 OUTCOMES OF LAPAROSCOPIC PANCREATODUODENECTOMY (LPD) FROM A TERTIARY CENTRE**
 Presenter: S Patel
 Addenbrookes Hospital, Cambridge
 University Hospitals NHS Foundation Trust, UK

15:10 – 15:20 **FP 06 WHAT ARE ACCEPTABLE OUTCOMES AFTER LAPAROSCOPIC FUNDOPLICATION? A COMPARISON OF PATIENTS GPS AND SURGEONS**
 Presenter: A Currie
 Flinders University Department of Surgery, Flinders Medical Centre, Adelaide, Australia, Western Sussex Hospitals NHS Trust, Chichester, UK

15:20 – 15:30 **FP 07 QUANTIFYING TENSION IN TENSION-FREE HIATAL HERNIA REPAIR: A NEW INTRA-OPERATIVE TECHNIQUE**
 Presenter: L Navaratne
 Northwick Park Hospital, London, UK

15:30 – 15:40 **FP 08 COMPARATIVE ANALYSIS OF OPEN LAPAROSCOPIC AND ROBOTIC DISTAL PANCREATIC RESECTION: AN ANALYSIS OF A SINGLE CENTRE EXPERIENCE**
 Presenter: SK Kamarajah
 Department of Hepatobiliary, Pancreatic and Transplant Surgery, Academic Department of Surgery, Freeman Hospital, Newcastle, UK

15:40 – 16:00 **TRAVELLING SCHOLARSHIP PRESENTATIONS**
 Chairmen: Mr Simon Dexter (Leeds)
 Mr David Mahon (Taunton)

GASTRIC CANCER SURGERY AT THE NATIONAL CANCER, CENTER, SEOUL

 Mr Nima Abbassi-Ghadi (Guildford)

LESSONS IN LAPAROSCOPIC LIVER SURGERY FROM MILAN

 Mr Andrew Healey (Edinburgh)

16:00 – 16:10 **ALSGBI AWARDS CEREMONY**
 Chairmen: Mr Simon Dexter (President)
 Mr David Mahon (Taunton)
 LapPass Qualifiers 2015-2018
 Winner of the 2018 David Dunn Medal
 Winner of the 2018 Journal of Surgical Simulation Award
 Winner of the 2018 ALSGBI Best Laparoscopic DVD Prize
 Winner of the 2018 ALSGBI Best Laparoscopic Poster Prize
 Winner of the 2018 Industry Challenge



