

# WGN

2007 / Issue 2

# Vol. 12

# WORLD GASTROENTEROLOGY NEWS



*Official Newsletter of the World Gastroenterology Organisation*

**Just released - WGO's new CRC Guideline**

**Eamonn Quigley discusses the Future of Gastroenterology**

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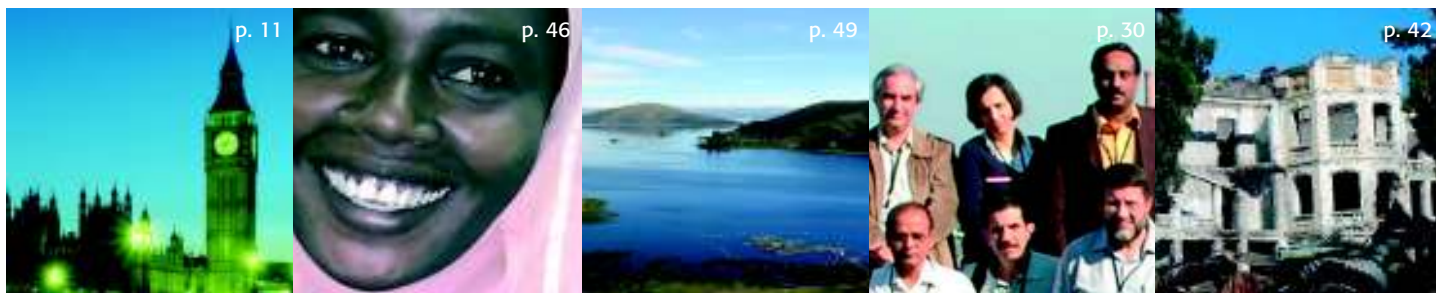
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## Message from the Editor

J. Baillie

It was my privilege and pleasure recently to accept the editorial "baton" of *World Gastroenterology News (WGN)* from my good friend and mentor, Dr. Jerome (Jerry) Waye. His are big shoes to fill, without a doubt. Jerry Waye has been a wonderful *WGN* editor. I join with the leadership of World Gastroenterology Organisation (WGO) and the office staff at *WGN* in thanking him most sincerely for his service and wishing him continued success in his many educational activities.

As I am a relative newcomer to WGO, much of its landscape is uncharted territory for me. I am therefore especially grateful to Ms. Molly Donohue (Managing Editor), Ms. Bridget Barbieri (WGO Executive Director) and Mr. Justus Krabshuis (WGO's librarian) for taking me by the hand through my first issue as editor of *WGN*. If the result is less than my illustrious predecessor led you to expect, the blame is mine alone, but I ask you to bear with me as I get my editorial bearings. I will be relying heavily on others, including our outstanding editorial board, to keep *WGN* fresh and relevant to its diverse audience.

For many of our international authors, *WGN* offers an opportunity to write for an English-language gastroenterology journal. While I cannot promise to publish every unsolicited article we receive, every submission will be carefully considered and feedback provided. As the author E.L. Doctorow famously opined, "Writing is a socially acceptable form of schizophrenia"! Writing is hard work, especially in someone else's language. If we use your work, it will almost certainly be edited. We have tight limits on article length, so manuscripts often need to be shortened. The good news is that the editing process, with attention to style, punctuation, and grammar, almost always improves a manuscript. We will do our best to make your precious work readable and informative. For ease of editing, electronic submissions (e.g., in Microsoft Word files) are especially welcome; please send them to our editorial office ([info@worldgastroenterology.org](mailto:info@worldgastroenterology.org)).

We take pride in *WGN* being the vehicle for material not easily found elsewhere in the gastroenterology literature. Professor René Lambert and Silvia Franceschi have contributed an outstanding review on the global problem of hepatocellular carcinoma (hepatoma). Dr. Justus Krabs-

huis introduces us to the exciting concept of "cascades" in the development of management algorithms for gastroenterologic disorders. Professor Sidney Winawer, a world expert—possibly *the* world expert—on the subject of colon cancer screening shares with us the latest WGO guideline. The Weinbeck Foundation offers us a fascinating view of endoscopy practice in Afghanistan, and Dr. Hiam Mohammed writes about the evolving role of women in gastroenterology in Sudan. We are pleased to be able to present a thoughtful and provocative reflection on "Gastroenterology: Current Status, Future Prospects" by WGO President, Professor Eamonn Quigley (Cork).

We hope you will enjoy these and other articles and news items in this issue of *WGN*. Feedback is always welcome at *WGN*. We look forward to hearing from you! ■

**J. Baillie, MD**

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## WGO President's column

E.M.M. Quigley



This will be the busiest year ever in the history of the World Gastroenterology Organisation (WGO)—featuring as it does three Train-the-Trainer meetings, intensive courses at our primary training centers in Rabat, Cairo, La Paz, and Bangkok, as well as ongoing training activities in Soweto and Karachi and at the advanced centers in Santiago, Rome, and La Plata. This year has also seen the first symposium, transmitted live to Egypt and South Africa and sponsored by our cancer division, the International Digestive Cancer Alliance (IDCA), on the important topic of digestive cancer in Africa; and also a highly successful World Digestive Health Day (WDHD), where so many of you joined with us to highlight national, regional, and global issues in hepatitis. Meanwhile, the Guidelines Committee is proceeding to release new guidelines on hepatitis B and colorectal cancer and is now firmly embedding the “cascades” concept in all of its new and updated guidelines. In other committees, substantial progress has been made in defining standards for training in gastroenterology and in facilitating gastroenterology research throughout the world.

For me, one of the highlights of the year was the Extraordinary General Assembly held during Digestive Disease Week in Washington, D.C.—where, despite so many competing events, representatives from many national societies found the time to interact with us in a lively and very worthwhile event. Very recently, it was my great privi-

Extraordinary General Assembly, May 2007.



lege to attend the fourth course held at the WGO Training Center in Cairo and to witness at first hand how Professor Hussein Abdel Hamid, assisted by Professor Ibrahim Mustafa, have been able to galvanize the clinical resources and educational expertise of Egyptian gastroenterology in support of this excellent center. When you hear from the trainees from across Africa and the Middle East how valuable these sessions are to them and how the Cairo center is uniquely accessible and pertinent to them, you are reminded of what WGO is all about and why these endeavors must continue and prosper. We need all of your support to help us ensure that we can attract financial support from diverse sources to enable our global network in gastroenterology education and training to continue to develop and to serve all. We welcome your ideas, your support, and your commitment to this project. The blunt fact is that these programs cost money and WGO has to raise substantial sums.

This “call to arms” in support of WGO and its programs comes as we prepare to celebrate our 50th anniversary next year, in 2008. Many special events and activities are already in the planning stage; if you have ideas on how your society could join in this unique opportunity to spotlight your own gastroenterology society as well as global issues, we would love to hear from you. To mark this year, as well as to ensure a healthy financial future for WGO, we are delighted to announce that we are in the advanced stages of creating a foundation whose sole purpose will be to solicit and raise funds for WGO programs. It is also appropriate in our anniversary year that WDHD will focus on a topic of relevance to the entire world, yet one which has not necessarily engaged the gastroenterologist to the extent that its importance demands: nutrition.

WGO is your organization—we work with you and for you, we greatly value all of your contributions and participation, and we look forward to further mutual progress in the years ahead. ■

E.M.M. Quigley, MD  
 President, World Gastroenterology Organisation  
 E-mail: e.quigley@ucc.ie

## Treasurer's report, 2006

D. LaBrecque



The year 2006 was another exciting and successful one for the WGO, as highlighted elsewhere in this issue by Professor Quigley. The year 2007 is also shaping up to be particularly noteworthy, as the Council approved the organization's 100th, 101st, and 102nd members (the West African Society of Gastroenterology, Association of West Indian Gastroenterologists, and Yemen Gastroenterological Association) during the annual meeting at Digestive Disease Week (DDW) in May. This year:

- We will move from one to three Train the Trainers (TTT) programs.
- We have opened a new Advanced Training Center in La Plata, Argentina.
- We have expanded the educational efforts of the International Digestive Cancer Alliance (IDCA) with the landmark First African–Middle East Conference on Digestive Oncology.
- We have furthered the educational efforts of World Digestive Health Day with publication of a newsletter and vade mecum of key references on viral hepatitis.
- We will publish two new Global Guidelines.
- And we have laid the groundwork for continued addition of new Training Centers, IDCA courses, Train the Trainers courses and new and revised guidelines in 2008.

Unfortunately, the demands of our membership for these activities, indeed our very success, only add to the expense of running our rapidly expanding organization.

As in 2005, the past year proved to be a difficult one financially. Income from Concordat members (the biomedical industry) was sharply reduced, as was industry support for *World Gastroenterology News (WGN)*. Overall income was \$727,748.60. This included members' dues of \$63,480.00; Concordat contributions (biomedical industry) of \$209,875.00; additional sponsor income \$43,932.00; interest and dividends \$147,149.00; investment earnings \$103,892.60; miscellaneous income of \$10,000; and *WGN*-related income of \$149,420.00.

Expenses totaled \$1,428,839.00, an increase of a little over \$400,000.00 over 2005, although we were able to reduce the projected expenses by approximately

\$230,000.00 during the course of the year through a number of cost-cutting measures. Expenses consisted of: programs (TTT, training centers) and divisions (IDCA), \$387,106.07; promotion and publications, \$385,224.00; committee meetings and meetings related to preparation for the 2009 World Congress with the United European Gastroenterology Federation in London, \$265,922.57; OMED support, \$148,326.97; support for the African and Middle East Association of Gastroenterology (AMAGE), \$4,652.14; administrative support and services, \$237,607.80. Included in the administrative support and services expenses was a major new expense of \$94,009.24 for fundraising consultation (see below). In addition, the bottom line was hurt when *WGN*, due to the decrease in biomedical industry support, became for the first time a money-losing publication, with a deficit of \$123,044.92.

The bottom line is that for the second straight year we found ourselves in deficit spending, with a total deficit of \$701,090.94. As reviewed in my report last year, this was expected, and the Executive Committee has approved steps to aggressively attack this problem. These were also reviewed and approved by the Finance Committee during DDW. First, we will continue to look for ways to pare any unnecessary expenses, holding Executive Committee meetings in conjunction with other meetings whenever possible, in order to reduce travel and hotel expenses. The Executive Committee will also conduct as much business as possible by conference call. At the Council meeting during DDW, the Council also approved a modest dues increase from \$2 to \$3 per member, our first dues increase in many years.

It is also clear that we cannot rely on our traditional sources of support. Concordat membership fell to an all-time low in 2006, with only six members (Altana, Astra-Zeneca, Fujinon, Novartis, Olympus, and Pentax). Thus far in 2007 – reflecting, in part, changes in the pharmaceutical industry – only Novartis and Olympus have signed up. Our other major source of funds in the past has been the World Congresses. The books were recently closed on WCOG 2005 and, although it is widely agreed that WCOG 2005 was by far our best and most successful congress educationally and scientifically, it was also our worst in



almost two decades with regard to income. The final profit to WGO—after payment of the agreed shares to the Canadian Association of Gastroenterology (the local organizers), OMED, and the Asociación Interamericana de Gastroenterología (AIGE)—totals only \$604,000.00, which will be apportioned pro rata over the next 3 years to help cover our annual expenses.

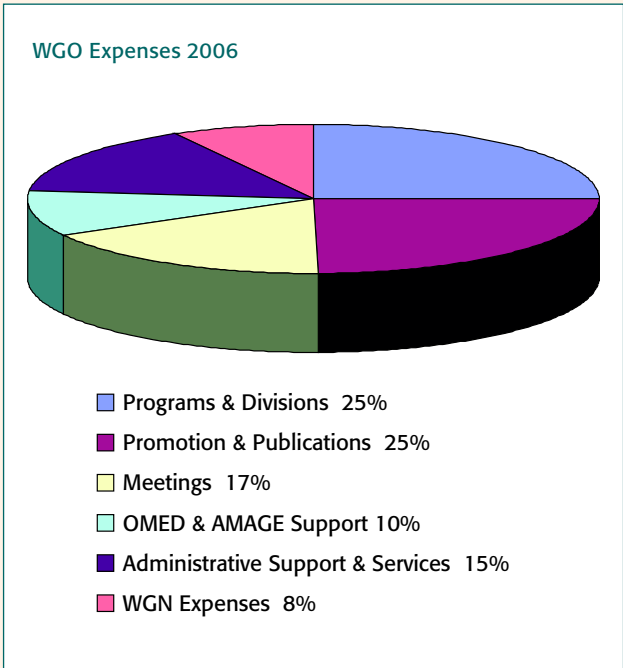
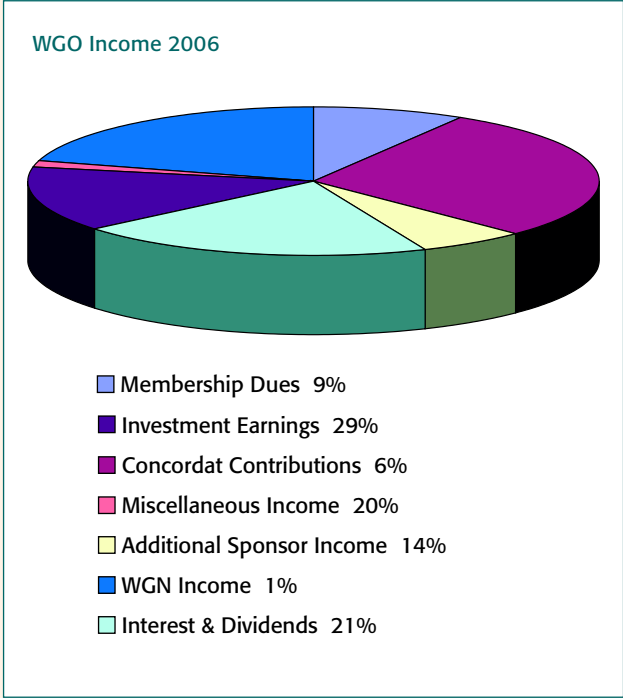
Faced with the need to identify new sources of income, we have more than doubled our fundraising budget for 2007, hiring Michael Roberts and providing him with staff and resources at our Executive Secretariat at Medconnect, to head up an expanded fundraising program that will include ongoing solicitation of industry, philanthropic and individual support, as well as developing a special campaign to commemorate and celebrate our 50th anniversary in 2008.

