# 28. The ERAS® Society

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The Enhanced Recovery After Surgery and Perioperative Care Society (ERAS; www.erassociety.org) was formed in January of 2010 in Amsterdam and a few months later that year formally registered as a not-for-profit multiprofessional, multidisciplinary academic medical society. The Society aims to improve perioperative care by developing science and research in the field, developing and promoting education and implementation of evidence-based perioperative care programmes. The ERAS Society was started as a network of doctors and nurses involved in different disciplines in surgical practice, anaesthesia and intensive care.

## The ERAS Study Group

The ERAS Society was born out of a collaborative network in Northern Europe. Ken Fearon from Edinburgh and Olle Ljungqvist from Stockholm met at a conference outside London in 2000 and decided to start collaboration with some other groups interested in perioperative care. Ken had good contacts with Maarten von Meyenfeldt and Cornelius Dejong in Maastricht, the Netherlands and Olle had similar good relations with Henrik Kehlet in Copenhagen, Denmark and Arthur Revhaug in Tromsö, Norway. These leaders were invited to a small conference in London early the next year to discuss the prospects of further developing what was then often referred to as fast track surgery, and probably first mentioned in cardiac surgery [1]. These ideas in cardiac surgery had been further developed by Henrik Kehlet who described a multimodal approach to improve the rate of recovery after colonic

L.S. Feldman et al. (eds.), *The SAGES / ERAS®*
*Society Manual of Enhanced Recovery Programs for*
*Gastrointestinal Surgery*, DOI 10.1007/978-3-319-20364-5_28,

surgery [2]. Kehlet's work had been developed from the use of epidurals for pain relief and stress reduction. All participants had a keen interest in the stress response to surgery, nutrition and metabolism and the role that manipulating aspects of the stress response may have on outcomes after surgery. The Maastricht group had shown the effectiveness of nutritional support on outcomes in surgery, Tromsö had implemented early post-operative food and studied anabolic factors, Edinburgh had done studies on cancer and nutrition, and Stockholm had presented the idea of fluid and carbohydrate loading instead of overnight fasting and the role of insulin resistance in recovery.

Together the ERAS Group set out to put metabolism and nutrition back on the agenda for surgery and anaesthesia. The group started to hold regular meetings and began to review the literature available for perioperative care that could make a difference for improving outcomes and recovery. A very important aspect for the group was how to name the process of improvement. It was felt that "Fast track" had a negative cling to it by focussing on "fast" rather than the patient. The group therefore decided to change the name of the process to Enhanced Recovery After Surgery—ERAS, and that is how the word was invented. This placed the focus on the patient's recovery and by improving recovery secondary gains could be achieved such as shorter length of stay and financial savings. However, for the group and later the ERAS Society, the focus remains with patient outcomes first and foremost. A key aspect throughout this work has been the involvement of nursing and other disciplines making the work truly multidisciplinary and involving these disciplines in the academic work has broadened the reach to all parties involved in patient care. Dothe Hjort-Jacobsen from Copenhagen, and Jose Maessen from Maastricht have been forerunners in this work.

Using colorectal surgery as their model, the group documented their own patterns of care and outcomes using either traditional care or the "ERAS programme" [3]. It was evident to the group that none of them were doing the ideal perioperative care programme. While Kehlet's group was closest to the ideal protocol, the others were further from it, and all units were doing things differently. They also surveyed specific aspects of perioperative care as practised at that time in five different European countries [4] and showed marked diversity of practice. For example, some patients were fed immediately after surgery whereas others were fasted routinely for 3 days! To try and unify management, the group then developed an evidence-based consensus perioperative care protocol with about twenty different elements [5].

It was decided to have all units move to using the "ideal ERAS" protocol and to study the process of change. This way it was thought that the units could support each other to overcome some of the obstacles that were presented. To support the project a common database was developed to document the results and audit the change. Once the data was reviewed a second revelation was made: it became clear that what was actually performed in the respective clinics was not what the leads had thought, and the units had problems and issues to deal with that they had not known before. It was also obvious that having a protocol was not going to be enough to make the change to an ideal care pathway [6]. Continuous data was the only way to truly know what was ongoing in the perioperative care path.

Using data and working together, progress was made and the units improved their outcomes successively, this time addressing the true issue that needed to be dealt with and not what were the perceived problems. Data was the key to drive change. Dr. Jonatan Hausel at Ersta hospital in Stockholm was the main creator behind initial database. This was the forerunner to the later developed ERAS® Interactive Audit System.

