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Editorial

Oportunidad

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Opportunity

"There are two kinds of opportunity: one which we chance upon, the other which we create."
(An Asian perspective)
Takamori Saigo

"No great man ever complains of want of opportunity."
(An American perspective)
Ralph Waldo Emerson

"Success is being available at the time of opportunity."
(An European perspective)
Disraeli

Fear, anger, frustration, despair, and despondency are not uncommon moods these days amongst cardiothoracic (CT) surgeons worldwide. The periods of joy and happiness related to personal and professional satisfaction have grown less and less. The expansion of general thoracic surgery reached its peak in the mid fifties and subsequently decreased with the introduction and use of new and more effective antituberculous medications. Next, the growth and expansion of cardiac surgery in the fifties with the introduction of the heart/lung machine, and peaking in the last twenty or so years with coronary artery bypass surgery, is slowly but progressively decreasing with better preventive methods, drugs, and emerging sophisticated angioplasty/stent strategies and devices. Having abandoned general thoracic and vascular surgery during the heyday of coronary artery surgery left many cardiac surgeons devoid of skills/experience and referrals in these areas. A growing somber mood is readily witnessed at medical meetings and in the literature. It is interesting to note that this unrest is felt across the entire cardiothoracic global community. A few thoughts regarding voluntary humanitarian efforts may help mollify, or even eradicate some elements of this somber mood.

In the developed countries/economies, decreased job opportunities, reimbursement, salaries, and caseloads are contrasted with increased complexity, patient/society expectations, accountability, increased malpractice suits, and an oversupply of CT surgeons. This is in the setting of sophisticated facilities, resources, ready access, and advanced technology. On the other hand, in the developing countries/emerging economies there exists large caseloads, waiting lists, increased need, fewer qualified CT surgeons, less compensation and resources, uneven access, and limited governmental financial or political support. This represents a comedy in the former and a tragedy in the latter scenarios.

Previous publications have given an appreciation of the global picture of cardiothoracic surgery. Our global population of 6.5 billion lives in 268 countries/dependencies/territories (191 in the United Nations). Over 6000 active cardiothoracic surgeons practice in over 5,000 centers, performing over 2 million cardiac operations and another 3000-4000 non cardiac thoracic procedures. The unbalance of access, manpower, and caseloads has been previously reported by Cox and Unger[1,2] (Fig. 1).

It is clear that the global village appreciates the problems, devastation, and concerns caused by communicable diseases that include tuberculosis, malaria, and HIV/AIDS. The emerging threat of Asian flu has increased this valid concern and emphasis. However, non-communicable diseases/problems far outnumber communicable diseases in terms of mortality and morbidity (DALYs)*[3-7] (Table I). Cardiothoracic surgeons are actively involved in the care of these major diseases worldwide. A huge outpouring of money and resources has been appropriately allocated to address these horrific diseases, yet more will be needed, as these non-communicable diseases increase, especially in the developing countries[4,7] (Fig. 2).

So, as the government (bilateral), multinational (multilateral e.g. United Nations), non-government organiza-

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*DALYs: the sum of life years lost due to premature mortality and years lived with disability adjusted for severity[7].