We are also gratified that Bernard Levin, MD has accepted our invitation to chair a new WGO Foundation, which will focus on fundraising. Additional board members will be announced on our web site as the board structure is formalized.

The next several years promise to be exciting ones as we continue to extend our mission of education and training in cooperation with our over 100 member organizations. The years will also be extremely challenging, as we are faced with growing financial requirements in order to meet these needs. The Executive Committee and the Foundation Board will look to all of our membership for support and ideas as we attempt to respond to the challenges ahead. ■

**D. LaBrecque, MD**

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# GASTRO 2009

UEGW/WCOG, London



**21 - 25 November 2009**

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# GASTRO 2009

## UEGW/WCOG, London



**21 - 25 November 2009**  
**[www.gastro2009.org](http://www.gastro2009.org)**

Gastro 2009 UEGW/WCOG, London - a new meeting for the new millennium: The World Gastroenterology Organisation (WGO), the United European Gastroenterology Federation (UEGF) and together with the British Society of Gastroenterology (BSG) and the World Organisation of Digestive Endoscopy (OMED), are jointly organising a landmark meeting in London in November 2009. The meeting will take place at the ExCel centre in the east of London which is close to the rapidly expanding regeneration zone of the city currently being prepared for the 2012 Olympics. The riverside location will be an extremely attractive place to spend 4 or 5 days but it is in extremely close proximity to all the attractions of central London; theatres, museums and some of the world's best restaurants! Please put the dates in your diary now: 21-25 November 2009.

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- a world beating array of new science in gastroenterology and hepatology
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- interdisciplinary symposia on new approaches to diagnosis and treatment
- a major emphasis on innovative, technical advances in the non-invasive management of gastrointestinal and hepatic disorders
- an overriding theme will be the importance of addressing both research and clinical practice issues at a global level.
- we will also be commissioning a number of working team reports
- we will be offering a full two day post-graduate programme incorporating gastroenterology, hepatology, endoscopy, surgery, imaging and other diagnostic modalities. Participants will purchase a "passport" to move around the various options that will be running in parallel to allow them to 'pick 'n mix' according to their needs and interests.

**Watch [www.gastro2009.org](http://www.gastro2009.org) for new information in the coming months**

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#### **Selected Working Party Proposals GASTRO 2009, London**

- HCV genotypes 4, 5, 6: The neglected genotypes; Syrian Society of Gastroenterology
- Gastrointestinal neuromuscular pathology-classification and guidelines on histopathological reporting; British Society of Gastroenterology
- The development of a histopathological classification system for gall bladder cancer and preancer; British Society of Gastroenterology
- Worldwide guidelines for quality assurance and credentialing in digestive endoscopy; World Organisation of Digestive Endoscopy
- Post-infectious irritable bowel syndrome; European Society of Neurogastroenterology and Motility
- Improving the recognition and detection of oesophageal neoplasia: the barrett's oesophagus related neoplasia (BORN) project; IWGCO
- The positioning of biological therapies in inflammatory bowel disease (includes when to start, in which patients, how long, room for flexible therapy); European Crohn's and Colitis Organization
- Guidelines for evaluation of new screening tests for colorectal cancer; World Organisation of Digestive Endoscopy/International Digestive Cancer Alliance

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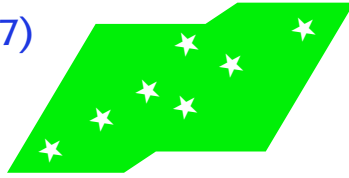
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## UEGW back in Paris

(27–31 October 2007)



The last time that the United European Gastroenterology Week (UEGW, [www.uegw.org](http://www.uegw.org)) was held in Paris, it was at the *Centre Nationale des Industries et Techniques* (CNIT) near La Défense, on the northern edge of the city. It is a sign of the times—and of the growth in gastroenterology—that the congress has now moved to Le Palais des Congrès, just off the *périphérique* (the Paris ring road), which is a more central location for the meeting. It is an easy place to get to by metro, bus, and even by car if you don't mind the daunting challenge of the huge roundabout in front of the conference center.

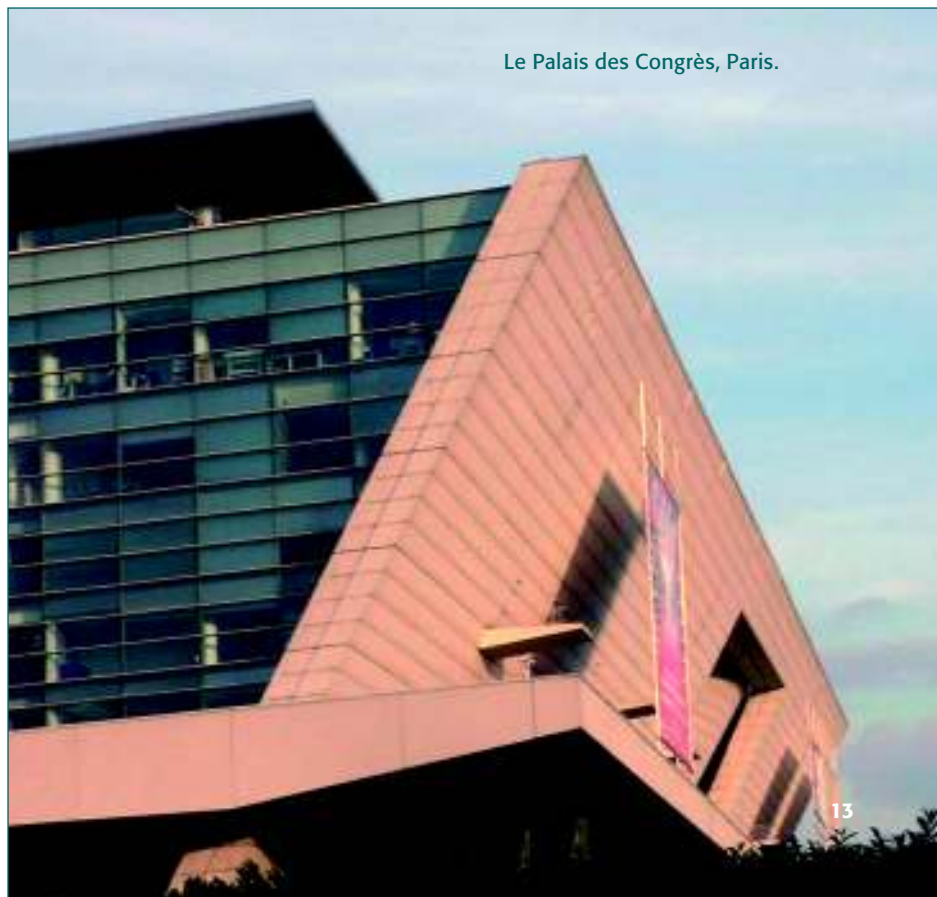
UEGW is continuing to grow. The number of abstracts submitted is up 18% on last year (now 2868), which is more than the average increase in other more active therapy areas. The Scientific Committee, led by Prof. Michael Farthing, has moved away from the traditional areas of the so-called “seven sisters” (the founding societies) to focus on four major groups of subjects—liver; upper gastrointestinal disorders; lower gastrointestinal disorders; and surgery, endoscopy, and the pancreas. Each of these groups has a leader, which has allowed the committee to focus on the core scientific interests of the gastroenterology community and move away from the individual interests of the societies. The result is a program that will provide the right balance between each of the subgroups, but also between original and non-original science. The original science comes from a rigidly peer-reviewed selection from the many abstracts submitted.

The “Clinics in Gastroenterology and Hepatology,” which was introduced last year in an attempt to increase the opportunity for clinical case-based discussion, will be continued, but with some tweaking by grouping cases together into themes such as inflammatory bowel disease, interventional endoscopy, and neurogastroenterology.

Basic science is also a focus. UEGW is encouraging more basic science in its program, and is awarding 100 travel scholarships to basic scientists.

Finally, the postgraduate courses are becoming a much more important component of the whole UEGW program. They now span a full two days (Saturday and Sunday) before the main meeting, and uniquely they offer participants the opportunity to move across courses so that they can have access to the topics they are interested in. The three established topics are endoscopy, liver, and combined gastroenterology.

The rest of this brief article is devoted to 2008 and beyond. This may sound odd, but the reason is that it is often not realized or understood that the committees for most meetings, including UEGW, start work on their programs more than a year ahead of the meeting. So if you have strong feelings about something you would like to see changed or included, do get in touch with the organizers early. They like feedback, and they can only act on it if they have sufficient time to discuss and act on the merits of any suggestions. You never know—maybe next year this page will have more new ideas coming from sources other than the scientific committee. ■



Le Palais des Congrès, Paris.



## Gastroenterology—current status, future prospects

E.M.M. Quigley

### Twenty-five years of progress

Gastroenterology is a relatively new specialty among the various disciplines in medicine, but it has witnessed tremendous progress over the past 25 years. During this relatively short space of time, peptic ulcer disease, formerly the focus of much research and clinical effort, has been conquered—firstly, through the development of effective acid-suppressive agents, the histamine H<sub>2</sub>-receptor antagonists and proton-pump inhibitors; and, secondly, and most unexpectedly, by the discovery of *Helicobacter pylori* and of its pivotal role in the causation of this common disorder. Over this same time scale, liver transplantation has become a standard component of the management of chronic liver disease, and effective therapies have been developed for the management of viral hepatitis, in its many forms. The latter development reflects the effective transfer of knowledge gleaned from modern molecular research to the bedside. Advances in this field, almost inconceivable 25 years ago, have also given us diagnosis based on polymerase chain reaction (PCR) and the application of biological therapies, such as infliximab, to inflammatory bowel diseases (IBD). It may surprise many to be reminded that the laparoscopy revolution, which has subsumed many of the standard surgical approaches to the digestive tract, has also occurred in this short time frame.

Meanwhile, endoscopy has progressed apace: fiberoptic technology is now passé, capsule endoscopy has become commonplace, and natural orifice transluminal endoscopic surgery (NOTES) is on the horizon. In imaging, computed tomography (CT) has become faster, more accurate, and “routine,” and magnetic resonance imaging (MRI) and positron-emission tomography (PET) and other modalities are continuing to progress in definition, application, and availability.

### Whither endoscopy?

How have these and other changes impacted on the practice of the gastroenterologist and on his or her approach to the patient with digestive problems? Certain trends are already evident that provide valuable clues to what may lie ahead. The primacy of diagnostic endoscopy is already in question. Will virtual colonoscopy eventually

replace colonoscopy as the primary modality for effective colon cancer screening? It seems certain that this will be the case sooner rather than later; when this happens, yet another diagnostic role for endoscopy will fade, but the therapeutic potential of this and allied technologies will increase further. Just as the use of “diagnostic” endoscopic retrograde cholangiopancreatography (ERCP) has waned as it has been replaced by magnetic resonance cholangiography and an ever-greater role for the therapeutic biliary endoscopist, the colonoscopist of the future will be a skilled therapist who will seek out and destroy the polyps and other lesions identified by his or her imaging colleague.

As the prevalence of both peptic ulcer disease and gastric cancer decline, the benefits of gastroscopy for evaluating dyspepsia are increasingly being questioned; simultaneously, endoscopic approaches to gastroesophageal reflux disease (GERD), upper gastrointestinal hemorrhage, tumor ablation, and the provision of nutrition continue to evolve.