At around that time the Dutch group had the opportunity to work with professional change management experts in the Kwaliteitsinstituut CBO in the Netherlands. Using the protocol and the experiences from the ERAS study group and combining it with modern change management principles they ran a series of three consecutive implementation programmes each lasting 1 year and including 33 hospitals in the Netherlands (i.e. one third of all hospitals nationwide). These were very successful and showed that the principles of the ERAS protocol had a major impact and helped the units to reduce length of hospital stay by 3 days [7]. This occurred as the compliance with the ERAS Study group protocol was raised from around 45 % to 75 %.

From the early start of the group, research was high on the agenda and several papers including randomised trials of individual elements of the protocol (e.g. [8]) and Ph.D. theses were produced from the work of the group. Some of the key papers that came form the group were the reports on better outcomes with improved compliance with the protocol [9], which is actually a test of the guidelines. While testing of guidelines may seem very basic for any Medical Society to do, such testing is actually not performed commonly. For the ERAS Study Group, however, this work gave support to the ideas that the group were developing. In a meta analysis published in 2010 [10] it was shown for the first time, that applying the principles of ERAS actually had major impact

on post-operative complications. An almost 50 % reduction in complications after colorectal surgery was found in that analysis. This was the first time that such evidence had been presented. Previously the focus had been on shortening of length of stay. While the principles had been developed in colorectal surgery there was also a movement exploring these principles in other surgical domains (see below).

The group expanded over time and Robin Kennedy from St Marks joined with his focus on laparoscopic colorectal surgery as an addition to the knowledge base, while Dileep Lobo from Nottingham brought expertise in fluid management, and the Berlin group with Claudia Spies and Arne Feldheiser strengthened the academic input from anaesthesia for the group. During the first 10 years the Study group had generous support from initially Nutricia, the Netherlands, and later from Fresenius-Kabi, Germany with unrestricted grants.

## The ERAS Society

As the ERAS Study Group developed and experience accrued, it became obvious that ERAS was right at the heart of the needs of perioperative care in general. ERAS was leading to better care resulting in faster recovery of the patient/return to autonomy as well as a major reduction in post-operative complications. The information gathered showed that there was a need for a movement to begin to secure that best practice was gathered into guidelines, that the guidelines were being employed in practice and that perioperative care was constantly being improved and updated.

A key element of the work ahead was the need for a multiprofessional, multidisciplinary approach to the improvement of care and its implementation. This basis for improvement was to be employed in every aspect of ERAS; research, education and implementation. ERAS contained concepts that could be transferred to all types of surgery of any magnitude. This was obvious not only to the ERAS Study group but to all developers of perioperative care and thus the interest in ERAS was rising in a multitude of surgical domains. ERAS showed that recovery time was shortened and this reduced hospital stay, partly due to reduced complications but also a reduction in readmissions. This allowed for substantial savings of resources and costs [11]. This is key in the current health care development as the cost for health care has grown more than the Gross Domestic Product per year in many countries in the Western world in recent years, a development that is unsustainable.

## The ERAS Society Organisation

It was decided that when starting the ERAS Society it would be built in stages. Realising that it takes time and effort to build a structure with specific aims, it would be necessary to allow for the foundation elements to be set up over a period of time with stability in the leadership. It was also felt that a structure allowing for strategic planning on a continuous basis would be of benefit in a world where health care is constantly changing.

The core members of the ERAS Study Group formed the Society and the key members of this group formed the Board of the Society with the mission to formulate overall strategic goals. In the initial years the Board would also appoint the Executive Chairman who would be given the task to build the core of the Society by appointing his own committee of executives for approval. An Executive Committee was formed with appointments to manage the treasury, secretarial duties, education and science. In addition a web master, Javier Fabra of the University of Zaragoza Spain, alongside a Web Editor and a Nurses section lead RN Dorthe Hjort Jacobsen were appointed. Apart from this core in the Executive Committee, appointments were made for specific task groups mainly directed to the formation of groups working in different domains in surgical disciplines and anaesthesia. With these pillars the ERAS Society started its existence and in its first 5 year existence has developed to a leading society for the multidisciplinary, multiprofessional approach to perioperative care.