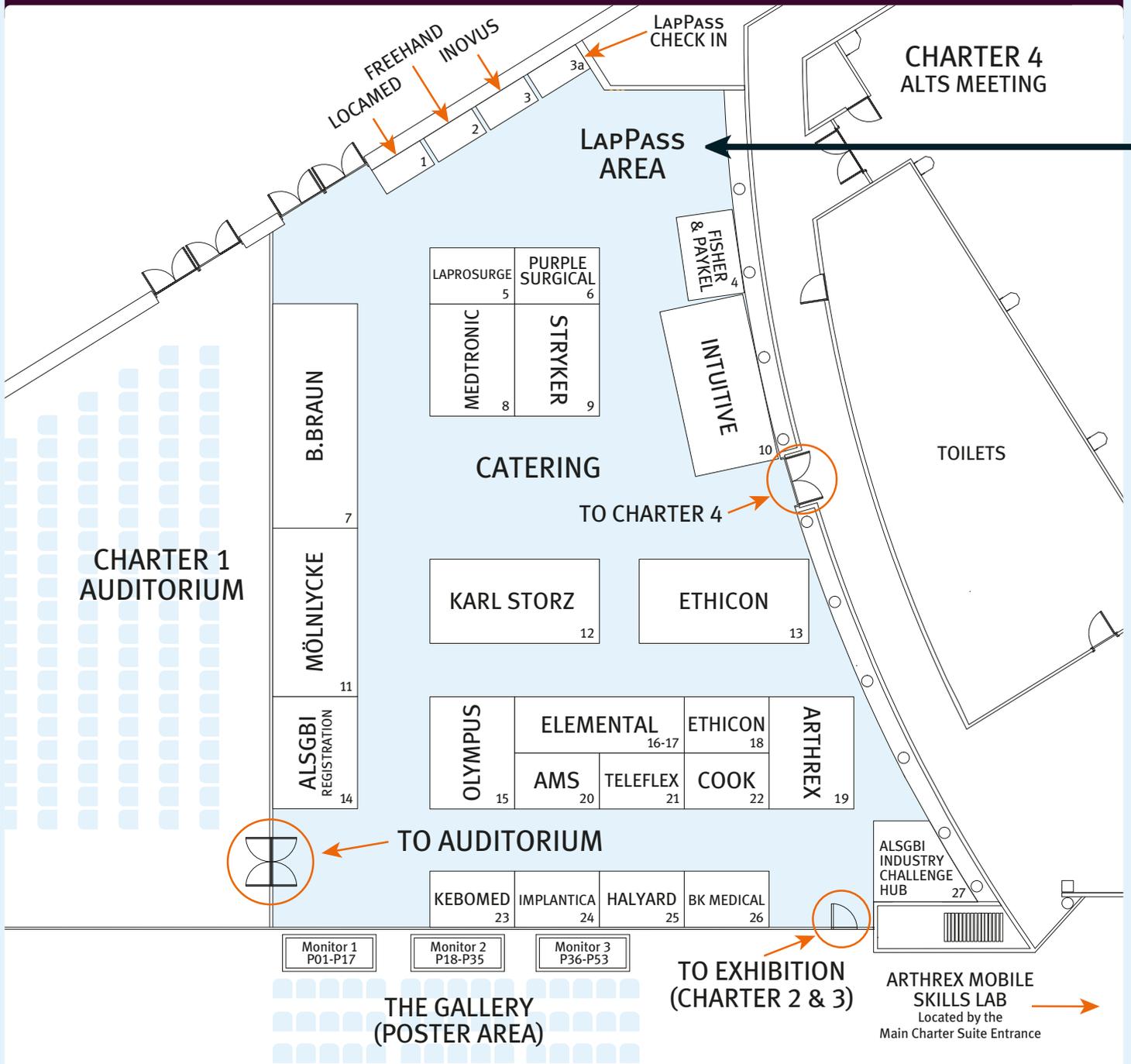
ALSGBI INDUSTRY AWARDS



16:10 **PRESIDENT'S CLOSING REMARKS**

The ALSGBI Exhibition Plan

CHARTER 1-4 / GROUND FLOOR



KEY TO EXHIBITION PLAN

- 14 ALSGBI Registration Desk
- 27 ALSGBI Industry Challenge Hub
- 3a ALSGBI LapPass Check-In
- 20 Advanced Medical Solutions
- 19 Arthrex Ltd
- 26 BK Medical
- 7 B. Braun Medical Ltd
- 22 Cook Medical Europe Ltd
- 16&17 Elemental Healthcare
- 13&18 ETHICON
- 4 Fisher & Paykel Healthcare Ltd
- 2 Freehand
- 25 Halyard Health UK Ltd
- 3 Inovus Medical
- 24 Implantica MediSwiss AG
- 10 Intuitive Surgical Sarl
- 12 KARLSTORZ Endoscopy (UK) Ltd
- 23 Kebomed Ltd
- 5 LaproSurge Ltd
- 1 Locamed Ltd
- 8 Medtronic Ltd
- 11 Mölnlycke Health Care Ltd
- 15 Olympus Medical
- 6 Purple Surgical
- 9 Stryker UK Ltd
- 21 Teleflex
- Companies partaking in the Industry Challenge.
Time to meet with the leaders of industry – your chance to take part in the highly competitive ‘Industry Challenge’ – All delegates to compete!

LAPPASS – THE LAPAROSCOPIC PASSPORT FOR SURGICAL TRAINEES

THE ALSGBI CERTIFICATE OF TECHNICAL SKILLS PROFICIENCY IN LAPAROSCOPIC SURGERY

This gratis certificate can be added to your portfolio when a series of timed laparoscopic skills tests are successfully passed. The 5 defined laparoscopic skills assessing a high standard in core competencies are:

- Camera Holding (assessed intra-operatively)
- Cutting & Dissection
- Grasping & Manipulation
- Intracorporeal Suturing
- Creation & Accurate Deployment of Secure Endo-Loops (e.g. Roeder Knots)

Resources for the instructions on the tasks are available on the ALSGBI website <http://www.alsgbi.org/trainees/passport> from where assessment forms can also be downloaded.