The endoscopist of the future will therefore play a major role in the therapy of digestive disorders. In this new, highly technical and demanding endoscopic environment, will the general gastroenterologist be able to survive, or will the full-time endoscopist or endoscopic surgeon become the norm? These are challenging issues for those who will be training the gastroenterologists of the future. A balance needs to be found between the desire to maintain the link between the patient carer and the therapist, on the one hand, and the need to ensure that complex procedures are only performed by those who have and sustain the appropriate skills, on the other.

### Cognitive function returns

While one could be forgiven in the present climate for caricaturing the gastroenterologist as an automaton whose sole function is to perform screening colonoscopy, it is evident that this perception will soon become redundant. As mentioned above, advances in imaging and molecular diagnostics will soon challenge the primacy of the scope as the optimal screening tool. More importantly, the briefest glance at the changes in demographics and disease prevalence that are sweeping the West will convince one

that the gastroenterologist must soon return to his or her office and devote ever more time to listening to patients. Patients with so-called “functional” gastrointestinal disorders, where endoscopy has little or no role, now populate the gastroenterologist’s waiting room and, worldwide, IBD—a disorder whose care requires much attention to symptoms and clinical findings, as well as a considerable knowledge of modern therapeutics—continues to increase in prevalence.

The obesity pandemic has major implications for the future of gastroenterology: its association with GERD, colon cancer, nonalcoholic fatty liver disease (NAFLD), and nonalcoholic steatohepatitis (NASH) suggests some of the issues that will increasingly have to be dealt with in the future. The gastroenterologist will play a greater role in the evaluation and management of this problem. Across the West, populations are aging, and as they do, the spectrum of disorders dealt with is changing. More importantly, both the manner in which the disorders present and the way in which they are resolved are also changing. Optimal attention to the digestive and nutritional problems of the elderly will be more time-consuming and will call upon interpersonal skills, diagnostic communication, and other skills that have received scant attention in training curricula in recent years. Putting it simply, the gastroenterologists of the future will have to rediscover the office and bedside skills that their forebears depended upon and will have to simultaneously acquire new languages: molecular diagnostics and therapeutics, digital imaging, and a thorough understanding of the brain–gut interface.

### **Can the “general gastroenterologist” survive?**

The subspecialty faces the threat of fragmentation on many fronts. The potential for the rise of the dedicated endoscopist has already been mentioned; will the hepatologist, the motility specialist, the IBD-ist, and the gastroenterological oncologist soon follow? Will any gastroenterologist of the future be competent in—or even practice—general internal medicine? While such sub-specialization will, undoubtedly, thrive in certain quaternary referral centers, I firmly believe that the general gastroenterologist will not only survive but thrive. This sunny prognosis is

dependent, however, on a rigorous survival course, one that has not been embarked on in the past but is essential for the future. This “course” must begin with a thorough review of the current status of the field; old assumptions have to be disposed of and “business as usual” must be regarded as an unavailable option.

The role of the gastroenterologist in the care of the aged, the obese, and the psychologically challenged must be carefully considered and our training programs appropriately adjusted or, more likely, radically revised. The nettle of who does what in endoscopy must be firmly grasped, and a consensus has to be reached on the menu of procedures that are essential to the practice of gastroenterology; simultaneously, those procedures that are deemed to require further training and which should therefore be the province of the few should be delineated and criteria for their performance outlined.

### **The academic gastroenterologist—from dinosaur to dodo?**

In the United States, several factors have conspired to render the academic clinician who practices gastroenterology not only a threatened species but, in many instances, place him on the verge of extinction. On the one hand, changes (inevitably in a downward direction) in reimbursement and competition from the private sector are driving academic medical centers to demand ever more clinical productivity from their gastroenterologists. On the other hand, universities expect research productivity and academic success at a time when external funding sources are drying up and teaching and scholarly activity are viewed as distractions from, or impediments to, clinical productivity. This seemingly irreconcilable conflict has resulted in what can only be described as an unholy and most fragile truce, in which research is for the most part concentrated in a small number of large academic institutions that can afford to “carry” individuals who can devote most, if not all, of their time to research and thus compete favorably for federal grant income, while most “academics” in other centers are, in reality, full-time clinicians whose only mark of differentiation from their former fellowship classmates in private practice is that they earn less.

If this situation is not soon resolved, it will result in a complete schism between the clinician and the scientist and the extinction of an individual who has never been more sorely needed: the academic clinician—whether he or she is a committed educator, a clinical investigator, or a translational researcher. This, to my mind, is the single greatest threat to the future of gastroenterology as we know it; if there are no academic clinicians, then who will teach and train our students, residents, and fellows, and who will translate research advances in the laboratory into clinical success? We quite simply cannot afford not to rectify this; government agencies, professional bodies, academic centers, and representatives from all aspects of the subspecialty must engage in an active debate, the only outcome of which can be a solution that guarantees the future of the academic clinician. This will not be easy, but it must happen.

### Conclusions

The past quarter century has been a wonderful era in gastroenterology; the efforts of our predecessors, teachers, and mentors in shaping and shepherding the discipline have borne bountiful fruit, manifest in the tremendous ad-

vances enjoyed in understanding disease pathophysiology, as well as in the host of new diagnostic and therapeutics modalities that can now be used to relieve digestive disorders. We as gastroenterologists can be accused, however, of becoming deaf to the clamor of change that surrounds and threatens to envelop us; it is time to sit up and, with all of our senses on high alert, recognize this new environment. We must work hard to identify and meet the challenges that face us and which could, depending on our response, either threaten our very existence or move gastroenterology to an even higher level, to the good of the subspecialty and, more importantly, to the benefit of the patients that we care for. ■

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# Colorectal cancer screening: practice guideline (short version)

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## 1 Introduction and definitions

Colorectal cancer (CRC) is a worldwide problem, with an annual incidence of approximately 1 million cases and an annual mortality of more than 500,000. The absolute number of cases will increase over the next two decades as a result of the aging and expansion of populations in both the developed and developing countries.

CRC is the second most common cause of cancer mortality among men and women. Most CRCs arise from sporadic adenomas, and a few from genetic polyposis syndromes or inflammatory bowel disease (IBD). The term “polyp” refers to a discrete mass that protrudes into the intestinal lumen. The reported prevalence of adenomatous polyps, on the basis of screening colonoscopy data, is in the range of 18–36%.

The risk for CRC varies from country to country and even within countries. The risk also varies among individual people in relation to diet, lifestyle, and hereditary factors.

The most common neoplastic finding during colorectal cancer screening is the adenoma. After removal of an adenoma, patients need to be placed in a follow-up surveillance program, as do patients with identified and treated cancer.

These guidelines are directed to screening: the testing of asymptomatic men and women who are likely to have adenomatous polyps or cancer. Screening needs to be applied within the framework of a program that includes: primary prevention (diet, lifestyle), timely diagnostic work-up with colonoscopy (where available and consistent with the cascade) in those screened positive, and timely treatment (polypectomy, surgery).

Colorectal cancer screening is particularly challenging, as reflected in current low screening rates in most countries where there is a high risk for colorectal cancer. Colorectal cancer screening is complex, as there are multiple options, it requires considerable patient effort (fecal occult blood

test slides, colonoscopy preparation, etc.), and it requires sedation and a health-care partner for some tests (colonoscopy). For a screening program to be successful, multiple events have to occur, beginning with awareness and recommendation from the primary-care physician, patient acceptance, financial coverage, risk stratification, screening test, timely diagnosis, timely treatment, and appropriate follow-up. If any one of these steps is faulty or is not of high quality, the screening will fail.

This guideline takes account of resources by introducing a cascade.

*A cascade is a hierarchical set of diagnostic or therapeutic techniques for the same disease or diagnosis, ranked by resources available.*

The CRC screening cascade consists of a set of recommendations. The recommendations apply to different resource levels, beginning with 1 (highest resources) and ending with 6 (minimal resources available).

Cascade-based medicine must always take account of the gold standard for treatment and diagnosis. In addition to that, however, it must also identify other ways of achieving the best possible outcome, as it takes account of available resources.

## 2 Epidemiology of colorectal cancer

### 2.1 The burden of colorectal cancer

In the Globocan 2002 database of the International Agency for Research on Cancer (IARC), the worldwide burden of colorectal cancer is estimated as 550,000 incident new cases and 278,000 deaths for men, and 473,000 incident new cases and 255,000 deaths for women. In 2002, colorectal cancer comprised 9.4% of the global cancer burden in both sexes and was most frequent in North America, Australia, New Zealand, and parts of Europe. This has

led to colorectal cancer being considered as a disease of the Western lifestyle.

**2.2 Temporal trends in incidence and mortality**

Age-standardized rates (ASR) of mortality from colorectal cancer in men and women in Western countries remained stable throughout the 20th century, and may now be starting to decline; on the other hand, rapid changes are being experienced in countries previously considered to be at low risk.

In Europe, age-standardized mortality rates have increased in eastern and southern Europe, while leveling off in most northern and central European countries. In recent years, mortality trends have tended to be systematically more favorable for females than males.

In the USA, trends in the incidence rates of colorectal cancer in the Surveillance Epidemiology and End Results (SEER) registries suggest that between 1973 and 1989, the age-standardized incidence of colon cancer in men rose by 11% in whites and 39% in blacks, whereas the incidence of rectal cancer fell by 5% in whites and rose by 27% in blacks. In women, colon cancer incidence declined by 3% in whites and increased by 26% in blacks, whereas rectal cancer rates fell by 7% and 10%, respectively. Since 1990, the age-standardized incidence rates of colon cancer have been declining. The practice of prevention by polypectomy may have played a role in this.

In Japan, the age-standardized mortality rates for colorectal cancer were low in the mid-20th century and increased approximately threefold in both sexes between the time periods of 1955–74 and 1975–84.

With the world’s population aging, a considerable increase in the number of cases is to be expected.

**2.3 Familial and genetic factors in colorectal cancer**

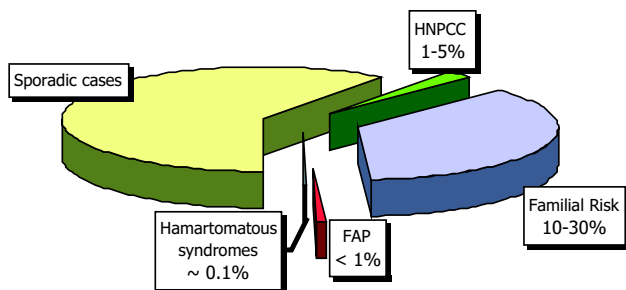


Fig. 1 Familial risk factors and colorectal cancer

**Average risk.** The risk of CRC increases with age and family history. Colorectal cancer is rare before the age of 50, but after that threshold, the incidence of CRC increases dramatically. Those with no family history are considered to be at average risk.

**Nonsyndromic familial risk.** CRC is perhaps the most familial of all human cancers. The estimated proportion of colorectal cancers that is attributable to heritable causes varies from 5% to 30%. Inherited syndromes with known genetic defects account only for 1–5% of all CRCs. Between 10% and 30% of CRC patients have a familial history of CRC but do not belong to a known inherited syndrome. Familial clustering of cases is common and appears to confer increased risk. First-degree relatives of persons with CRC have a twofold to threefold increase in the risk of CRC in comparison with control or population incidence. Moreover, the risk increases with the number of relatives with CRC, the closer the relatives are to the patient, and with the age of CRC in family members. Individuals with a personal history of colorectal cancer are also at increased risk for subsequent development of cancer. Thus, the risk of CRC is increased in persons with a family history of non-

Table 1 Familial risk of colorectal neoplasia

Familial setting	RR	95% CI
One first-degree relative with CRC	2.25	2.00 to 2.53
< 45 y	3.87	2.40 to 6.22
45–59 y	2.25	1.85 to 2.72
> 59 y	1.82	1.47 to 2.25
Two or more first-degree relatives with CRC	4.25	3.01 to 6.02
Only two first-degree relatives	3.76	2.56 to 5.51
One second- or third-degree relative with CRC	1.50	
Two second-degree relatives with CRC	2.30	
One first-degree relative with an adenoma < 60 y	1.99	1.55 to 2.55

RR, relative risk; CI, confidence intervals.

Adapted from: Burt RW (Gastroenterol Clin North Am 1996;25:793–803) and Johns LE, Houlston RS (Am J Gastroenterol 2001;96:2992–3003).

syndromic CRC and in those with a history of adenomas in close relatives under the age of 60 (Table 1).

**Syndromic familial risk.** Familial adenomatous polyposis (FAP). FAP is autosomal-dominant. One-third of new cases are caused by a de novo mutation.

Hereditary nonpolyposis colorectal cancer (HNPCC) or Lynch syndrome. HNPCC with autosomal-dominant transmission is the most common form of syndromic familial colorectal cancer. A consensus group has established a list

Table 2 Amsterdam II criteria for hereditary nonpolyposis colorectal cancer (HNPCC)

- There are at least three relatives with colorectal cancer or other HNPCC-related cancers (endometrium, stomach, renal, ureter, biliary, small intestine), one of whom is a first-degree relative of the other two
- At least two successive generations are affected
- Colorectal cancer has been detected before the age of 50 in one of the relatives

of criteria (the Amsterdam II criteria) that suggest the presence of the HNPCC phenotype (Table 2).