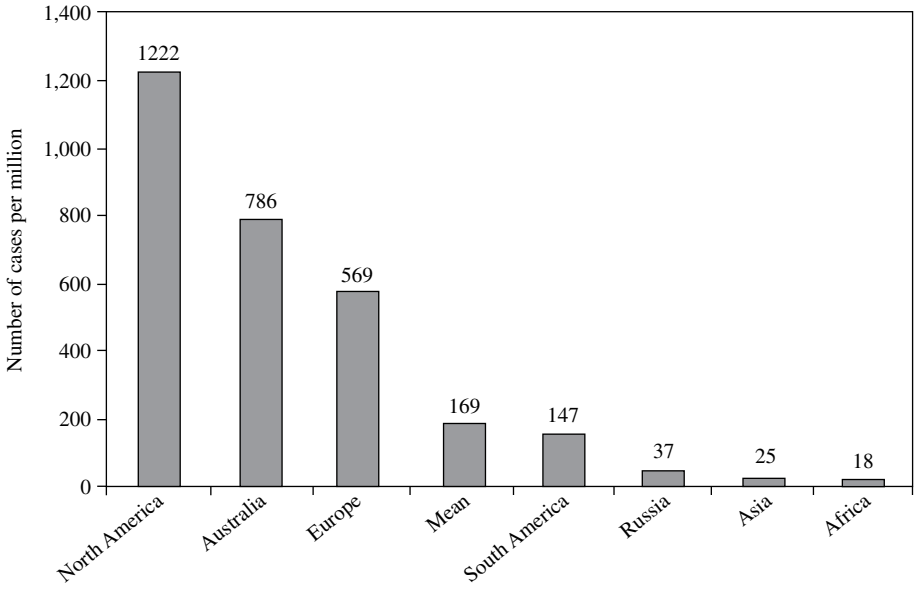

Figure 1. *Discrepancies by region in access to cardiac surgery[1,2].*

tions (NGOs), medical societies, institutions, and competing specialties continue to argue, debate, and compete for direction and control of the best ways to analyze, approach, resolve, and resolve their differences, let us look at some alternate approaches to these problems. This hopefully will result in an array of practical/tactical initiatives that may well serve the global cardiothoracic surgical community, and perhaps alleviate, if not solve, the somber mood and flat affect we are witnessing today amongst our peers.

In 2001, Dr. Jim Cox delivered a landmark presidential address at the AATS meeting that reached out for global initiatives to address the global disparity in cardiothoracic surgery resources, care, and access[1]. This energized the 40-80 worldwide NGOs, and institutions long involved in volunteer/humanitarian efforts. A series of symposia, lectures and conferences have subsequently been held over the past 5 years by the four major cardiothoracic surgical societies American Association for Thoracic Surgery (AATS); Socity of Thoracic Surgeons (STS); European Association for Cardio-thoracic Surgery (EACTS); Asian Society of Cardiovascular Surgery (ASCVS), reporting a number of experiences, initiatives, and proposals, and providing a forum for others to engage and present their own individual experiences and recommendations for future endeavors.

The primary mission of the World Heart Foundation founded by Jim Cox is basically to help increase the quantity and quality of cardiothoracic surgery worldwide[8]. The major programs and initiatives to date include co-sponsoring and supporting three annual outreach conferences, and hosting three symposia on global cardiothoracic surgery at the last three annual AATS meetings. A humanitarian website (www.world-heart.org), readily available directly, or

TABLE I. SELECTED DEATHS BY CAUSE IN WHO REGIONS FOR 2002*†

Total deaths	57,029,000
– Cardiovascular diseases (CAD/CVD)	16,733,000
• Ischemic heart disease (CAD)	7,208,000
• Rheumatic heart disease	327,000
• Congenital heart abnormalities	281,751
– Tuberculosis	1,566,000
– Trachea/bronchus/lung cancers	1,243,000
– Road traffic accidents	1,192,000
– Esophageal cancer	446,000

*World Health Report 2004 (www.who.int/whr/2004/annex/topic/en/annex_2_en.pdf).
†Krug EG. Injury surveillance is key to prevent injuries. Lancet 2004:364:1563-6.
CAD: coronary artery disease; CVD: cerebrovascular disease.

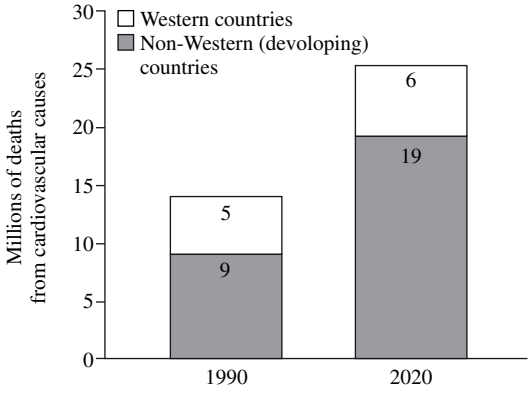

Figure 2. *Cardiovascular deaths (*Deaths from cardiovascular causes, worldwide, in 1990, and estimated for 2020[4,7]).