The acquisition of the LapPass is a nationally recognised standard and evidences a high level of skill in laparoscopic tasks relevant to advanced surgery. All trainees are encouraged to achieve this standard and to demonstrate this by obtaining the LapPass certificate.

There will be 6 units in the LapPass Training Area in the Exhibition. The LapPass check-in desk will be open from 08:30-18:00 on Wednesday 5 December and 08:30-14:00 on Thursday 6 December when it will be possible to book the LapPass examination which will take place in the Arthrex Mobile Skills Lab by the main entrance to the Charter Suites.

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Blockchain and Artificial Intelligence: What will they mean for Healthcare?

The revolution in data management and the concept of digital health has gathered pace in the last two years. Our surgical society has always been at the cutting edge of surgical innovation and here we give a flavour of what is round the corner. Artificial Intelligence (AI) and the blockchain revolution have made their way to the healthcare industry, and it's only the beginning of what's possible.

Artificial Intelligence

For millions of years humans have relied on the skill and knowledge of other human beings to diagnose illness and disease. The field of AI has been unlocked by scientists and mathematicians and is defined as a 'field of science and engineering concerned with the computational understanding of what is commonly called intelligent behaviour, and with the creation of artifacts that exhibit such behaviour'. Essentially it is the simulation of human intelligence in a digital format.

AI will impact on all our lives in a number of ways. In order to understand how AI could benefit the efficient delivery of our healthcare we explain a simplified model of how the technology of AI actually works and how it is currently used on a small scale in medical practice. It is important to consider how AI's presence in other industries has accelerated research into the technology and how this could provide a foothold to its widespread introduction into medicine. Can we say now that AI will become a common tool for medical diagnosis and therapy in the future? There are several disadvantages of using AI in medicine including very real ethical concerns, logistical barriers and technological restrictions.

How does AI work?

Artificial Neural Networks

Artificial Intelligence is more commonly known as 'machine learning' and is only possible due to a technique using Artificial Neural Networks (ANNs). A Neural Network is the computational model that attempts to account for the parallel nature of the human brain and allow the seemingly incomprehensible idea of a machine 'thinking' intelligently as living organisms do. The structure consists of a multitude of elements inspired by biological nervous systems and organised into input layers, hidden processing elements and output layers.

Fuzzy logic

One of the soft computing techniques of AI that allows it to interpret incomplete and imprecise data is known as Fuzzy logic. This mechanism deals with the uncertainty in knowledge that simulates human reasoning in incomplete or fuzzy data. The majority of diagnosis in medicine is full of imprecision; for any one symptom there is never just one clear and definite outcome when considering what disease or condition may be causing that symptom. Therefore, instead of using the conventional logic that assumes every inference is a concrete yes or no answer, fuzzy logic recognises that most diagnoses lie on a scale ranging from highly likely that a patient has a certain disease, to highly unlikely that a patient has that disease. Fuzzy logic may use physiological, radiological and clinical parameters which can be interpreted by the system successfully to present a diagnosis. Furthermore, fuzzy logic has shown successful application amongst a range of other diseases including lung cancer, acute leukaemia and breast and pancreatic cancer. The ability of fuzzy logic to render precise from what is imprecise encapsulates its potential in healthcare due to the nature of uncertainty that is found in almost every single diagnosis.

How is AI currently used in medical diagnosis?

AI is being applied in diagnostic medicine already, most notably at the Memorial Sloan Kettering Hospital for lung cancer assessment and more recently at Moorfields Eye Hospital to evaluate retinal scans and make ophthalmic diagnoses. AI exists as a powerful tool to help doctors to analyse, model and make sense of complex clinical data across a broad range of medical applications suggesting that physicians are already using the benefits

of AI to aid their clinical decisions. Silicon Valley-based tech company NVIDIA has presented a medical imaging supercomputer, CLARA. This has the ability to transform CT, MRI, PET scan, ultrasound, mammograms and other images into 3D information in order to provide better insight for diagnosticians. Clinical application in real world diagnosis has already been applied at Massachusetts General Hospital in Boston where CLARA was trialed to ensure its efficacy. Further deep learning algorithms have proved successful in cardiology, dermatology, and oncology with the winning algorithm obtaining a 92.5% success rate.

Technology companies are already investigating AI in medicine: Figure 1 shows a list of the top performing tech companies and the main areas of research they have explored in relation to AI. IBM Watson has launched a program for oncologists involving the analysis of unstructured data from a patient's clinical records and combines this with data collected from historical evidence, data and expertise in order to identify the best treatment plans for that particular patient.