Other less common familial syndromes are:

- Juvenile polyposis (JP)
- Peutz–Jeghers syndrome (PJ)
- Cowden syndrome

### 3 Screening tests, 1: stool tests

Colorectal cancers may shed blood and other tissue components that can be detected in the feces long before the development of clinical symptoms. This has led to a search for stool analyses that can allow early detection of cancer and screening for colorectal cancer in people without symptoms. The most common method has been the detection of occult blood in feces.

**Stool tests.** The guaiac smear test is the most common test for detecting fecal occult blood. The guaiac test reacts to the peroxidase activity of heme, but this makes the test liable to reaction with other peroxidases in the feces, such as those from certain fruits, vegetables, and red meat. Dietary restrictions are therefore necessary to avoid false-positive results.

There are several problems with the fecal occult blood test (FOBT) as a screening test for colorectal cancer. The sensitivity of the test is only 50–60% for one-time use, but may be as high as 90% when it is used every 1–2 years over a long period of time (programmatically sensitivity). Although the sensitivity can be increased using rehydration, this leads to variability in the reaction that invalidates the method as a screening procedure. Low sensitivity leads to a high number of false-negative results and the effect of false reassurance. The majority of cases identified by fecal occult blood testing are false-positive, and these patients will be subjected to unnecessary further investigations, usually colonoscopy. Another problem with FOBT screening is that its effectiveness requires compliance with testing over many years.

Fecal occult blood testing using the guaiac smear is currently being replaced in many countries by fecal immunochemical tests (FIT or IFOBT), which detect hemoglobin using sensitive and specific techniques. Such tests obviate the need for dietary restrictions. The user-friendliness of the tests varies; some are more user-friendly and have very good compliance. The optimum cut-off point for sensitivity in the immunochemical tests remain to be validated.

### 4 Screening tests, 2: endoscopy and CT colonography

**Flexible sigmoidoscopy** allows direct examination of the inner surface of the large bowel up to a distance of about

60 cm from the anal margin. This technique can detect colorectal polyps and cancers, and is also used to remove polyps or take tissue samples for histological examination. The advantages of flexible sigmoidoscopy are that the procedure can be performed by physician and nonphysician examiners; it is less time-consuming than colonoscopy; bowel preparation is also easier and quicker; the morbidity is negligible in examinations that do not require polypectomy; and no sedation is needed. However, its obvious disadvantage is that examination of the left colon alone misses right-sided lesions. While the specificity of the findings with the endoscopic procedure is very high (98–100%, few false-positives), the sensitivity is low for the entire colon and ranges from 35% to 70% due to the significant number of right-sided adenomas that occur in the absence of distal tumors and are therefore missed on flexible sigmoidoscopy.

Sigmoidoscopy is being used for screening in asymptomatic individuals for early cancer detection and prevention. Case–control studies have clearly shown that screening sigmoidoscopy decreases colon cancer mortality by 60–70% in the area examined. Major complications occur in one per 10,000 cases.

**Colonoscopy** allows the detection and removal of polyps and biopsy of cancer throughout the colon. Both the specificity and sensitivity of colonoscopy for detecting polyps and cancer are high (at least 95% for large polyps; see below). The miss rate for polyps, on the basis of studies of back-to-back colonoscopies, is 15–25% for adenomas smaller than 5 mm in diameter and 0–6% for adenomas of 10 mm or more.

There are no studies that have examined the impact of colonoscopy on incidence or mortality. Ideally, a screening procedure should be a simple and inexpensive test that could easily be applied to the entire at-risk population. While these criteria are not fulfilled by colonoscopy, this approach is the “gold standard,” and patients with a positive result on any other screening test (FOBT, sigmoidoscopy, computed-tomographic colonography) should be referred subsequently for colonoscopy if it is available. In some countries in which resources are available, direct colonoscopy has become the most prevalent procedure for CRC screening. Major complications occur in 1–2 per 1000 cases.

**Double-contrast barium enema.** Although double-contrast barium enema (DCBE) allows evaluation of the entire colon, its sensitivity and specificity are inferior to those of colonoscopy and computed-tomographic colonography. Even for large polyps and cancers, DCBE offers substantially lower sensitivity (48%) than colonoscopy, and DCBE is more likely than colonoscopy to yield false-positives (artifacts diagnosed as polyps). Patients with an abnormal barium enema need a subsequent colonoscopy. However, DCBE is widely available, and the fact that it may detect up to 50% of large polyps would support the

use of this procedure in patients in the absence of other resources.

**Computed-tomographic colonography (CTC).** Thin-section helical computed-tomographic scanning of the abdomen and pelvis, followed by digital processing and interpretation of the images, can display two-dimensional and three-dimensional reconstructions of the colonic lumen ("virtual colonoscopy"). The procedure requires air insufflation for colonic distension to maximal tolerance (approximately 2 L of room air or carbon dioxide) and cathartic bowel preparation. Ingestion of oral contrast can "tag" fecal material and fluid, which can then be digitally subtracted from the image on the computer.

A meta-analysis of studies using CTC for the detection of colorectal polyps and cancer showed high sensitivity (93%) and high specificity (97%) levels with this technique for polyps 10 mm or larger. However, for large and medium-sized polyps combined (6 mm or larger), the average sensitivity decreased to 86%, with a specificity of 86%. When polyps of all sizes were included, the studies were too heterogeneous in sensitivity (range 45–97%) and specificity (range 26–97%). While the sensitivity of CTC for cancer and large polyps is satisfactory, detection of polyps in the 6–9-mm size range is not satisfactory. An important drawback of CTC for screening patients at increased risk is that flat lesions are missed.

A major disadvantage of CTC for its use as a screening procedure is the repeated exposure of patients to ionizing radiation. Recently, multidetector or multislice CT technology has shortened the scan time and reduced the radiation dose, while maintaining high spatial resolution. Magnetic resonance colonography is being studied in Europe for this reason.

In addition, the issue of when to refer patients for colonoscopy is unresolved on the basis of the polyp size visualized on CTC. This has an enormous impact on the cost of the screening. Another disadvantage is that the examination requires a complete bowel preparation. If patients need colonoscopy, they have to undergo a second bowel preparation unless facilities exist to do both on the same day. Finally, extraintestinal findings can lead to additional radiologic and surgical evaluation and increased costs. Major complications are rare.

## 5 Cascades—tooling up for screening

### 5.1 Introduction

Different screening options for average-risk and higher-risk men and women aged 50 and over are reviewed here. The options take account of the availability of colonoscopy, flexible sigmoidoscopy, FOBT, and barium enema. When screening resources are severely limited, the most realistic option would be fecal occult blood testing every year or two for average-risk men and women, starting at the age of 50.

The type of slide test used depends on screening resources and the dietary habits of the population.

Lower test positivity with Hemoccult II will tax colonoscopy resources less than more sensitive slide tests such as Hemoccult SENSE. Immunochemical tests are optimal, in that they require only two rather than three days of testing and require no dietary restrictions, but they cost more, which is a consideration when financial resources are low.

The diagnostic work-up can be with either colonoscopy, if available, or barium enema if colonoscopy is not readily available. Thus, the decision to identify separately people who are at increased risk depends on the colonoscopy resources available. If these are very limited, then people who are at increased risk can be screened along with average-risk people.

### 5.2 The cascade

The CRC screening cascade consists of a set of recommendations. The recommendations apply to different resource levels, beginning with 1 (highest resources) and ending with 6 (minimal resources available).

**Resource level 1.** The recommendations below are appropriate for countries with a relatively high level of resources (financial, professional, facilities) where the colorectal cancer incidence and mortality is high (IARC data) and is an important concern relative to other public health priorities.

*Recommendations for screening people at average risk.* Colonoscopy for average-risk men and women, starting at the age of 50 and every 10 years in the absence of factors that would place them at increased risk.

*Recommendations for screening people at increased risk.*

- — People with a family history of colorectal cancer or adenomatous polyps.
  - People with a first-degree relative (parent, sibling, or child) with colon cancer or adenomatous polyps diagnosed under the age of 60, or with two first-degree relatives diagnosed with colorectal cancer at any age, should be advised to have screening colonoscopy starting at the age of 40, or 10 years younger than the earliest diagnosis in their family, whichever comes first, and repeated every 5 years.
  - People with a first-degree relative with a colon cancer or adenomatous polyp diagnosed when he or she was under the age of 60, or with two second-degree relatives with colorectal cancer, should be advised to be screened as average-risk persons, but starting at the age of 40.
  - People with one second-degree relative (grandparent, aunt, or uncle) or third-degree relative (great-grandparent or cousin) with colorectal cancer should be advised to be screened as average-risk persons.
- Familial adenomatous polyposis (FAP). People who have a genetic diagnosis of familial adenomatous pol-

yposi, or who are at risk of having FAP but in whom genetic testing has not been performed or is not feasible, should have an annual sigmoidoscopy, beginning at age 10–12, to determine whether they are expressing the genetic abnormality. Genetic testing should be considered in patients with FAP who have relatives at risk. Genetic counseling should guide genetic testing and consideration of colostomy.

- Hereditary nonpolyposis colorectal cancer (HNPCC). People with a genetic or clinical diagnosis of hereditary nonpolyposis colorectal cancer, or who are at increased risk for HNPCC, should have colonoscopy every 1–2 years, starting at the age of 20–25 or 10 years earlier than the youngest age of colon cancer diagnosis in the family, whichever comes first. Genetic testing for HNPCC should be offered to first-degree relatives of persons with a known inherited mismatch repair (MMR) gene mutation. It should also be offered when the family mutation is not already known, but one of the first three of the modified Bethesda criteria is met.
- People with a history of inflammatory bowel disease or a history of adenomatous polyps or colorectal cancer are candidates for follow-up surveillance, rather than screening. Guidelines have been published for the surveillance of these individuals.

**Resource level 2.** The recommendations are the same as for level 1, but they apply when colonoscopy resources are more limited.

*Recommendations for screening people at average risk.* Colonoscopy for average-risk men and women at age 50 once in a lifetime, in the absence of factors that would place them at increased risk.

*Recommendations for screening people at increased risk.* Recommendations for screening people who are at increased risk are the same as for cascade 1.

**Resource level 3.** The recommendations are the same as for resource level 1, but they apply when the colonoscopy resources are more limited and flexible sigmoidoscopy resources are available.

*Recommendations for screening people at average risk.* Flexible sigmoidoscopy for average-risk men and women, starting at the age of 50, every 5 years, in the absence of factors that would place them at increased risk. Diagnostic work-up with colonoscopy for positive sigmoidoscopy.

*Recommendations for screening people at increased risk.* Recommendations for screening people at increased risk are the same as for resource level 1.

**Resource level 4.** The recommendations are the same as for level 3, but they apply when the flexible sigmoidoscopy and colonoscopy resources are more limited.

*Recommendations for screening people at average risk.* Flexible sigmoidoscopy for average-risk men and women once in a lifetime at the age of 50, in the absence

of factors that would place them at increased risk. Diagnostic colonoscopy work-up for positive sigmoidoscopy or advanced neoplasia, depending on the available colonoscopy resources.

*Recommendations for screening people at increased risk.* Recommendations for screening people at increased risk are the same as for resource level 1.

**Resource level 5.** The recommendations are the same as for resource level 4, but they apply when diagnostic colonoscopy is severely limited.

*Recommendations for screening people at average risk.* Flexible sigmoidoscopy for average-risk men and women once in a lifetime at the age of 50. Diagnostic colonoscopy only if advanced neoplasia is detected.

*Recommendations for screening people at increased risk.* The recommendations for screening people at increased risk depend on the colonoscopic resources available.

**Resource level 6.** The recommendations are the same as for resource level 1, but they apply when colonoscopy and flexible sigmoidoscopy resources are severely limited.

*Recommendations for screening people at average risk.* Fecal blood testing every year for average-risk men and women starting at the age of 50, in the absence of factors that would place them at increased risk. The type of test used depends on colonoscopy resources and the dietary habits of the population. Diagnostic work-up can be either with colonoscopy, if available, or barium enema if colonoscopy is not readily available.

*Recommendations for screening people at increased risk.* The decision to separately identify these people for special screening (see resource level 1) depends on the available colonoscopy resources. If not available, those people can be screened along with average-risk individuals.

### 5.3 New tests

CTC and DNA testing are available only in a few high-resource countries and are generally not applicable globally. However, where available, they can be offered to average-risk men and women, starting at the age of 50, who do not wish to be screened by other more standard methods, in order to increase the low number of people currently being screened in these countries.

### 5.4 Recommendations for action—implementing a program

#### Recommendations for action—general:

- Develop and disseminate structured educational programs for members of the public, providers, health-care systems, and policy-makers/political leaders. Effective educational programs should be directed to each of the important participants in an acceptable manner.
- Develop evidence-based standards for quality throughout the screening process.

- Develop and disseminate inexpensive, easy-to-use clinical management systems.
- Advocate screening through national and local venues.
- Promote colorectal cancer screening as part of comprehensive clinical preventive care.