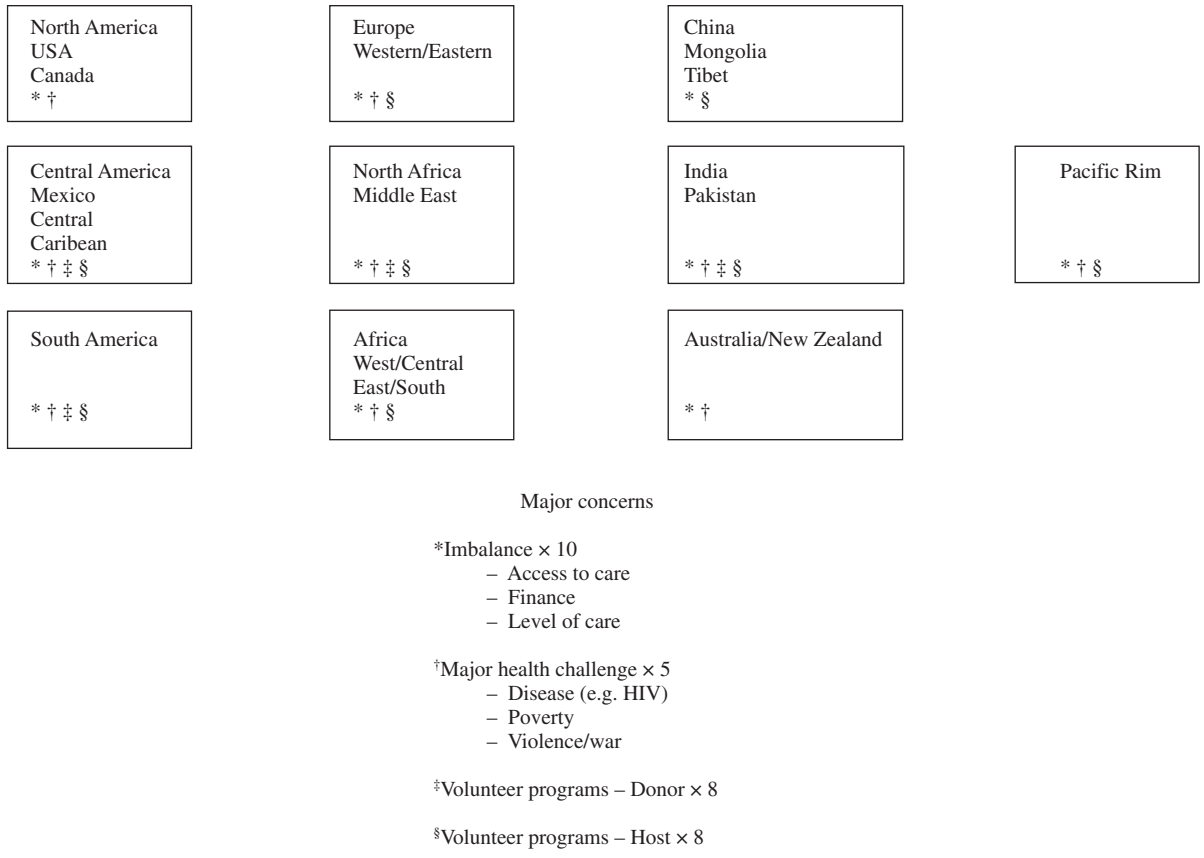

Figure 3. *Global scheme – Ten regions.*

from the CTSNet website, is evolving into a viable portal relating to information and news on global volunteer/humanitarian efforts/opportunities, as well as a vehicle for others to share their views and experiences. Working with a number of NGO affiliates and individuals, strategies for global partnership and support for a variety of projects and initiates are emerging. Examples include cooperation with the NGO Heart to Heart International (www.heart-2-heart.org) to help support new initiatives in Russia. Another recent project to help develop a model CT surgery residency in China is a basic attempt to help increase and improve an already existing and viable training system (www.worldheart.org).

Now, let us consider some other practical/tactical proposals that hopefully may be of some interest. Let us divide the world into 10 regions, separated into three spheres by 8 h time zones (west/central/east) (Fig. 3). It is readily observed that there is imbalance of cardiothoracic services in all regions, but the major challenges are concentrated in five regions. It is proposed that the spheres of influence be controlled and administered by the developed and emerging countries within that sphere, with occasional overlap, based on previous projects/programs[8]. The surgeons and societies will look at and support those programs within their sphere. These programs are of five categories[9] (Fig. 4). Upscale are programs where surgeons/teams go to learn sophisticated or modern approaches to cardiothoracic problems. Lateral programs are like sister affiliations with exchange of a variety of clinical/education/training/research/administrative initiatives. The other three programs are unique to emerging or developing countries. Upgrade programs need exposure to advanced training and techniques, and to be supported financially until the local health care economy catches up. Rejuvenate programs involve re-establishing a program that has ceased, whereas *de novo* is a new program. The donors are those who can help, whereas the hosts are those that can also help, or are in need of help.

As with most CT surgery programs there are four areas of practice (Fig. 5). Clinical initiatives include paying and non-paying patients coming to a donor country for services, unavailable or unaffordable in the host country. It also includes individuals/teams/groups going to host countries, hopefully on a recurring short term basis to perform operations either independently or with the host team. Education/training initiatives occur in many ways and at many levels. The internet/web, especially the