## ERAS in the World

Despite the interest and growth around the ERAS concept, the majority of care worldwide during the development of the ERAS Study Group/Society was still dominated by traditional practice, long recovery times and high complication rates. Modern care was not in use. As stated previously, this became even more evident when major surveys were performed by the group in Northern European countries that were regarded as leading in perioperative care [4]. The ERAS Study Group felt it had some important experiences and insights that would be useful to bring to surgery in general. In the UK the NHS started a national campaign to implement ERAS principles and the group supported this concept with ideas, experiences and knowledge.

But apart from this initiative and the Dutch experience, both supported by the ERAS study group, very little was done on a large scale for the implementation of ERAS.

The ERAS Study Group's basic interest was research and development, but it was also felt that moving the evidence found in research to practice was to be a key component of the mission for the group going forward. At the same time it was obvious that the group needed to establish resources to be able to make a serious effort to move implementation forward. The data base was a good tool for audit and research but could be further developed and could also serve as a tool during implementation if developed further. However, unfortunately at this particular moment in time the group did not have sufficient financial resource to do this and had to seek other means to move the implementation project forward.

## Building Partnerships

Around that time STING, (Stockholm Innovation and Growth) alongside Karolinska Development, two major incubator organisations in Stockholm proposed to the ERAS Study Group to form a start-up company that could manage the IT for the database and develop a system for Interactive Audit for an implementation programme. This company could also serve to administrate the implementation programme for the group. Olle Ljungqvist was asked to start the company that would service the group and develop the IT side of the project. He started the company, Encare AB, in 2009 and for the sake of efficiency also became a Board member of the company to represent the Society. To minimise conflict of interest Olle was asked to report directly to the Chairman of the ERAS Society Board, subsequently the interests of the Society have been represented by other members of the Executive Committee who report directly to the Chairman of the Board. At the same time, the ERAS Study Group decided that it was time to build a much larger academic network and involve many more colleagues. To do so it was decided to start the Enhanced Recovery After Surgery Society for perioperative Care (The ERAS Society). Again the Society received an unrestricted grant from Nutricia to allow the start-up of the Society. The Society start-up was decided in Amsterdam in January 2010 and the formal registration as a not-for-profit multiprofessional, multidisciplinary medical academic society was done in Sweden in May 2010. The ERAS Society has had a formal agreement with Encare AB to service the Society for its implementation programme since the start of the Society.

## The Congress Start Up

Another important task for the Society was to create a dedicated congress. The congress was to be based on the concepts of the ERAS philosophy—everyone involved in the care of the patient should come together. MCI was chosen as the service provider to partner development of the Congress. Like the service-provider relationship with Encare, this relationship has proved to be very successful. The first multiprofessional, multidisciplinary world ERAS congress was held in October 2012 in Cannes, France and attracted just over 200 delegates from 28 countries. The majority of lectures were held in just one lecture hall with all attendees assembled together. Only the late afternoon session was divided for anaesthesia and surgery and split to two lecture halls. The latter was the only major criticism received afterwards and for this reason the entire programme was held in only one lecture hall during the 2nd world congress of ERAS in Valencia, Spain (2014). This time, the attendance was more than doubled and the number of countries represented almost 40 from six continents. An introductory course for ERAS teams was held just before the congress and proved to be very much appreciated. Industrial interest had also grown substantially for the second event. Alongside these international events, the ERAS Society has also supported a number of regional and national events in many countries.

## Research Developments

The core of the ERAS Society lies with the development of perioperative care and research is the foundation for this work. Just about all groups involved at the heart of the Society are involved in research and a lot of the more recent research information on ERAS comes from units working inside the ERAS Society. Whilst the early work was developed in a smaller group, with the expansion of the Society, and the engagement of many more units with the database, the Society is now in the process of developing improved research tools within the database, the ERAS Interactive Audit System. This will allow a much broader participation and larger patient volumes. The ERAS Interactive Audit System is prepared for all kinds of studies. The research structure being developed will have full transparency and users of the system will be welcome to submit proposals for studies using data in the

database. A committee will review any study proposals and novel questions will be given the opportunity to be addressed using the system and published on behalf of the contributors of the data. The idea is to have all study protocols displayed alongside the investigators on the ERAS Society website as well as in Trials.com.