**Recommendations for action—program design**

*Planning the screening program:*

- A target population should be identified—i.e., asymptomatic men and women, age, risk factors (e.g., familial).
- The decision to implement colorectal cancer screening should be based on the relative burden of colorectal cancer in the population to be screened.
- The screening strategy (test, interval, age range) should be based on medical evidence (guidelines), availability of resources, level of risk, and cultural acceptance by the population.
- Support by influential professional and patient advocacy groups and from the media is essential.
- Evaluate the feasibility of the proposed program. Address the development and allocation of resources (financial, personnel, facilities).
- Evaluate the specific cultural and language needs of the population.

*Implementing the screening program:*

- Identify the target unit for implementation, and ensure communication (training and education) with providers (general practitioners and others) and the target population.
- Develop and disseminate guidelines on screening, diagnosis, treatment, and surveillance in a patient-friendly and culturally sensitive manner.
- Develop methods for initial patient enrollment and follow-up.

*Monitoring the screening program:*

- Careful, timely monitoring of the following rates: screening uptake, re-screening, and follow-up of positive tests.
- Compliance with surveillance recommendations.
- Measurement of the program quality should be in place, and evaluated regularly.
- Outcomes, including detection rates, cancer stage distribution, adenoma detection, complications, and, finally, the effect on the population incidence and mortality. ■

*The full text of this guideline is freely available for download in English, French, Mandarin, Portuguese, Spanish, and Russian at the WGO web site ([www.worldgastroenterology.org](http://www.worldgastroenterology.org)).*

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# Hepatocellular carcinoma

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René Lambert

## Liver cancer: the burden

Hepatobiliary tumors are classified into two groups: extrahepatic bile ducts (with the gallbladder) and liver (with the intrahepatic bile ducts). In the Globocan 2002 database of the International Agency for Research on Cancer (IARC), the worldwide burden of liver cancer is estimated for the year 2005 at 671,000 new cases (474,000 men, 197,000 women). Liver cancer is the sixth most common cancer and, owing to its poor prognosis, the third commonest cause of death from cancer. Most cases of liver cancer—i.e., 82% of the estimated total—occur in developing countries, with the highest rates in sub-Saharan Africa, eastern and south-eastern Asia and the lowest rates in the developed countries, with the exception of Japan, Greece, and Italy (Table 1). The incidence can also vary in relation to ethnicity, as shown in the Surveillance Epidemiology and End Results (SEER) registries in the USA, where the highest incidence is found in people of Asian origin (Table 2).

Primary cancers of the liver in adults are classified into two main histological types (Table 3). Hepatocellular carcinoma (HCC), derived from hepatocytes, accounts for most cases. HCC develops in a context of chronic liver disease and fibrosis, except for fibrolamellar carcinoma, which accounts for less than 1% of cases. Cholangiocarcinoma, derived from the epithelial lining of the intrahepatic bile ducts, is much less frequent than HCC worldwide. Its geographic distribution coincides with endemic areas of

the liver flukes *Opisthorchis viverrini* and *Clonorchis sinensis*—as in north-east Thailand, for example, where it accounts for up to 80% of liver cancers. In the developed coun-

**Table 2** Age-standardized rate (ASR) of liver cancer per 100,000 relative to ethnicity in the USA. The rate is lower in the white population

Ethnicity	Men	Women
All races	9.5	3.4
White	7.9	2.9
Black	12.7	3.8
Asian/Pacific Islander	21.3	7.9
American Indian	14.8	5.5
Hispanic	14.4	5.7

Source: SEER (17 registries, 2000–2004)

**Table 3** Hepatocellular carcinoma in registries with microscopic classification of liver cancer. Data for both sexes. Proportion of hepatocarcinomas and cholangiocarcinomas. Other tumors and unspecified histology not reported.

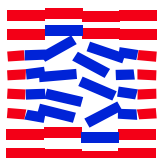
	Hepatocellular carcinoma	Cholangiocarcinoma	MV
<b>North America</b>			
Canada (national registry)	69.5%	19.6%	56%
USA (SEER, whites)	65.1%	23.7%	73%
USA (SEER, blacks)	76.3%	12.2%	76%
<b>Asia</b>			
China (Hong Kong)	79.7%	14.2%	54%
Japan (Osaka)	90.4%	8.7%	38%
Thailand (Bangkok)	72.1%	25.2%	47%
Thailand (Khon Kaen)	10.1%	80.8%	5%
<b>Europe</b>			
Denmark	47.7%	34.2%	80%
Sweden	67.3%	8.9%	93%
UK (England and Wales)	48.5%	31.3%	58%
Netherlands	75.2%	16.2%	82%
France (Isère)	88.4%	7.4%	65%
Germany (Saarland)	63.3%	11.6%	59%
Italy (north-east)	67.4%	12.5%	57%

MV, microscopically verified in the tumor registry. Source: Cancer incidence in five continents, vol. 8 (2002), period 1993–97.

**Table 1** Crude incidence and age-adjusted rate (ASR) per 100,000 for liver cancer in some countries or regions of the world, as estimated in 2002. There are high ASRs in east Asia and some regions of Africa and southern Europe (Italy).

	Men		Women	
	Crude incidence	ASR	Crude incidence	ASR
North America	7.0	5.3	3.2	1.9
East Asia	38.8	36.9	15.5	13.3
Africa (Mozambique)	40.6	79.4	25.9	42.4
Southern Europe (Italy)	29.8	15.9	12.5	5.1
Northern Europe (Netherlands)	2.6	1.8	1.1	0.6

Source: IARC Globocan database, 2002.



tries, cholangiocarcinoma also occurs as a complication of cholestatic liver cirrhosis.

**Hepatocellular carcinoma: incidence, mortality, survival**

**Geographic variations in incidence.** Worldwide, men are affected three times more frequently than women. The incidence of HCC is particularly high in Asia and in Africa. In West African countries (e.g., Gambia, Mali, and Guinea), the age-standardized rate (ASR) of HCC per 100,000 varies from 38 to 49 in men and from 12 to 18 in women. In Bulawayo (Zimbabwe), the respective figures were 52.1 in men and 20.6 in women in the period between 1963 and 72.

**Temporal trends in incidence.** The spread of hepatitis C virus (HCV) is the principal cause of the increasing incidence of HCC that occurred in the 20th century in the developed countries. In Japan, an exponential growth in the number of HCV infections has occurred since 1921 among patients with schistosomiasis, due to inadequate sterilization of syringes for intravenous antimony treatment. In Egypt, there was a spread of HCV infection between 1940 and 1980, again associated with campaigns for the eradication of schistosomiasis. In the USA, where the increase is likely to continue for the next decade, a study of HCC cases based on the SEER program has shown that the ASR per 100,000 increased from 1.4 in 1975–77 to 3.0 in 1996–98 (Table 4). In addition, the increasing role of viral hepatitis C and B was explored in patients aged 65 and older with continuous Medicare enrolment for 2 years before and after diagnosis; the ASR of HCC per 100,000 increased from 14.2 to 18.1 during the period 1993–99. During the same period, the proportion of cases related to viral hepatitis increased from 11% in to 21% for hepatitis C virus and from 6% to 11% for hepatitis B virus.

**Mortality.** The prognosis of HCC is very poor, and the annual number of deaths is similar to the number of incident cases. However, the mortality rates are often exaggerated when secondary metastatic liver cancer is registered erroneously as primary cancer.

**Survival.** The 5-year relative survival is extremely low, despite a small recent improvement. In cancer registries

including histological data and a follow-up of registered cases, the 5-year relative survival varies from 3% to 5% in the developing countries. In the USA (SEER registries), the 5-year relative survival for HCC increased from 2% in 1977–81 to 5% in 1992–96, and the median survival increased slightly, from 0.57 years to 0.64 years. In the USA, Asians have a higher 3-year relative survival than whites and are more likely to receive surgical therapy, as shown in the SEER files (nine registries) for 1987–2001. Fibrolamellar carcinoma has a better prognosis than HCC, due to the younger age of onset and lack of cirrhosis. A retrospective cohort study conducted in the USA (for the period 1986–99) has shown that patients with fibrolamellar carcinoma were detected more often at the stage of localized disease than those with HCC; the 5-year relative survival was significantly better (31.8%) for fibrolamellar carcinoma than for HCC (6.8%).

**The precursors of hepatocellular carcinoma**

**Dysplastic nodules in liver cirrhosis.** Most cases of HCC develop in patients with chronic liver disease with fibrosis. Liver cirrhosis is a preneoplastic condition with an increased risk of carcinoma development; large nodules in cirrhotic livers represent premalignant lesions. Advanced imaging techniques for detection have allowed more frequent resection of suspicious nodules and improved the histological classification: some nodules were devoid of atypia, others had adenomatous hyperplasia, and others contained microscopic subnodules of HCC. The histological diagnosis is still matter of debate; the same lesion may be classified by pathologists as a dysplastic nodule in

**Table 4** Hepatocellular carcinoma in the USA; time trend in age-standardized rate per 100,000

	Men	Women
1973	1.18	0.52
1977	1.51	0.32
1982	1.36	0.55
1987	1.64	0.62
1992	2.05	0.59
1997	3.07	0.68

Source: SEER (nine registries, 1973–97).



Western countries or as an early-stage, well-differentiated HCC in Japan. However, the precursor status of dysplastic nodules is supported by the presence of HCC foci in some nodules and the observation of clinical progression from dysplastic nodules to HCC in some patients.

#### Adenomas and focal nodular hyperplasia.

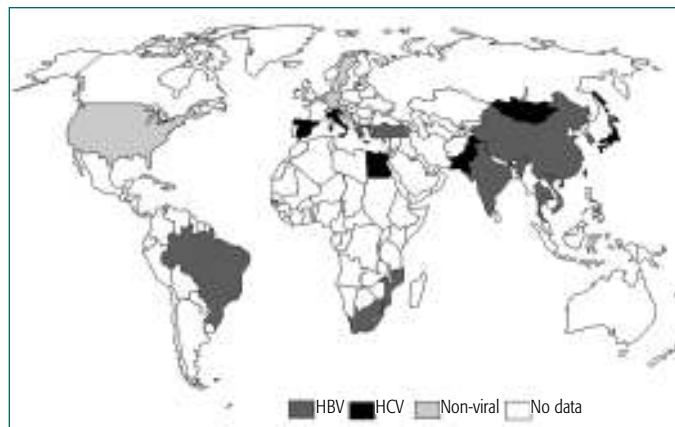
Some nodular alterations in the liver are benign. Hepatic adenomas are rare and benign neoplastic lesions with no potential for malignancy, and have been described in young women after long-term use of oral contraceptives; their incidence has fallen since the reduction of estrogen levels in oral contraceptives. Focal nodular hyperplasia is a benign lesion, characterized by a stellar scar surrounded by a hyperplastic nodule. Mostly frequent in young women, this lesion is considered to be a local hyperplastic response of the hepatocytes to hypervascularization.

#### The causes of hepatocellular carcinoma

Chronic infection with hepatitis B virus or hepatitis C virus is the most common cause of chronic liver disease and of HCC, followed by alcoholic liver disease. Other causes are less frequent, but in certain areas of China and Africa, exposure to aflatoxin in association with viral hepatitis may be responsible for the extraordinarily high risk of HCC (Fig. 1).

#### Viral hepatitis

**Hepatitis B virus (HBV)** is a DNA virus (Hepadnavirus) characterized by the presence of hepatitis B surface antigen (HB<sub>s</sub>Ag) on its outer envelope and hepatitis B core antigen (HB<sub>c</sub>Ag) in the nucleocapsid; the core gene produces hepa-



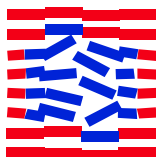
**Fig. 1** Predominant causes of hepatocellular carcinoma (hepatitis B virus, hepatitis C virus, and seronegative for both) by country (i.e. countries with more than 150 HCC cases using 2nd/3rd generation anti-HCV tests).

titis B e antigen (HB<sub>e</sub>Ag), a marker for a high replication rate. HBV has eight different genotypes with distinct geographic and ethnic distributions; types B and C are prevalent in Asia and types A and D in Africa, Europe, and India. Epidemiologic studies on the prevalence of the HBV infection are based on seropositivity for hepatitis B surface antigen (HB<sub>s</sub>Ag): individuals who are chronic HBV carriers are HB<sub>s</sub>Ag+. The routes of transmission of HBV

infection include the vertical route (from mother to child), which predominates in China and other parts of Asia; horizontal transmission (bites, and sanitary habits) in early life, which is very important in Africa; and adult horizontal transmission (sexual contact, intravenous drug use, and medical procedure exposure), which accounts for the majority of infections in Western countries.