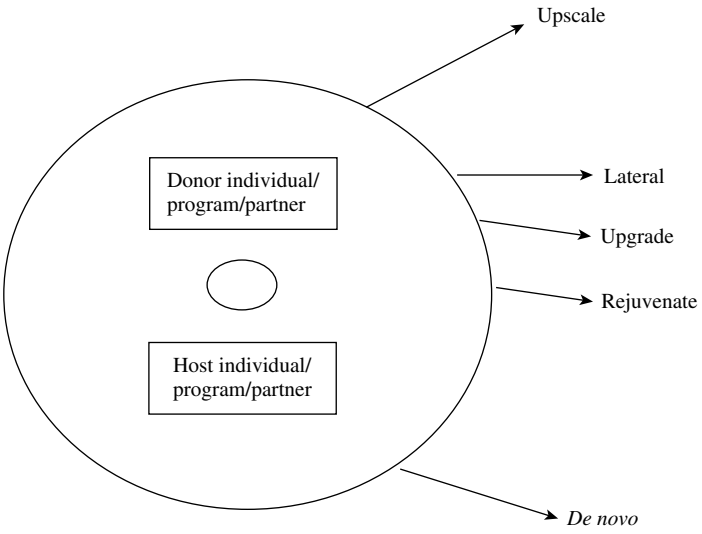

Figure 4. *Categories of cardiac surgery centers/programs/units[9].*

CTSNet, is the premier source of cardiothoracic related information/knowledge. In countries without library support, journals/texts are hard to find or purchase. Meetings continue to be a valuable asset to learn, interact with new/old colleagues, and receive updated information re-equipment/supplies – product. Visionary efforts of the EACTS like the Bergamo school pioneered by Lucio Parenzan and Ottavio Alfieri (European School for Cardio-Thoracic Surgery) and the Multi Media Manual of CT Surgery (http://mmcts.ctsnetjournals.org/) developed by Marko Turina have been invaluable to many CT surgeons, especially in developing countries, as well as short term observational opportunities, and accredited or non-accredited residency/fellowship training in developed programs. Yet, the most valuable and most effective modality remains on site, sustained training of not only surgeons, but the entire staff of the host team. This last effort is the most important and gratifying, since it helps provide increased local support, and satisfaction, decreases despondency and frustration, adds hope and enthusiasm, as well as curtailing emigration and "poaching" of qualified health care workers.