One of the more consumer-friendly and well publicised innovations of recent years has been the introduction of the mobile health app launched by Babylon offering patients a variety of personal health services available via text messages, video calls and monitoring features. Babylon already has 26,000 users in London alone. Its creators have promised exciting prospects for the future. Ali Parsa, founder and chief executive of the company, explains how he wants to do for healthcare what Google did with information – make it 'accessible and affordable and put it in the hands of every person on Earth'. With around 2.53 billion smartphone users around the world Parsa has clearly identified an effective way of integrating artificial intelligence into the lives of many. Improvements ahead include face and voice analysis as well as a new prediction software using 'big data' further demonstrating the potential the service could fulfil in years' to come.

Company	Main area of research
Google DeepMind	Mining medical records
Verily	Wearable sensors
IBM Watson	Mining medical records
Careskore	Quality of care
Zephyr Health	Identifying therapies
Sentrian	Remote patient intelligence platform
3Scan	Radiology
Enlitic	Radiology
Arterys	Radiology
Atomwise	Drug development
Deep Genomics	Genomics

Figure 1

What do we know from other Industries?

AI is a field of technological innovation within many other industries. The automobile industry's involvement in AI is best known for the creation of driver-less cars, first introduced by Tesla, but followed closely by other major players such as Google, General Motor Company, Toyota Motor Company and Ford Motor Company. The significance and relevance that AI development in the automobile industry has to medicine is highly underestimated. AI is one of the greatest areas of growth within that industry, funding and interest for research is vast with the unintended consequence of accelerating the development of AI technology within healthcare.

The gaming industry has also contributed greatly to advances as demonstrated by NVIDIA whose experience in gaming has been applied to the medical field through the underlying method they use to virtualise a game console and a mouse move to update a pixel on your screen takes only 70 milliseconds. These principles can be applied directly to medical imaging.

Arguably the greatest benefit of using AI to diagnose disease is its relationship with large data sets. AI can hold databanks of information about every known illness and medicine in history and these databanks can be updated daily, not only with the findings of new researchers but also with the medical statistics gathered from every linked clinic and hospital in the world.

A medical student spends approximately six years studying at university and the rest of their career attempting to renew and update their knowledge. Despite this long and expensive process it is physically impossible for a human being to acquire, withhold and recall the volumes of data that a machine can. AI can interpret personal data including entire medical histories of not only a single person but their entire family medical history and genomes. This is in addition to other factors that may help the success of the diagnosis such as a patient's biometric data, sleep patterns and even whether they visited a foreign country recently. AI can tailor its diagnosis more specifically to an individual person, producing the most likely possibility taking into account their personal data. This effectively narrows down the other hypotheses which gives AI a level of precision that cannot be matched by humans.

The increased precision and awareness of an AI system over the human brain was exhibited in 2011 when Watson, an AI supercomputer created by IBM, beat the two best players in the world at the TV game show 'Jeopardy'. Watson 'won the game with \$77,147 leaving Rutter and Jennings in the dust with \$21,600 and \$24,000 respectively'.

This public display of the sheer computing power capable of a digital machine gave the world a glimpse of what lies ahead in precision technology.

Interpreting non-linear disease

An existing barrier to a technological form of diagnosis has always been the idea that a diagnosis is characterised by multiple factors and a vast array of possible outcomes. Diagnosing disease is dependent on a complex interaction of many clinical and biological variables. However, the development of Artificial Neural Networks has enabled the use of such analytical tools to exploit the intricate relationships between these variables and overcome the issue of the non-linear data that is presented. Complexities in diagnoses occur when several possible diseases have findings in common, or if one disorder influences the presentation of another, yet using AI means that rather than using a single biomarker we can study hundreds of thousands. AI has potential in medicine because of its unique ability to interpret more than one element to find the correct solution out of millions of possible hypotheses.

A whole sphere of research has been dedicated to understanding ergonomics in the form of human factors and optimising human performance, indicating that human error is a natural event, one which is physically impossible to fully eradicate. The report, 'Exploring the costs of unsafe care in the NHS' published by Frontier Economics in 2014, suggests that the total cost of preventable medical error amounted to around £1.1 billion per year.

How could Artificial Intelligence be used in the future?