**Hepatitis C virus (HCV)** is an RNA virus (Flavivirus). HCV has six different genotypes. Diagnostic tests rely on second- and third-generation anti-HCV enzyme-linked immunosorbent assay (ELISA) testing; individuals who are HCV carriers are anti-HCV+. Another test for hepatitis C virus is the detection of HCV RNA by reverse transcription polymerase chain reaction. The transmission of the infection is linked to inadequate control of blood donations and unsafe injection practices. The relative importance of HBV and HCV infections in the etiology of HCC varies from one part of the world to another, and can change over time. The emergence of HCV infections in Japan, Egypt, and the USA has been estimated by using molecularly clocked serial samples from HCV carriers of genotypes 1a and 1b.

**Epidemiology of HBV and HCV infections.** According to the World Health Organization (WHO), approximately 350 million people are chronically infected with HBV and



**Table 5** Proportion of liver cancers attributable to hepatitis viruses: estimated numbers attributable to infection with HBV and HCV in 2002

	Hepatitis B virus			Hepatitis C virus		
	Infection, prevalence of HBsAg	HCC		Infection, prevalence of anti-HVC	HCC	
		Attributable proportion	Attributable cases		Attributable proportion	Attributable cases
Developed countries	1.6%	23.3%	26,000	1.3%	19.9%	22,000
Developing countries	7.5%	58.8%	303,000	2.64%	33.4%	172,000

HCC, hepatocellular cancer. Source: Parkin DM, *Int J Cancer* 2006;118:3030–44.

170 million with HCV worldwide. The fraction of liver cancer attributable to HBV and HCV in 2002, worldwide, has been estimated by D.M. Parkin in a study, based on the incidence of primary liver cancer and the prevalence of HBV and HCV infections in different populations. This meta-analysis includes 15 cohort studies and 65 case-control studies compiled in the IARC monograph and more recent data compiled by B. Custer in 2004. The study, based on a 20-fold increased risk of liver cancer in carriers of hepatitis viruses, estimates the fraction of liver cancer attributable to hepatitis viruses in developed and developing countries. The global figure reaches 523,000 cases, as shown in Table 5.

More recently, a review of the prevalence of HBV and HCV carriers among individuals with a confirmed diagnosis of HCC was conducted by Raza et al. The meta-analysis included 27,881 cases of HCC from 36 countries and was based on 90 studies with relevant data on the prevalence of HBsAg and anti-HCV; the majority of cases analyzed were from Asia (66%), followed by the Americas (15%), Europe (12%), and Africa (7%) The results, presented by continent in Table 6, confirm large intercontinental variations in the distribution of cases caused by HBV infection, HCV infection, and HBV/HCV coinfection. Similar variations occur for cases unrelated to hepatitis viruses. It should be noted that information about this causal association was scarce or absent in some regions of the world. This applies to eastern Europe, Russia, central Asia, and the majority of African and Latin-American countries.

**HCC in Asia.** On the basis of the study by Raza et al., the proportion of HBsAg+ HCC cases is greater than 50% in China, Taiwan, Korea, Thailand, Vietnam, and Turkey. A high proportion of anti-HCV+ HCC cases is found in Japan (68%), Pakistan (45%), and Mongolia (40%), where HBV/HCV coinfection is also very frequent (25%). The highest proportion of HCC cases seronegative for both hepatitis viruses is found in India (37%).

**HCC in Europe.** On basis of the study by Raza et al., a high proportion of HBsAg+ HCC occurs in Greece (56%); the proportion of anti-HCV+ HCC cases is high in Austria, Sweden, and especially in Italy (43%) and Spain (48%). HBV/HCV coinfection is rare in most European studies, whereas HCC cases seronegative for both hepatitis viruses are relatively common. In a case-control study conducted in two regions of Italy in the period 1999–2002 by Franceschi et al., the respective proportions of HCC cases attributed to HCV, HBV, and alcohol were 61%, 13%, and 18%, respectively.

**Table 6** Hepatocellular carcinoma: proportion attributable to hepatitis viruses—meta-analysis of 90 studies

	HbsAg+	Anti-HVC+	HbsAg+, anti-HVC+	HbsAg-, anti-HVC-
Asia	48.1%	29.2%	7.9%	14.8%
Europe	23.1%	34.3%	6.5%	36.1%
Africa	30.0%	43.2%	6.8%	20.0%
North America	8.8%	21.9%	3.1%	66.1%
Latin America	40.7%	19.4%	4.7%	35.2%

Source: Raza SA, Clifford GM, Franceschi S, *Br J Cancer*, 2007;96:1127–34.

**HCC in America.** Raza et al. report a meta-analysis of 3725 cases of HCC in the USA. Nine percent of cases were attributed to HBV, 22% to HCV, 3.2% to HBV/HCV coinfection, and 67% of the cases were seronegative for markers of both hepatitis viruses. In South America, a study conducted in Brazil has shown that 37% of HCC cases were attributable to HBV infection and 18% to HCV infection. In Peru and Mexico, the prevalence of HB<sub>s</sub>Ag carriers exceeded that of anti-HCV carriers.

**HCC in Africa.** On the basis of the study by Raza et al., a high proportion (69%) of HCC cases in Egypt are attributable to HCV infection. In all other African countries, a link to HBV infection is predominant. In South Africa, approximately 30% of HCC cases are seronegative for both hepatitis viruses. In the IARC monograph *Cancer in Africa*, the proportion of primary liver cancers attributable to HBV varied from 50% in northern Africa to 70% in West Africa.

### **Alcohol**

In the developed countries, alcohol abuse is a major cause of liver fibrosis and cirrhosis and may account for the majority of HCC cases in areas in which the prevalence of hepatitis viruses is low. The first stages of alcoholic liver disease are steatosis and steatohepatitis. Liver fibrosis develops in the context of a pronounced inflammatory response due to oxidative stress, with hypoxia and the stimulation of fibrogenesis by acetaldehyde (ethanol metabolite) and lipid oxidation products. Ethanol contributes to nutritional deficiency and oncogenic mutations during liver cell regeneration, and has synergistic effects with other environmental carcinogens (HBV, HCV, aflatoxin, vinyl chloride).

### **Aflatoxin**

Aflatoxin has been classified as carcinogenic to humans by the International Agency for Research on Cancer. The aflatoxins produced in tropical countries by *Aspergillus parasiticus* and *Aspergillus flavus* in hot and humid conditions are naturally occurring mycotoxins found in foods such as corn, peanuts, and cottonseed. In experimental models, aflatoxin B1 (AFB1) has been demonstrated to be carcinogenic to the liver and leads to carcinogen-DNA adducts. AFB1 has additional important toxic effects on

immunity and interferes with protein metabolism and the absorption of multiple micronutrients. The level of human exposure to aflatoxins has been reviewed globally; individuals living in some developing countries are seasonally exposed to large amounts of the toxin. Human exposure in tropical Africa varies between 3 and 200 ng/kg body weight per day; in exposed individuals, metabolites of aflatoxin are detectable in various tissues and in the urine. Southern China and sub-Saharan Africa have the highest dietary exposure to AFB1, making it a major cause of HCC mortality in these geographic areas.

### **Other causes**

Cases of HCC occurring in persons exposed to some toxic elements or to metabolic diseases often associated with liver steatosis or liver fibrosis only account for a small fraction of the global burden. An increased HCC risk is observed in the following situations.

**Exposure to vinyl chloride.** Apart from the known risk of angiosarcoma of the liver and soft-tissue sarcomas, occupational intoxication by the vinyl chloride monomer may increase the risk of HCC, possibly in synergy with alcohol consumption and/or viral hepatitis infection.

**Iron overload.** This is a frequent situation in some populations in South Africa when traditional beer is prepared in iron vessels.

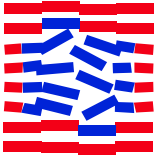
**Hemochromatosis.** The risk of HCC is increased in this genetic disease, in which epigenetic aberrant DNA hypermethylation occurs in the hepatic parenchyma at an early stage.

**Diabetes.** An increased risk of HCC has been suggested among diabetics. However, diet and obesity are major confounding factors, and the evidence is inconclusive.

**Oral contraceptives.** The liver is morphologically and functionally modulated by sex hormones. However, oral contraceptives do not appear to interact with HBC or HCC and do not appear to be associated with HCC.

### **Hepatic carcinogenesis**

HCC follows the carcinogenesis sequence, which leads from chronic inflammation with oxidative stress to cancer. Prolonged liver injury results in hepatocyte damage



and triggers activation of hepatic stellate cells. This in turn causes the production of collagen type I and secretion of profibrogenic cytokines and inhibitors of matrix-degrading enzymes, leading to extracellular matrix deposition after the destruction of the hepatocytes. In chronic liver inflammation, the alternating phases of cell degeneration and regeneration are associated with genetic and epigenetic changes (hypermethylation) of DNA. The molecular pathogenesis of HCC can be classified into two distinct pathways, depending on the presence or absence of chromosomal instability: HBV and poorly differentiated tumors, which show chromosome instability, are associated with frequent *TP53* mutations; non-HBV and well-differentiated tumors, which are associated with chromosomal stability, frequently show activation of the *WNT*/beta-catenin pathway.

#### ***Viral oncogenesis***

Integration of the HBV DNA virus into the host genome ensures the persistence of the infection; the risk of HCC increases with the increase in the viral load. The virus behaves as an oncogene and directly affects cancer-related genes and mutagenesis. In addition, the HBx gene in the HBV genome, which encodes the HBx regulatory protein, acts as a promoter. HBx is localized in the cytoplasm and nucleus of hepatocytes and activates signaling cascades controlling the cell cycle (proliferation and apoptosis). Depending on the genotype of the virus, a second family of regulatory proteins, the PreS2 activators, may also play a role.

The mechanisms of HCV oncogenesis are still unclear. The viral genome is not inserted into the cell DNA, and its replication is totally intracytoplasmic. HCV does not behave as an oncogene. Cancer development appears to depend on interaction between the core protein and the cell cycle and altered expression of cellular proto-oncogenes such as *c-myc* and the tumor-suppressor gene *p53*, resulting in deregulation of the control of apoptosis.

#### ***Alcohol oncogenesis***

Alcohol consumption causes cellular injury and epigenetic alterations, particularly hypermethylation of DNA.

The epigenetic effects are mainly attributable to the oxidative and nonoxidative metabolism of ethanol, with acetaldehyde being the main metabolite of alcohol causing increased oxidant stress, which damages the DNA.

#### ***Aflatoxin oncogenesis***

Aflatoxin B1 (AFB1) is metabolized by cytochrome P450 to a reactive form, AFB1 –5-9 oxide. The predominant AFB1-DNA adduct is identified as an AFB1-N7-guanine adduct. Aflatoxin induces a characteristic mutation, with G:C to T:A transversions at codon 249 on the *TP53* tumor-suppressor gene, as shown in samples of HCC collected from populations exposed to high levels of dietary aflatoxin in China and southern Africa.

#### ***Early detection of hepatocellular carcinoma***

Early detection of HCC in individuals at risk is based on ultrasonography and the serum alpha-fetoprotein (AFP) level; the objective of early detection is to increase the possibility of cure with local ablative therapies, including radiofrequency treatment.

Screening for HCC with AFP and ultrasound, repeated at 6-month intervals, is often offered either to patients with liver cirrhosis or in high-risk populations. The sensitivity and specificity of AFP depend on the cut-off value chosen. In patients with liver cirrhosis, the sensitivity is only around 60% at a cut-off level of 20 ng/mL. In carriers of HBV, the sensitivity is much higher (94%), but the positive predictive value is low. The performance of ultrasound varies widely depending on the examiner and the technology used. The sensitivity of the procedure is 60%, and the positive predictive value is quite high. Progress is expected in the near future, with the emergence of new imaging and biological techniques (gene-expressing microarrays and proteomics).

#### ***Prevention of hepatocellular carcinoma***

##### ***Primary prevention***

In the developed countries, the prevention of virus-related hepatitis is well established. HBV vaccination is the most effective procedure, as shown in series from Asia and in the Gambia Hepatitis Intervention Study. There is no vaccine available for HCV. The prevention strategy is based

on screening of blood donations, safe injection practices, and the avoidance of unnecessary injections. In developing countries, economic constraints limit the prevention of viral hepatitis transmission.

With regard to aflatoxin, preventive strategies are based on dietary interventions among individuals living in regions with a high risk of exposure to aflatoxin.

#### **Early detection of fibrosis in chronic liver disease**

When chronic liver disease is established, noninvasive tests are now offered instead of repeated biopsies to evaluate the progression of fibrosis. The new tests include the Fibroscan, which estimates the elasticity of liver parenchyma with transient elastography, and the Fibrotest score, a pool of serum markers—haptoglobin, apolipoprotein A, bilirubin, gamma GT and alpha-2 macroglobulin.

#### **Antiviral treatments**

Chemotherapy for HCC has been offered to carriers of HBV and HCV infection, with the objective of reducing the virus load and slowing the progression to cirrhosis and cancer. Lamivudine, which inhibits the reverse transcriptase of HBV, has been shown to prevent HCC in a multicenter randomized study in Asian patients; however, the virus develops resistance. Peginterferon, alone or in combination with ribavirin, has been used in order to inhibit HCV replication.