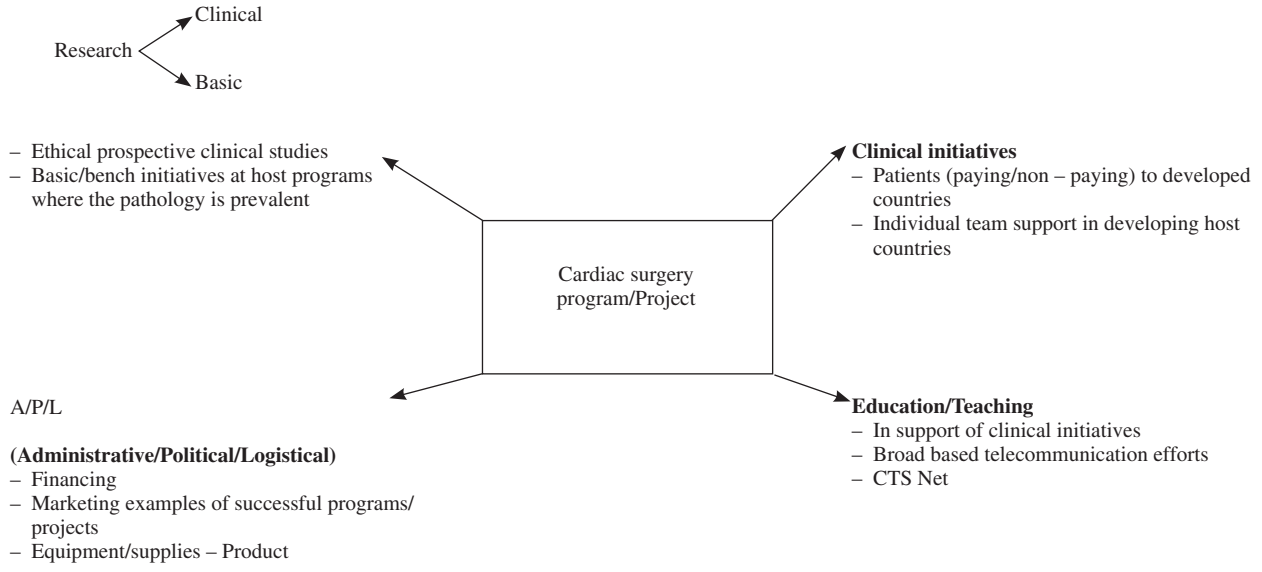

Figure 5. *Cardiothoracic program structure.*

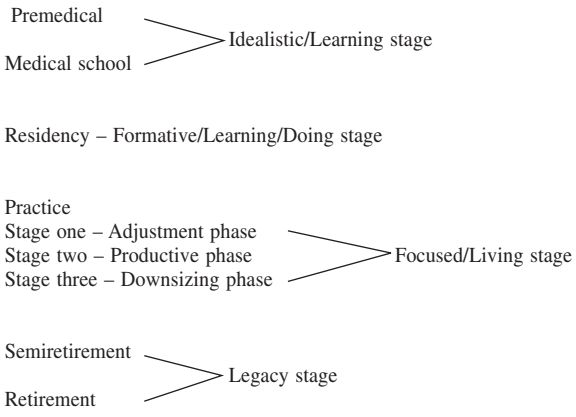

Figure 6. *Surgical career.*

TABLE II. QUESTIONS/REQUESTS*

- Cardiothoracic surgeons seeking jobs or voluntary opportunities both at home/abroad
- Cardiothoracic residents/trainees (both home/abroad) seeking further education/training opportunities be they:
  - meeting, observation sites, or
  - accredited non-accredited fellowships
- Patient/family/friend/acquaintance/group/NGO seeking help for care/surgery
- NGOs seeking information, team recruitment, or free-donated product
- Individuals/groups/corporate with available product/services to donate
- Host (foreign) surgeons, teams, centers, countries seeking help/support for their programs

*Most frequent E-mail questions/request over a two year period (2004-2006) to the author.

Research, be it bench, bush, or bedside, is an important part of the overall effort. Helping with clinical case reports, technical advances, retrospective reviews, prospective studies, and basic reviews should be fostered and encouraged by the major journals, with a sustained effort to assist/help with English as a second language challenge. Again, present and future research opportunities may be more practical and cost-effective in those countries where the relevant pathology is more widespread. Sir Magdi Yacoub delivered a provocative overview of research in developing countries at The Global Thoracic Surgery Symposium at the 83rd annual AATS meeting in Boston, MA in 2003 (www.aats/o/index.html). He outlined valid reasons for research/development (R/D) in developing countries. This included developing local expertise, especially with talented individuals already in place and providing them an opportunity. Local R/D gives emphasis to recognizing local problems. It generates answers locally for specific problems, enhances dignity, and allows participation and contributions to global knowledge. He stressed the issue of funding, and offered some practical solutions, including targeting neglected, but important diseases, cooperation between NGOs and multilateral/bilateral organizations/countries, as well as "twinning" programs between institutions. An example is the endomyocardial fibrosis research joint project conducted in Maputo, Mozambique between Chain of Hope and the Harefield Research Foundation, and Imperial College.

Administrative areas need but to look at existing models and projects as examples on where and how to get started. Alain Carpentier's effort in Ho Chi Minh City is a model to study, as well as Aldo Castaneda's program in Guatemala City, Guatemala, Sir Magdi Yacoub's work with Chain of Hope (www.chainofhope.org) and Richard Jonas's monumental effort with Project Hope at Shanghai Children's Medical Center in Shanghai, China. Within each of the three major time zones sphere are long standing host programs to look at: e.g. Children's Heart Link (www.childrensheartlink.org), International Children's Heart Foundation in the USA; Dr. Kalangos's "Hearts for All" association in Geneva, Switzerland[10] (www.cptg.ch/en/start.htm); Dr. K.M. Cherian's group in Chennai, India; and Hans Borst's work in Russia[11]. At the society level the EACTS has taken a bold step in the establishment of an international committee to explore further opportunities and projects particularly in Eastern Europe and the former African colonies (www.eacts.org/committee/eacts/800). An important area that needs further development is an international database that initially collates the global number of centers, surgeons, and caseloads. Subsequent voluntary results and outcomes will follow[12]. This has been seen recently in a voluntary report of outcomes in Brazil[13].

Finally, at what levels should one get involved? CT surgery residents should get involved. Exposure to problems like TB, rheumatic fever, and congenital heart disease exist in emerging economies. Going and performing operations in a controlled, mentored fashion is both practical and beneficial to all involved. A recent example is in Uganda[14]. An international exchange of USA surgical residents from the Department of Surgery of the University of California at San Francisco (UCSF) have a six week elective offering at Makerere University in Kampala, Uganda. This model should be studied closely as a future model for CT surgery programs in other countries. Practicing CT surgeons are divided into three groups (Fig. 6). Getting involved in volunteer/humanitarian work is dependent on the individuals own needs/wants/values/expectations. Yet, it may well be that 10-20% of future paying job opportunities may be in the emerging economies. There is precedent for this. Not so long ago, CT surgeons ventured to several of the Middle East countries for short term lucrative employment. In the future, with medical tourism going global,

there may well be future jobs in foreign countries for the adventurous type.