There is a vast quantity of evidence pointing towards the potential for the use of AI in healthcare. In 2016 a study by Frost and Sullivan suggested that the market for AI in healthcare is projected to reach \$6.6 billion in 2021, a 40% growth rate.

This particular report predicts that AI will enhance care delivery by having the potential to improve outcomes by 30 to 40 percent, at the same time the costs of treatment by as much as 50 percent. These astonishing figures demonstrate the interest into the technology from a medical perspective and is supported by a number of more specific examples. These may include mining medical records, designing treatment plans, assisting repetitive jobs and aiding clinicians in diagnoses.

Disadvantages of Artificial Intelligence

Privacy and Security

It is entirely conceivable that the reason for the success of AI could also be the cause of its downfall. AI is dependent on access to multiple health data sets and requires people to surrender large quantities of information to its systems in order to provide them with a sufficient database. Patient data is protected under statutory law, however most AI platforms require considerable computing influence, therefore personal data would stay in vendor's data centres. Hackers and cyber-thieves can benefit from medical records in a number of different ways. They can gain access to names, birth dates, addresses, phone numbers and most importantly, social security numbers. Not only this but medical data can also include sensitive financial information such as credit card or bank account details which, if stolen from hospitals, could have devastating effects.

In order for AI to be successfully introduced on a wide scale to medical practice a high degree of trust must be established between the patient and the computer technology. AI will only be trusted fully if it is proven that extensive security measures have been put in place in order to prevent possible faults in privacy protection.

It is undeniable that fears of uncontrollable data leaks or cyber-attacks have put many off the idea of such a data reliant structure. The matter therefore boils down to whether privacy is a currency people are willing to trade off for utility.

Lack of trust

Having explained the need for trust in the security of AI systems to be confirmed, it is just as important to address the significance of the trust in its safety and readiness. AI error margins must become less or equal to that of their human counterparts. In this way doctors and healthcare professionals can easily justify using AI to aid their diagnosis to the general public.

Lack of knowledge and skill

Also falling under the subsidiary of the technology being relatively new comes the factor of a limited understanding of the technology. In other words, despite coming a long way in recent years our knowledge of artificial intelligence is still at the very edge of our full capacity of understanding. At present this factor is a major limitation in our ability to use AI regularly in healthcare and therefore provides an opposing argument. However this is not to say that in the next 25 years and projecting further into the future, we will continue to expand and accelerate research, striving closer and closer to successfully aid diagnoses on a broad scale in hospitals and clinics.

Logistical Barriers

Variety of data formatting

Health data for all sectors of medical care has individual methods of recording and storing patient information. It is recognised that the NHS is still largely paper-based despite the drive to introduce electronic records across the country. This means that there is an incomplete digital platform and has major logistical implications in that the data is not available for mining in a discrete format.

Lack of interoperability

Not only must we tackle the struggle of a historically paper-based NHS but a second issue arises within the domain of digital records. It is understood that different specialities within healthcare such as primary care, specialists and hospitals, all tend to operate on different digital platforms. The problem that occurs as is AI cannot easily interpret the data if it cannot be collated together, which may lead to an incomplete analysis of patient material

Ethical Concerns

Could Artificial Intelligence take over the role of doctors? Possibly the most common debate surrounding AI in relation to medicine is whether AI, if used more widely, could take the jobs of doctors and remove the need for human professionals in the field.

Surely the notion of a machine being able to diagnose illness suggests that our current method of diagnosis will become redundant? Despite demonstrating the enormous potential for AI in the medical field, human input will still be invaluable to healthcare around the world. Emotional contact is still necessary for adequate patient care, whether this be breaking bad news to a patient, being able to educate patients on their illness or simply bedside care, it will remain vital regardless of the technological advancements we make and implement. For this reason I fully agree with the statement made by Curtis Langlotz, Professor of Radiology and Medicine at the Stanford University Medical Centre, "Artificial Intelligence will not replace radiologists, yet those radiologists who use AI will replace the ones who don't". This idea can be related to doctors' in general not just radiologists, so we must all take note.

Moreover, AI's capabilities have also induced fears over the power of the intelligence it possesses. Not only could the systems take our livelihoods but they could also take our lives. An extreme example of this was described by neuroscientist and philosopher Sam Harris, at a TEDSummit. He spoke of how 'the gains we make in artificial intelligence could ultimately destroy us... or inspire us to destroy ourselves'. He explains how creating machines that improve themselves will ultimately lead to what mathematician IJ Goodmann calls an "intelligence explosion". Eventually machines capable of higher levels of intelligence than ourselves will overpower and destroy us. Harris' convincing speech gives an alternative view into the plausible dangers that we face in the world of technological development. Although they may seem like stories from a science fiction movie these risks are very real and must not be underestimated when considering whether it is worth increasing the power of AI.