#### **Anti-aflatoxin agents**

Prevention of HCC in individuals exposed to aflatoxin has been offered in China, either with oltipraz, a potent inducer of enzymes involved in the detoxication of carcinogens, or with chlorophyllin; the efficacy of these approaches is far from having been confirmed. ■

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## 50<sup>th</sup> Anniversary WGO

Next year, 2008, marks the 50th anniversary of the World Gastroenterology Organisation. First formed in Brussels in 1935 and later officially constituted in 1958 in Washington, D.C., it is one of the world's oldest and largest medical societies. WGO will be commemorating this special event with a variety of scientific and social activities throughout the year.

#### **February**

Pan-Africa Training Center  
online symposium

#### **April**

special 50th anniversary edition of  
World Gastroenterology News

#### **October**

WGO Symposium, Philadelphia,  
American College of Gastroenterology  
Annual Science Meeting

#### **November**

WGO Scientific Lectures and Plenary  
Sessions, Pan-American Congress of  
Gastroenterology, Chile

Watch this space for details -  
more events to be confirmed.

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## Train the Trainers Workshop, Porto, April 2007

F. Mourad

The workshop was conducted in a very nice area of Portugal, in a relaxing atmosphere—helped by the nice warm weather and a “no necktie” policy! The workshop was attended by 44 participants from 20 different countries, with 10 faculty members.

The expected objectives of the workshop, as stated by the participants during an open discussion on the evening beforehand, were almost identical to the objectives set by the organizers as described in the workshop book. The comment made by most of the participants was, “We all teach and train medical students, residents, and fellows, but nobody has taught us how to teach and we don’t know whether we’re doing it properly.” Other workshop objectives dealt with critical appraisal of studies, evidence-based medicine, the art of presentations, how to search for information in the literature, credentialing for physicians in gastroenterology, the concept of clinical research, and finally how to get studies published.

During the workshop, most of these objectives were met and the related topics were well covered and discussed. The unforgettable take-home messages included:

- The old “one-way” style of teaching in medical schools (from the almighty professor to the poor student), where the student is just bombarded with dry material and information, is over. Consecutive one-hour lectures are being replaced with small group discussions. As Dr. Robin Teague put it, “education is about lighting fires,

not filling buckets.” Mixing education with fun greatly enhances its effect.

- The ability to teach complex procedural skills is not innate. A complex procedure should be broken down into small components. This type of teaching should go through four steps: 1, the teacher does the procedure; 2, the teacher explains the different steps; 3, the trainee explains the different steps of the procedure; 4, the trainee does the procedure under close supervision, explaining what he or she is doing at every step.
- Don’t be a slave of guidelines. Guidelines are there to guide, not to dictate.
- Don’t believe everything you read and do not take the conclusions of studies for granted. In clinical trials, simple questions have to be asked: is the sample size adequate? Is the methodological quality acceptable? A detailed knowledge of statistics is most often not needed to answer these questions. If you have doubts, visit the Cochrane Library!
- Never start a clinical trial before asking the 20 questions set by Dr. Christian Gluud.

We achieved far more than just the stated objectives. I can briefly summarize them, touching on five areas of the humanities and sciences:

- *Politics*. The workshop was able to prove that well-established boundaries between different populations

Workshop Faculty and Participants



can easily be abolished. The remedy for political, geographical, religious, or ethnic boundaries is civilized discussion—especially in the realm of science and medicine, which can break down and cross any boundaries or borders.

- *Sociology*. The theory stating that in any nation, country, community, society, or even in a group of people, you can always find the good, the bad, and the evil was rejected in the workshop at a significance level of  $P < 0.000001!$
- *Physics*. The workshop was able to discover many “potential energies” and transform them into “kinetic energies.” Many participants were not previously aware that they had the potential to present data in a nice, organized way, especially in a foreign language. Amazingly, they succeeded in changing their potentials into kinetics and in acquiring the confidence to do it. Great achievements were made in this area.
- *Sport*. The team-building event was successful, discovered some hidden talents, and was a good start for enhancing the group spirit during discussions.
- *Economics*. The participants were so busy during the 4 days that no one had the time to spend any money. This is proof that one can travel long distances with very low expenses!

After all the success of the present and the previous TTT workshops, I believe it is time to move one or two steps forward. For the ultimate objective of these activities to be achieved, the number of workshops should mushroom. This can only happen if the participants are able to hold mini-TTT workshops in their own countries or regions. It is therefore time to try to move from “training the trainer to train a *trainee*” to “training the trainer to train a *trainer*.” One way of doing that would be to invite one or two participants from each workshop to be on the faculty at one of the next TTT workshops, so that they can get more experience in training trainers.

In addition, a more advanced workshop is now needed for gastroenterologists who are heavily involved in academic medicine—i.e., teaching, research, or administration. Suggested topics might include: problem-based learning;

advanced statistics; introduction to management, marketing, budgeting, and finance; advanced communications skills; leadership; research proposal writing and grant applications; curriculum development; writing written exams for medical students; and how to evaluate and be evaluated by students.

Finally, on behalf of all the participants in the workshop I would like to thank the World Gastroenterology Organization and the faculty warmly for a well-conceived project that was well planned and superbly executed. I am sure this could not have happened without the wonderful work of the TTT secretaries and administrators, as well as the kindness and the great hospitality of our Portuguese hosts. ■

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# World Digestive Health Day

## Overview & Outlook

Worldwide, digestive disorders are the single most common reason for physician consultation with digestive cancers representing the most common cancers, many of which are preventable.

May 29

Every year, the World Gastroenterology Organisation launches a year long World Digestive Health campaign. Kicking off on May 29 with World Digestive Health Day, the WGO calls the public and health communities' attention to a particular GI disorder.

2005: Celiac Disease  
2006: Helicobacter pylori  
2007: Viral Hepatitis  
2008: Nutrition  
2009: Colorectal Cancer Screening  
2010: IBS

The World Digestive Health annual campaign incites action and education. Member societies of WGO report GI data from their countries to compile a scientific report for global distribution and organise public education events and symposia on May 29.



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# Challenges and Solutions in Clinical Gastroenterology: a perspective from Africa and the Middle East

This December the World Gastroenterology Organisation presents the 2 day post-graduate course "Challenges and Solutions in Clinical Gastroenterology: a perspective from Africa and the Middle East". Under the patronage of His Highness Sheikh Dr. Sultan bin Mohammed Al Qasimi, Member of the UAE Supreme Council, Ruler of Sharjah, the course will be held December 8<sup>th</sup> and 9<sup>th</sup> at the Medical School of the University of Sharjah in the United Arab Emirates in collaboration with the Emirates Society of Gastroenterology and the African Middle East Association of Gastroenterology (AMAGE). WGO President, Prof. Eamonn Quigley (Ireland) and Dr. Asad Dajani (UAE) will chair the occasion.

This course is a preparatory introduction to the establishment of the WGO Sharjah Training Center. The WGO is committed to its endeavour to deliver proper training to Gastroenterologists and specialist physicians willing to train in GI in the developing world. The WGO Sharjah Training Center will provide training opportunities to support developing regions in the Gulf, Middle East and Central Asia. The center will be established through a donation and support from His Highness Sheikh Dr. Sultan bin Mohammed Al Qasimi, Member of the Supreme Council, Ruler of Sharjah, in collaboration with the Medical Faculty of the University of Sharjah. Once the center is fully operational, it will hold several training courses yearly, highlighting hands-on experience under the direction of WGO trainers.

In this unique educational event, faculty and attendees from across Africa and the Middle East will confront, together, some of the major challenges in diseases of the gastrointestinal tract, liver and biliary systems. In an interactive and amply illustrated case-led format, common and difficult clinical challenges will be presented, discussed and resolved in an evidence-based manner under the guidance

of expert international, regional and local faculty. Attendees will also be challenged to collectively develop solutions to important gastroenterological and hepatobiliary dilemmas. In this manner two crucial goals will be achieved: the dissemination of new clinical information relevant to the management of digestive diseases in the region and participant exposure to the modern educational methods espoused by WGO.

The Ruler of Sharjah is generously supporting and promoting the attendance of gastroenterologists from Africa by offering 20 travel grants. Travel grants include round trip airfare to Sharjah as well as 3 nights accommodation. The grants are intended for participants from countries that lack access to GI training. Course participants should be actively involved in GI in the broadest sense (gastroenterology, endoscopy, hepatology, digestive surgery) and under 40 years of age. Proficiency in English is necessary for participation in this interactive meeting and preference will be given to those who are involved in teaching and committed to continuing to serve in their native country. Grant applicants will be considered by nomination only, and WGO member societies and partner societies in Africa are encouraged to submit nominations to the WGO Executive Secretariat. Nominations for travel grants will be accepted until October 15, 2007, and can be sent per email, fax or post to the WGO Executive Secretariat. ■



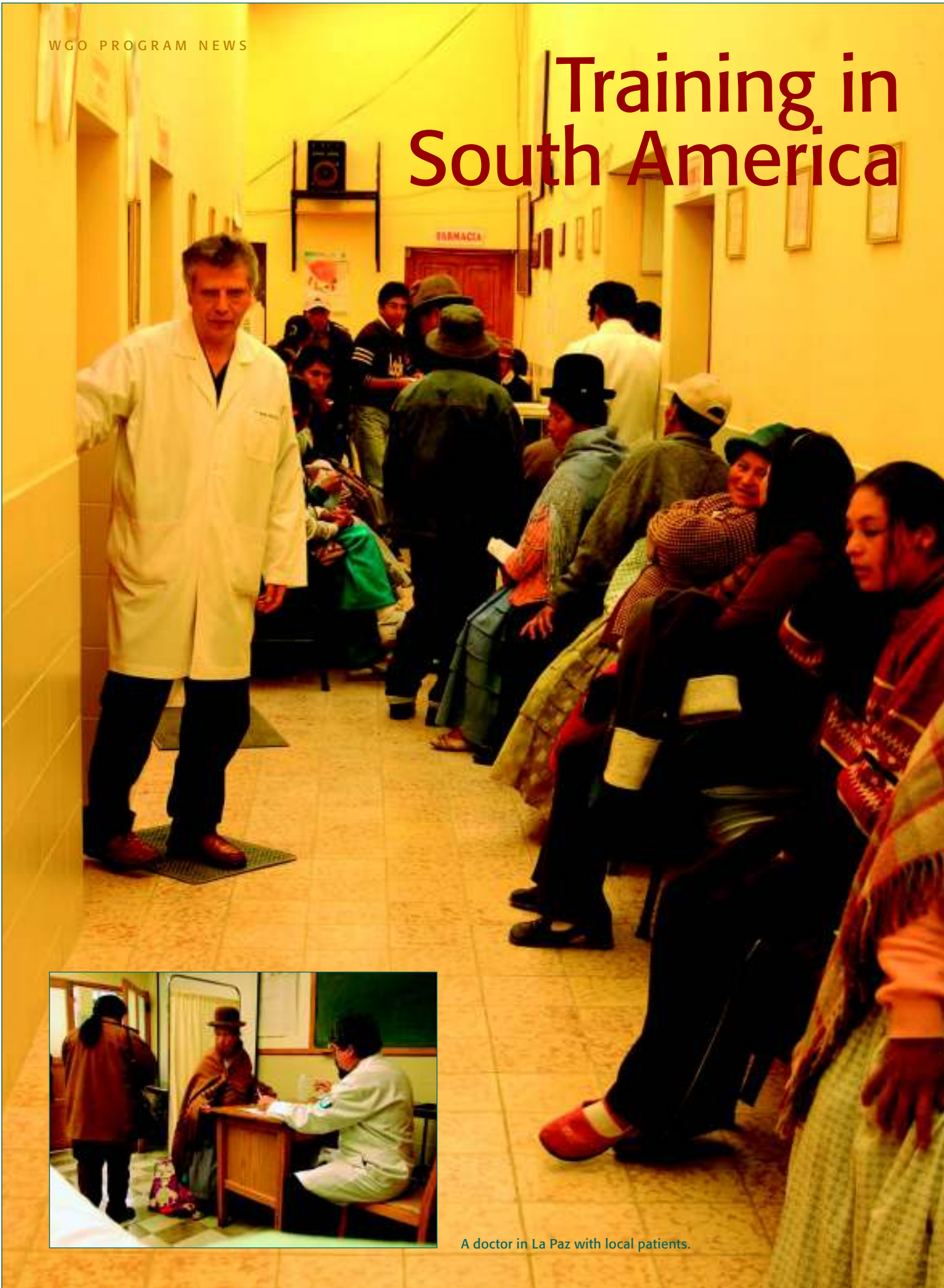
Sharjah, mosque.

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# Training in South America



A doctor in La Paz with local patients.

# From mountaintop to pampas

D. LaBrecque

In March this year, the WGO Secretary-General, Dr. Henry Cohen, and I took part in the Third International Course held at the Training Center in La Paz, Bolivia, and also helped celebrate the opening of the WGO's Advanced Training Center in La Plata, Argentina.