The role of semi-retired/retired CT surgeons is a topic for expanded discussion. There are a variety of opportunities to consider: voluntary/humanitarian work, doing surgery, assisting surgery, or observing and giving valuable advice/recommendations. Mentoring is probably the biggest and most effective role for this valuable and effective group of individuals. Floyd Loop has discussed this extremely well[15].

In summary, there are questions (Table II), and there are opportunities. Gardner[16] presented a blunt, yet hopeful overview of the situation in the USA, with regards to training and job opportunities. He emphasized, as have others that bold and courageous decisions must be made at the training level. In the meantime, those who are in the midst of their practice, be it beginning, mid, or final phases, are looking for some hope and energizing forces. It is somewhat tragic that cardiothoracic surgery has to suffer the perils of supply/demand, financial restructuring, outsourcing, and imbalance (Fig. 3). Certainly, in the volunteer/humanitarian area the rewards are both valuable and invaluable to both the surgeon and those they serve[9]. Aristotle once said philosophy does not thrive on an empty stomach, and an old Italian proverb that without money the saints do not perform miracles. So while we are deliberating how to reach our personal and professional career goals, consider the world of volunteer/humanitarian work. It may help generate the fuel and energy needed to meet the challenges of opportunity. Yet we realize that today's needs and wants are real, and warrant attention, especially job and family satisfaction and security. A Chinese proverb that talks about the distant lake not satisfying the immediate thirst still has relevance today.

"Wherever there is danger, there lurks opportunity; whenever there is opportunity, there lurks danger. The two are inseparable. They go together."
(A global perspective)
Earl Nightingale

El miedo, enfado, frustración y desesperación son frecuentes en la comunidad de cirujanos cardiotorácicos y vasculares y la alegría y satisfacción personal y profesional han disminuido. La expansión inicial de la cirugía torácica y cardíaca ha disminuido tras el advenimiento de los antituberculosos por una parte, y por otra, por la acción de métodos de prevención, fármacos, sofisticados sistemas de dilatación y otros aparatos. Muchos cirujanos que abandonaron la cirugía torácica y la cirugía vascular durante la explosión de la cirugía coronaria han quedado sin experiencia en muchas áreas de conocimiento. Es interesante observar el sentimiento de inquietud en la comunidad cardiotorácica. Algunas consideraciones acerca de esfuerzos voluntarios humanitarios podrían ayudar a suavizar o eliminar algunos elementos de este sombrío panorama.

En las economías desarrolladas existe un contraste entre la disminución de ofertas de trabajo, salarios y cargas de trabajo en relación con el aumento de la complejidad, demandas del paciente o sociales, auditorías, mala práctica y exceso de cirujanos. Esto en el contexto de instalaciones sofisticadas y tecnología avanzada. Por otra parte, en los países en vías de desarrollo hay importantes cargas de trabajo, listas de espera, aumento de necesidades, menor número de profesionales, menos compensaciones y recursos y apoyo gubernamental y financiero limitado. Comedia en unos y tragedia en otros escenarios.

La población del mundo, de 6.500 millones, vive en 268 países y territorios (191 en la ONU). Hay unos 6.000 cirujanos cardiotorácicos en unos 5.000 centros, que realizan unos 2 millones de intervenciones anuales y otros 3-4 millones de procedimientos no cardíacos intratorácicos. Las desigualdades en infraestructura y acceso han sido publicadas por Cox y Unger[1,2] (Fig. 1).

Parece evidente que existe preocupación acerca de los problemas y la devastación causados por enfermedades transmisibles como la malaria, SIDA, tuberculosis, siendo un ejemplo reciente muy claro el de la fiebre aviar. Sin embargo, las enfermedades no transmisibles son muy superiores a las transmisibles en cuanto a morbimortalidad (DALY)[3-7] (Tabla I). Los cirujanos cardiotorácicos están involucrados en el cuidado de estas enfermedades. A pesar de importantes presupuestos dedicados a estos temas, se necesitarán cantidades muy superiores, en especial en países en vías de desarrollo[4,7] (Fig. 2).

Mientras continúa el debate entre organizaciones gubernamentales, multinacionales (ONU) y no gubernamentales, sociedades médicas, instituciones y especialidades en competencia acerca de la dirección y control de las mejores formas de analizar y resolver esas diferencias, analizaremos abordajes alternativos. Éstos pueden servir a la comunidad cardiotorácica para aliviar estas perspectivas sombrías de las que hablamos.