Blockchain in Medicine

Blockchain principles were first applied in the financial world as the technology that allowed Bitcoin to operate. Blockchains are distributed systems that log transaction records on linked blocks and store them on an encrypted digital ledger. There is no one central administrator but it has unprecedented security benefits because records are spread across a network of replicated databases that are always in sync. Users can only update the block they have access to, and those updates get replicated across the network. All entries are time and date stamped.

Blockchain technology is only just getting into our consciousness although healthcare administrators around the world are trying to assess what role, if any, this pivotal technology based on cryptocurrencies will have in healthcare delivery. This article is based on Bernard Marr's research into Blockchain in healthcare. Healthcare Rallies for Blockchain, a study from IBM, found that 16% of surveyed healthcare executives had solid plans to implement a

commercial Blockchain solution this year, while 56% expected to by 2020.

The goal is to create a common database of health information that doctors and providers could access no matter what electronic medical system they used, higher security and privacy, less admin time for doctors so there's more time to spend on patient care, and even better sharing of research results to facilitate new drug and treatment therapies for disease.

Healthcare data will explode in the next few years. It is estimated that around 25 petabytes of data will be created. The information and data related to clinical trials, electronic medical records, finances and billing and medical research are vast and only going to increase. Data management and control are surprisingly disjointed for a field in which logical algorithmic processing is a key building block. The obvious applications are:

Electronic Patient Records and Personal Health Data Management

This field has been extensively researched but no single solution exists. The fact that the data may be spread across networks and be time and date stamped has huge implications for keeping records that cannot be changed and that are held securely. Not only this but these records can be accessed anywhere in the world.

Pharmaceuticals and Medical Supply Chain Integrity

The cost of counterfeit drugs is estimated at around \$200 billion dollars. Blockchain offers a method of stamping authenticity and controlling supply chains. This latter benefit can be translated for medical device companies.

Finances

Medical invoicing within an internal market has many inefficiencies. Medicare suffered a nearly \$30 million fraud in billing and in the UK movement of finances is hindered by the bureaucratic processes. The methodology of Blockchain allows transactions to be processed simultaneously and to be unchangeable and traceable. This makes invoicing secure, real time and fast.

Medical Research

Blockchains could provide the access to make medical innovation quicker. The vast potential of bringing together medical research databases would allow faster and more efficient dissemination.

Data Security

A report in the US stated that between 2015-2016 140 million patient records were breached. With the growth of connected devices and the Internet of Medical Things (IoMT), existing health IT architecture is struggling to keep systems secure. Blockchain solutions have the potential to be the infrastructure that is needed to keep health data private and secure while reaping the benefits of connected medical devices.

Conclusion

There are many factors that must be considered when evaluating the extent to which artificial intelligence will be used in the future of modern medicine. This same consideration must be given to Blockchain technology.

There is a long road to travel which must inevitably include an ethical debate and strict regulation before society can initiate its widespread use. It must prove that it can be trusted in terms of safety, readiness and security as well as addressing the logistical barriers. However these hurdles can be overcome and with sufficient research and interest there is little reason to believe that we will not be seeing a lot more of AI with Blockchain in years to come.

Arguably the most significant benefit that AI will bring to medicine is the way in which ANNs and fuzzy logic overcome the problems faced by clinicians on a regular basis. Processing multiple input values and producing the most likely output value gives intelligent machines extremely high levels of precision which in turn lead to lower treatment costs and a more effective healthcare system. It is clear to see how the impacts of AI interlink and effect each other to ultimately create a far more effective diagnostic model than we currently adopt.

Mr Tan Arulampalam

ALSGBI North Thames Regional Representative

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The Perioperative Quality Improvement Programme and what it means for you, your patients and your hospital

Do you know how patients in your hospital recover after major elective non-cardiac surgery? Do you know the complication rates in your hospital? Do you know what patient recovery is like? Can you be certain that you, your colleagues and your hospital are providing a good service?



Figure 1. National improvement priorities for perioperative care

The Perioperative Quality Improvement Programme (PQIP) is trying to address these important questions and in doing so improve patient outcomes across the UK for all of our patients.