## Education

The ERAS Society has developed a basic course for the introduction of ERAS to hospitals interested in starting ERAS in their own institution. This course will be run in conjunction with the ERAS congress on an annual basis and it is directed to multidisciplinary and multiprofessional teams. In addition, this introductory course has been run at national events in different countries and will continue to do so. The Society is working on a series of videos for education on the website. These will initially be of an introductory type and aimed at different disciplines and professionals. The Nurses section will play a special role in this educational series.

## Guidelines

The ERAS Society has issued guidelines in a variety of surgical domains (www.erassociety.org). In 2012 the first 3 guidelines were published jointly in World Journal of Surgery and Clinical Nutrition: colonic resection, rectal surgery and pancreatic resections. These were followed by Guidelines in Cystectomy in 2013 in Clinical Nutrition, and for Gastric resections in the British Journal of Surgery in 2014. There are a number of groups working on similar guidelines in other surgical procedures in urology, gynaecology, orthopaedics, thoracic surgery, ENT (ear nose and throat) and oesophageal resections. The guidelines are written by leaders in their respective domains, people who have been involved in developing ERAS in their field. Once the guidelines are set, the plan is to have the individual elements and outcomes transferred to the ERAS Interactive Audit System, where they can be tested and validated. This will form the basis for further development of ERAS principles in different areas of surgery.

## ERAS Implementation Programmes

Based on the initial experiences using the ERAS protocol in the Dutch series, the ERAS Society has further developed its implementation programmes. This has been done in collaboration with Qulturum, Jönköping, Sweden, a world-renowned group in quality improvement and change management in health care. The Implementation programmes are taught by ERAS and change management experts and administrated by Encare AB, the implementation service partner for the ERAS Society. Hospitals from Norway, Sweden, England, Switzerland, France and Canada have so far been trained successfully in this system, and there are a number of other countries where these implementation programmes are being set up. Similarly, the number of surgical domains included in these programmes is also expanding from being based on colorectal procedures to now also include cystectomy, nephrectomy, major gynaecology and pancreatic resections.

## Networking

The ERAS Society is networking with a number of national organisations interested in collaboration around Enhanced Recovery. There are already a few national ERAS-like Societies in the world and the ERAS Society has established or is in the process of establishing collaborations with them. At the same time, in countries with no such Society structure in place, the ERAS Society is initiating collaborations based in the Centres of Excellence that are set up. These units have good ERAS structures in place, are trained by the ERAS Society to serve as teachers of ERAS in the ERAS Implementation programmes and they serve as leaders in their own countries or regions in ERAS care. Theses centres will form ERAS Society Chapters, which will be an integral part of the ERAS Society and its network. A similar agreement will be in place with the National Societies as well. For an updated view of the development of the ERAS Society network, please check the web site: www.erassociety.org.

In addition to these arrangements, the Society is open to collaborations with other Medical Societies. The ERAS Society has received the official endorsement from the Swedish Surgical Society already as a sign of collaboration. This manual on ERAS produced in collaboration with SAGES is another clear example of collaboration between Societies.

## Future Developments

It is likely that the demands for ERAS will increase rapidly in the years to come. The economic savings that it brings alongside improved outcomes will be an important factor driving this development. The challenge for the Society is to keep up with the development. In addition, the ambition of the Society is to be able to provide larger and better data to further develop the knowledge and the basis for guidelines. To do this, a large expansion of the users of the database will be important. At the same time, many users on the same system will allow for faster transformation of change, especially if the system is built to facilitate such change. Although the Society started from a small group of people, it has now grown into and is continuing to grow into a large network of experts working side by side in a similar fashion to improve knowledge and ultimately optimal care for and with surgical patients. Even so there will be a need for a broad collaboration among many stakeholders in medicine and surgery together with the patients to tackle the challenge facing us; bringing better care to more people at a lower cost. The ERAS Society will tackle this challenge by developing knowledge, helping colleagues to receive the knowledge, empowering the patient's knowledge and education with the use of shared decision environments and make use of it by continuously updating and changing practice at a faster pace.

**Acknowledgments** The authors are grateful for the comment and review made by the members of the first Board of the ERAS Society: professors Maarten von Meyenfeldt, Arthur Revhaug and Cornelius Dejong. The authors also recognise the instrumental work made by many young colleagues and ERAS coordinators/ERAS nurses contributing to the development of the ERAS Group and later the ERAS Society, not least by their academic work. None mentioned, none forgotten.

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