En 2001, el Dr. Jim Cox dedicó su conferencia presidencial de la AATS a las iniciativas globales para limitar la disparidad global en los recursos, acceso y cuidado en la cirugía cardiotorácica[1], potenciando a un total de 40-80 ONG de todo el mundo involucradas en esfuerzos humanitarios. Se han realizado encuentros y conferencias en estos años organizados por las cuatro

sociedades principales (AATS, STS, EACTS, ASCVS), comunicando unas experiencias, iniciativas y propuestas, proporcionando un foro de expresión para individuos y organizaciones a la búsqueda de recomendaciones para el futuro.

La misión principal de la *World Heart Foundation* (WHF) fundada por James Cox es ayudar a aumentar la calidad y cantidad de cirugía cardiotorácica en todo el mundo[8]. Los principales programas hasta el momento incluyen el patrocinio y apoyo de tres conferencias anuales y la organización de tres simposios sobre la cirugía cardiotorácica global en las tres últimas reuniones de la AATS. Una página de internet humanitaria (www.world-heart.org) a la que se puede acceder directamente o a través de CTSNet ha evolucionado hacia un portal viable de información y noticias en relación con esfuerzos humanitarios y como vehículo para compartir experiencias. El trabajo de afiliados y miembros de ONG hace que aumenten las estrategias de cooperación globales. Algunos ejemplos incluyen la cooperación con la ONG *Heart to Heart International* (www.heart-2-heart.org) para iniciativas en Rusia. Otro proyecto reciente es la ayuda al desarrollo de un modelo de residencia en China, con vistas a mejorar un sistema existente (www.world-heart.org).

Consideremos ahora otras propuestas que podrían ser de interés. Dividamos el mundo en 10 regiones, separadas en tres esferas por ocho husos horarios (oeste/central/este) (Fig. 3). Se aprecia un desequilibrio entre regiones, pero los retos principales se concentran en cinco regiones. Se propone que las esferas de influencia puedan llegar a controlarse y administrarse por los países desarrollados y en emergencia de esas esferas con solapamiento ocasional en función de proyectos previos[8]. Los cirujanos y sociedades de esas esferas apoyarían esos programas, que serían de cinco categorías[9] (Fig. 4). Los programas de desarrollo serían aquellos en los que los cirujanos o equipos aprenderían técnicas o abordajes sofisticados. Los programas laterales serían los de intercambio de iniciativas clínicas/educación/investigación/administrativas. Los otros tres programas serían únicos para los países en vías de desarrollo. Los programas de mejora necesitan entrenamiento avanzado y apoyo económico hasta que los sistemas de salud locales los incorporen. Los programas de rejuvenecimiento incluyen el restablecimiento de programas que hayan cesado. Los donantes son los que podrían ayudar y los huéspedes los que podrían ayudar de forma parcial o están necesitados de ayuda.

Como en todos los programas cardiotorácicos hay cuatro áreas de práctica (Fig. 5). Las iniciativas clínicas incluyen pacientes que acuden a países donantes para servicios no disponibles en el de origen. También incluyen individuos o grupos que se desplazan a países receptores para realizar intervenciones de forma aislada o con los equipos locales. Las iniciativas de educación pueden desarrollarse de varias maneras. Internet, y en especial CTSNet, es la fuente principal de información. En países en desarrollo, las revistas y textos son difíciles de adquirir. Los congresos continúan siendo una forma de interacción. Esfuerzos visionarios como la escuela de Bérgamo de EACTS, organizada por Lucio Parenzan y Ottavio Alfieri, y el Manual Multimedia de Cirugía Cardiotorácica, desarrollado por Marko Turina (www.mmcts.ctsnetjournals.org), han sido de gran valor para muchos cirujanos, en especial en países en desarrollo, así como para muy diversos programas de entrenamiento. La modalidad más valiosa sigue estando en el lugar de destino, el entrenamiento no sólo de cirujanos sino del equipo local completo, siendo el más gratificante ya que proporciona más apoyo a los locales, más satisfacción y disminuye la dependencia y frustración, añade esperanza y entusiasmo y limita la posible emigración de profesionales cualificados.