So what is this program?

PQIP was started by the National Institute of Academic Anaesthesia's (NIAA) Health Services Research Centre in 2016. The initiative is supported by the Royal College of Anaesthetists, Royal College of Surgeons (England), the Royal College of Physicians, the Royal College of Nursing, the Faculty of Intensive Care Medicine and the Faculty of Pain Medicine in addition to a number of professional specialist societies.

The aim of the program is to look at the perioperative care of patients undergoing major non-cardiac surgery and measure complication rates, failure to rescue

and patient reported outcomes up one year after surgery. The aim is to collect data to support local and national quality improvement programs and to support the implementation of best practice using a multidisciplinary approach and reduce variation in processes of care. The key focus is the multidisciplinary approach with involvement of nurses, surgeons, anaesthetists, managers and patients in the process.

PQIP has so far been adopted by 80 hospitals, and is aiming to recruit 70,000 patients over five years. A list of eligible procedures can be found at www.pqip.org.uk.

PQIP aims to support local clinicians and managers to use the data for local service improvement. We, as surgeons, are accustomed to the 'hard' outcomes such as length of stay, morbidity, and 30- and 90-day mortality. In addition to these

more commonly used measures of quality, PQIP provides patient focused perioperative data on how our patients recover following major surgery; data that most of us would like to collect but lack the resources to do so. This includes for example your patients' satisfaction with anaesthetic techniques, their pain experience after surgery, whether or not they are enrolled in enhanced recovery pathways, their time to mobilisation, data on patient recovery at six months and disability-free survival at one year. Fortunately, as elective surgery is becoming safer, this recovery data is probably more meaningful. This is the advantage of PQIP. The data from each participating hospital is systematically fed back in real-time using live dashboard along with quarterly and annual reports as well as more commonly used measures of quality such as 30-day

mortality and tracking long-term patient outcomes, including disability-free survival at one year. This allows each participating hospital to review and follow their own data longitudinally and to benchmark their local outcomes against other participating centres in the UK. This data is 'gold' at the end of the rainbow for surgeons who wish to engage with their management teams to drive local quality improvement programmes. For those who are not experienced in quality improvement there are a multitude of resources available on the PQIP website including teaching tools on how to interpret the data, quality improvement tools, published literature and more.

PQIP published its first annual report in April 2018 (www.pqip.org.uk/pages/ar2018). This first report has shown that 11% of PQIP patients in the UK experience a serious complication, which extends average postoperative length of stay by 12 to 20 days depending on the type of surgery. The report identified five national improvement priorities for perioperative care for 2018-2019 (Figure 1).

PQIP is a straightforward study to open and has been adopted by the National Institute for Health Research (NIHR) as a portfolio study. This means funding can be secured at your local hospital to secure research-nurse support to participate.

We would like to thank those of you who are currently participating in PQIP and we would heartily suggest that you open the study at your local hospital if you are not already involved.

We are confident that the outcomes of this study will lead to improved outcomes for our surgical patients and its power will be increased if every hospital in the UK performing major non-cardiac elective surgery engages.

Please contact us if you have any comments or queries through the PQIP website: <https://ppqip.org.uk/content/home>

**Ravi Vohra, Olga Tucker
Giuseppe Aresu**
National Surgical Leads
on behalf of the PQIP project team

Survey of surgeons highlights the importance of high quality surgical gloves for the safety of clinicians and patients and to create long term value for the NHS

Milton Keynes, UK, 1 October 2018

A survey of practising UK surgeons has highlighted the importance of investing in high quality surgical gloves to improve surgical safety and create long term value for the NHS. The survey, carried out by Creative Medical Research and commissioned by Mölnlycke, found that UK surgeons agree that using high quality surgical gloves:

- Provides greater long term value for the NHS
- Improves surgical efficiency and patient outcomes
- Plays an essential role in improving both clinician and patient safety

Improved patient and clinician safety

At a time when surgical gloves are often viewed within budget reconciliation as a commodity, chosen on price over quality, the results of the survey show that ensuring safety for surgeons, their teams and patients is at the forefront of clinicians' minds. It revealed that nearly all (87%) surgeons believe that higher quality surgical gloves improve patient safety and (91%) improve clinician safety in the operating theatre. The majority of surgeons found that using high quality surgical gloves reduces the chance of sharps injuries during surgery.¹

Infection prevention and control in the operating theatre is of critical importance to surgeons. 100,000 needlestick injuries occur in the NHS each year², at an estimated cost to each NHS Trust of £500,000 each year³. Qualitative data from the survey highlighted serious concerns for surgeons and their team over exposure to blood borne viruses such as HIV. 92% of surgeons agreed that using high quality surgical gloves would reduce the chance of being exposed to blood borne viruses.¹ High quality means fewer glove failures⁴. A glove failure can be anything from a defect upon opening, an accidental tear upon donning to a puncture in use.

One general surgeon said they had 'seen glove failure lead to significant anxiety and the need to take post exposure prophylaxis'. Another with over twenty years' experience said, 'Sharps injuries increase the risk of blood borne infections as well as physical and psychological trauma and may involve time off sick'.

Efficiencies and long term value

As the NHS prepares its spending priorities for the next five years, the survey revealed that 70% of surgeons think high quality gloves provide more long term value to the NHS by ensuring the safety and efficient working of surgeons and their teams. Three quarters of surgeons responded that higher quality surgical gloves save time during operations, leading to greater efficiencies whilst the majority of surgeons agreed that investing in high quality gloves leads to long term cost savings and better outcomes for the NHS.

Surgical gloves are one of the key factors that work together to prevent infections in the operating room and should not be viewed as a commodity. High quality means fewer glove failures⁴. What costs more? High quality or dealing with staff and patients exposure to infection? A surgical site infection can increase a patient's hospital stay by an average of 16.8 days at a considerable cost to the taxpayer⁵.

As one surgeon with over 10 years' experience said, 'Surgical site infections have enormous implications for cost, morbidity, and lengthened hospitalisation'.

The survey also demonstrated the clear preference amongst surgeons for Mölnlycke's Biogel® Surgical Gloves, with more than three quarters of surgeons stating that Biogel was their preferred choice. The survey also found that 90% of surgeons recognise Biogel as a high quality glove.

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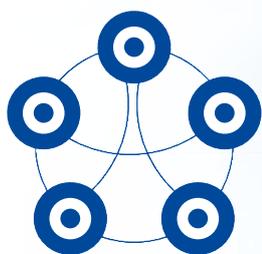
About Mölnlycke

Mölnlycke is a world leading medical solutions company. Our purpose is to advance performance in healthcare across the world. That is why we aspire to equip everybody in healthcare with solutions to achieve the best outcomes. We develop and bring to market innovative wound care and surgical solutions along the entire continuum of care – from prevention to post-acute settings. Our solutions provide value for money, supported by clinical and health economic evidence.

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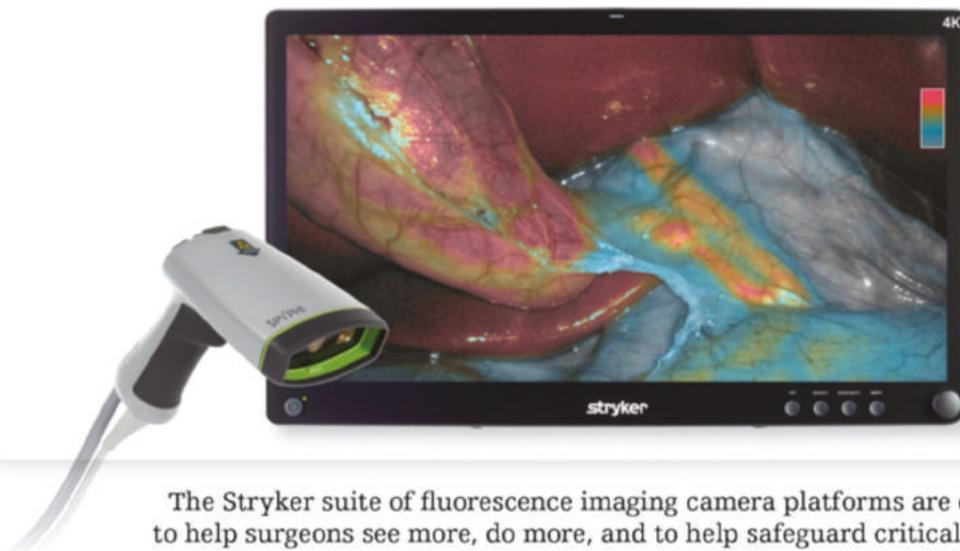


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