La investigación es una parte importante. La ayuda con casos clínicos, avances técnicos, revisiones retrospectivas, estudios prospectivos debería ser apoyada por las revistas principales, ayudando en el lenguaje inglés escrito. Las oportunidades de investigación presente y futura serán más prácticas en los países en los que hay enfermedad relevante. Sir Magdi Yacoub presentó una revisión provocativa acerca de la investigación en países en desarrollo en el *Global Thoracic Surgery Symposium* en la reunión 83 de la AATS en Boston en 2003 (www.aats/o/index.html), delineando las líneas de investigación en esos países. Estas razones incluían el desarrollo de conocimiento local con individuos talentosos, proporcionándoles una oportunidad. El desarrollo local hace hincapié en el reconocimiento de los problemas locales. Genera respuestas para problemas específicos, aumenta la dignidad y permite la participación y contribuciones al conocimiento general. Yacoub hizo hincapié en la financiación y ofreció algunas soluciones, incluyendo el ataque a enfermedades olvidadas pero importantes, la colaboración entre ONG y organizaciones y países de forma bilateral o multilateral y la asociación de programas entre instituciones. Un ejemplo es el proyecto conjunto de investigación en fibrosis endomiocárdica que se lleva a cabo en Maputo (Mozambique), entre la *Chain of Hope,* la *Harefield Research Foundation* y el *Imperial College.*

Se necesitan áreas administrativas, pero estudiando modelos existentes. El proyecto de Alain Carpentier en Ho Chi Minh es un modelo a estudiar, así como los de Aldo Castaneda en Guatemala, el trabajo de Sir Magdi Yacoub con la *Chain of Hope* (www.chainofhope.org) o el esfuerzo monumental de Richard Jonas con el *Project*

Hope en el *Shanghai Children's Medical Center* en Shanghai. En las tres zonas principales que hemos mencionado hay programas de larga evolución de los que hay que aprender, p. ej. *Children's Heart Link* (www.childrensheartlink.org), *International Children's Heart Foundation* en EE.UU., la asociación de Afksendiyos Kalangos en Ginebra *Hearts for All*[10] (www.cptg.ch/en/start.htm), el grupo del Dr. K.M. Cherian en Chennai (India) y el trabajo iniciado por Hans Borst en Rusia[11]. A nivel societario, EACTS ha dado un muy importante paso adelante mediante el establecimiento del *International Cooperation Committee* para explorar oportunidades futuras, y particularmente en Europa oriental y las antiguas colonias africanas (www.eacts.org/committee/eacts/800). Un área importante que necesita desarrollo futuro es una base de datos internacional que recoja números generales de centros, cirujanos y casos. Datos sobre resultados llegarán de forma voluntaria en el futuro[12]. Esto puede comprobarse en un informe voluntario de actividades en Brasil[13].

Finalmente, en qué niveles debe centrarse uno. Los residentes deberían involucrarse. La tuberculosis, fiebre reumática y cardiopatías congénitas existen. La realización de intervenciones con supervisión es práctica y beneficiosa. Un ejemplo reciente está en Uganda[14]. Un intercambio de residentes de EE.UU. del Departamento de Cirugía de la Universidad de California, en San Francisco (UCSF), ofrece una estancia de 6 semanas electivas en la Universidad Makerere, en Kampala. Este modelo podría estudiarse con cuidado como modelo futuro para programas en otros países. Los cirujanos practicantes se dividirían en tres grupos (Fig. 6). La participación en proyectos humanitarios depende de los propios valores y expectativas de los individuos. Podría ocurrir que el 10-20% de oportunidades de trabajo asalariado se presentasen en las economías en fase de emergencia, y ya hay precedentes. Tiempo atrás grupos de cirujanos se desplazaron a Oriente Medio para empleos lucrativos de corta duración. En el futuro, con la transformación del turismo médico en un fenómeno global, podrían presentarse oportunidades de trabajo de este tipo.

El papel de cirujanos retirados o semirretirados es un tema de discusión. Hay ciertas oportunidades para considerar: trabajo humanitario, realización de intervenciones, asistencia en cirugía o como consultor. La enseñanza es quizás el papel más importante y eficaz de este grupo tan importante de individuos. Floyd Loop lo ha discutido en detalle[15].

En resumen, hay preguntas (Tabla II) y oportunidades. Timothy Gardner[16] presentó una revisión de la situación en EE.UU. relativa a los empleos y oportunidades. Las decisiones importantes deberían tomarse durante el entrenamiento. Los que están a mitad o al final de sus carreras buscan nuevas energías. Es trágico que la cirugía cardiotorácica deba sufrir los peligros de la oferta y la demanda, de la reestructuración financiera, de la externalización y de los desequilibrios (Fig. 3). En la era de los esfuerzos humanitarios, las recompensas son valiosas para los cirujanos y para los que se sirve[9]. Aristóteles dijo que la filosofía no sirve a un estómago vacío, y un viejo proverbio italiano dice que sin dinero los santos no hacen milagros. Así pues, mientras deliberamos acerca de nuestros objetivos profesionales y personales, consideremos el mundo del trabajo humanitario. Las necesidades del momento son reales y requieren atención. Un proverbio chino dice que hablar acerca del lago distante no satisface la sed inmediata, y ello todavía tiene relevancia hoy.

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