## La Paz

The Training Center in Gastroenterology and Digestive Endoscopy for Latin America in La Paz, Bolivia, is supported by the WGO and the Japan International Cooperation Agency (JICA). It is headed by Dr. Guido Villa-Gomez, who put together a remarkable program for the Third International Course on Advances in Gastroenterology and Digestive Endoscopy on 13–27 March. Twenty-eight young physicians from nine South American countries, plus one from Mexico, took part. Eighteen had received JICA scholarships and two had WGO scholarships. In addition, four students were recipients of WGO scholarships for 6 months of hands-on training in therapeutic endoscopy. A total of 14 visiting faculty members from six countries contributed to the course's international flavor.

The 2-week program included 51 lectures, six interactive seminars, two workshops, six live demonstrations, three video forums, and 10 country reports. A highlight of the program was a weekend spent in Copacabana on the shore of Lake Titicaca, where the entire student group, eight visiting professors, and the La Paz faculty provided outpatient consultations (208), ultrasonography (120), endoscopic studies (105), biopsies (81), and laparoscopic surgery (six patients) free of charge to the local Aymara population.

Dr. Villa-Gomez and his local faculty are to be complimented on producing a most intensive and comprehensive course, which provided both the clinical science and the hands-on experience needed to offer the students outstanding opportunities. But I reserve my greatest admiration for the students—29 young male and female physicians who maintained their zeal and high level of interest throughout long days of lectures, demonstrations, and patient evaluations. The organizers are also to be congratulated for arranging accommodation and social events to bring the students from multiple countries and disparate



Faculty and participants at the opening of the Advanced Training Center in La Plata, Argentina.

cultures together, forming many new friendships that bode well for the future of the medical profession throughout South America.

## La Plata

After visiting La Paz, Dr. Cohen and I traveled to La Plata, Argentina (56 km south-east of Buenos Aires), to help launch the ninth WGO Training Center, third Advanced Training Center headed by Dr. Nestor Chopita.

The opening ceremony on 21 March was attended by the director of the local hospital (San Martin de La Plata Hospital) and the chief of the Department of Gastroenterology there, a representative of the Dean of the Medical Faculty at the National University of La Plata, as well as Dr. Chopita and the clinic personnel. After warm welcoming remarks, Dr. Cohen discussed the main activities of WGO and the important role of the Training Centers and I gave a keynote talk on hepatitis C.

The Center has a wonderful faculty and well-equipped facilities and is doing a remarkable job of providing training in advanced endoscopic techniques. It is a welcome addition to the roster of WGO Advanced Training Centers and is offering scholarships for a 2-day (12-hour) hands-on training course in November and for 6 months of training in the coming year. ■

## D. LaBrecque, MD

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## The WGO Foundation: interview with Bernard Levin



**P**rofessor Bernard Levin is currently Professor of Medicine in the Department of Gastrointestinal Medicine and Nutrition and Vice-President for Cancer Prevention and Population Sciences, as well as Divisional Head, at the M.D. Anderson Cancer Center in Houston, Texas. Born and educated in South Africa, although he has worked in the United States for most of his career, he has experienced at first hand the disparities in health care between the developed and emerging nations. He was recently elected chairman of the World Gastroenterology Organisation (WGO) Foundation board.

**World Gastroenterology News:** What interested you and attracted you to the role of becoming Chair of the board of the WGO Foundation?

**Bernard Levin:** It was the opportunity to be able to influence the future of gastroenterology by facilitating training and education of the next generation.

**WGN:** What do you think the role of professional organizations such as the WGO will be in the future?

**BL:** Their role will be to participate vigorously in education and training on a global scale, particularly in the developing countries; to promote high standards of medical practice and research in gastroenterology, hepatology, nutrition, and gastrointestinal oncology; and to influence public policy.

**WGN:** If given the opportunity, what single piece of advice would you give young doctors who are just starting out?

**BL:** Keep in mind that medicine is a lifelong career of learning from patients, peers, and students.

**WGN:** If you were not a doctor, what would you be?

**BL:** A pilot.

**WGN:** What journals or periodicals do you read on a weekly/monthly basis?

**BL:** The *New England Journal of Medicine*, *Science*, *Nature*, *Gastroenterology*, and *Cancer Research*.

**WGN:** In your travels across the globe, what experience has affected you the most?

**BL:** The enormous disparities in health care in the developing countries.

**WGN:** What do you do for relaxation?

**BL:** I read, listen to classical music, travel, and enjoy Indian food.

**WGN:** Do you have any children, and if so, what career paths have they chosen?

**BL:** Our son graduated from Cornell University and now works in the wine industry. He will be pursuing his MBA degree in a year or two. Our daughter recently graduated from Washington University, and is seeking employment in the environment-related nonprofit sector. My wife (who is a diagnostic radiologist) and I do not seem to have influenced our children favorably to enter the field of medicine!

**WGN:** What advice do you have for young people of college age, as far as career choices are concerned?

**BL:** Seize or create opportunities to broaden your horizons by traveling to and living in other parts of the world before making final decisions. If you are interested in helping others, medicine is still a wonderful and challenging career.

**WGN:** You are currently Professor of Medicine in the Department of Gastrointestinal Medicine and Nutrition and Vice-President for Cancer Prevention and Population Sciences and Divisional Head at M.D. Anderson Cancer Center. Do you have time to do any clinical medicine?

**BL:** Half a day per week.

**WGN:** Do you do endoscopy?

**BL:** No, I don't believe I can adequately maintain my skills there.

**WGN:** Do you see patients on a regular basis?

**BL:** Yes, but I will soon be retiring from M.D. Anderson to live in New York City.

**WGN:** What sorts of qualities do you value or do you think are important for Foundation Board members?

**BL:** A passion for fund-raising, to educate the next generation and to maintain high standards in gastroenterology on a global basis.

**WGN:** What role do you think foundations play in today's world—in the medical area, for example?

**BL:** Their role is a critical one—to enhance and facilitate philanthropy in medical research and education, especially in medium and low-resource countries. ■

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MAHATMA GANDHI



## SUPPORT YOUR WGO

Digestive disorders – from diarrhoea to obesity to cancer – are pre-eminent among health care issues globally, a significant burden to national healthcare budgets and the single greatest cause of cancer death. While an increasing awareness of causative factors, coupled with dramatic advances in diagnostic and therapeutic approaches have led to improvements in the prevention, diagnosis and treatment of digestive disorders, these benefits have not been transmitted equally across the world and, especially, to those in greatest need.

**As the global representative for gastroenterology, the role of the WGO is to:**

- increase global public awareness of digestive disorders
- provide accessible, high quality and independent educational opportunities to medical, nursing, and other healthcare professionals in digestive disorders throughout the world
- support healthcare professionals who care for those with digestive disorders worldwide

**How can you help?**

- Make a personal donation to the WGO Foundation
- Encourage family and friends to make a donation to the WGO Foundation
- Inform and encourage colleagues to join your national society, which in turn increases WGO membership



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# Cascades in gastroenterology—the best you can do with what you have!

J. Krabshuis



**A** cascade is a hierarchical set of diagnostic or therapeutic techniques for the same disease or diagnosis, ranked by the resources available. Gastroenterology guidelines are usually “evidence-based” or “consensus-based.” Consensus and evidence are strange epistemological entities. Do they relate to each other? When an opinion is shared by a number of people, does it become a consensus? If several experts share the same opinion, does that make it a “consensus”? Do all opinions together in their totality represent “evidence”?

Whereas the Cochrane Collaboration ([www.cochrane.org](http://www.cochrane.org)) is probably the best example of institutionalized “evidence-based medicine,” on the other side of the evidence–opinion continuum we could consider the “Faculty of 1000” (<http://www.f1000medicine.com>). Its gastroenterology faculty is headed by Professor Michael Farthing, the President-Elect of the World Gastroenterology Organisation (WGO). The faculty has an impressive list of topics and experts (<http://www.f1000medicine.com/about/members/8138>). Together they probably represent the best “opinion” money can buy (the Faculty of 1000 is available free for countries affiliated to the Health InterNetwork Access to Research Initiative (HINARI; <http://www.f1000medicine.com/about/hinari>).

Although they are not always free, it is relatively easy to access key sources of evidence such as the Cochrane Library ([www.cochrane.org](http://www.cochrane.org)), the Database of Abstracts of Reviews of Effects (DARE; <http://www.york.ac.uk/inst/crd/>), and PubMed ([www.pubmed.org](http://www.pubmed.org)). It is also easy to find consensus statements in PubMed (MeSH term: consensus-development-conference).

In the case of cascades, however, there is no published literature. It requires a hazardous intellectual journey—it goes against established practice and you are swimming against the strong tide of “evidence-based medicine.” It will not be popular, but ... you can save lives if you link diagnosis and treatment to the available resources. A good example is the work of the Breast Health Global Initiative (see <http://www.fhcr.org/science/phs/bhgi/>), who recommend screening unilaterally with one plate rather than with two plates in low-resource countries. The loss of sensitivity and specificity is not signifi-

cant, but it saves a great deal of money! This is cascade thinking.

Here are my two favorite cascade-relevant quotes—the first is about applying what we know already, and the second is from Bill Gates, at his recent Harvard lecture (7 June 2007) when he was talking about “cutting through complexity”:

- “Applying what we know already will have a bigger impact on health and disease than any drug or technology likely to be introduced in the next decade. But if disease is to be defeated, in addition to the undeniable need for new knowledge, existing knowledge must be applied in ways that will improve health care, especially in underprivileged situations.” (Pang et al., *Lancet* 2006;367:284–6.)
- “The AIDS epidemic offers an example. The broad goal of course is to end disease. The highest leverage approach is prevention. The ideal technology would be a vaccine that gives lifetime immunity with a single dose. So, governments, drug companies, and foundations fund vaccine research. But their work is likely to take more than a decade, so in the meantime, we have to work with what we have in hand—and the best prevention approach we have now is getting people to avoid risky behavior.” (Bill Gates, speech at Harvard, 7 June 2007; full text at <http://www.gatesfoundation.org/MediaCenter/Speeches/Co-ChairSpeeches/BillgSpeeches/BGSpeechHarvard-070607.htm>.)

The first quote encourages us to apply what we know already. In the second, Bill Gates encourages us to break down the complexity and to “work with what we have in hand.” This approach is at the heart of cascade thinking.

Cascades break down complexity by offering not just the highly complex gold standard, but also a series of options depending on the resources in hand. Both documents were discussed recently on the “Health-care Information for All by 2015” (HIFA2015) e-mail discussion group. The HIFA2015 campaign page is at [www.hifa2015.org](http://www.hifa2015.org). If you have 10 minutes a week left, it is worth subscribing to. They are serious, very focused, and they deserve support.

Today, the World Gastroenterology Organisation Guidelines Committee is well aware that guidelines written for New York may not be so useful in Africa. They are too complex and do not take account of the resources “in hand.” Let’s look at a few examples.

### **Cascades in colorectal cancer screening**

It might be all right for the New York Memorial Sloan Kettering Hospital—that great cancer-fighting institution—to suggest that persons who are at average risk for colorectal cancer should be screened using colonoscopy every 10 years from the age of 50 onwards, but colonoscopy is not so easily available in Africa. In such conditions, a screening colonoscopy only once in a lifetime might be more realistic. And what if only flexible sigmoidoscopy is available? Screening every 5 years is then the preferred option, but if it is not always available, then it can be done at least once in a lifetime. There are possibly many hospitals in which the only option is fecal occult blood testing (FOBT). In this way, we can take account of what is available.

### **Cascades in the treatment of esophageal varices**

Let’s look at esophageal varices. Turn yourself into a one-minute expert and step outside the room to do a quick search in the best sources of evidence. And apropos, what do you think of the idea that a busy clinician can find the best evidence for a particular case by stepping outside the room and doing a few quick searches—yes, this was suggested during Digestive Disease Week recently at the Society for Surgery of the Alimentary Tract (SSAT) postgraduate course. Am I alone in thinking this is a little far-fetched? The doctor as “clinical librarian”? A proper search standing up to evidence-based principles is a complex undertaking, and you, the clinician, don’t want to do it—just as you don’t want a librarian at your bedside placing your stent.

Anyway, here you are, you have now gathered all the information you think you need. You know now that the gold standard for treating esophageal varices is band ligation with concurrent intravenous infusion of a vasoactive drug. So far, so good. But wait a moment—what if you have no octreotide or terlipressin? Well, band ligation alone would do as well! What? No resources for that either? All

right then, you can still help your patient and decide on sclerotherapy, or perhaps a combination.

Enter a real low-income hospital with minimal resources. Now we are talking balloon tamponade. Balloon tamponade frequently does “stop” variceal bleeding, but this “treatment” has no lasting benefit (which banding and sclerotherapy do).

### **Cascades in endoscope disinfection**

The Endoscope Disinfection Guideline is a very successful joint effort by the WGO and Organisation Mondiale d’Endoscopie Digestive/World Organization of Digestive Endoscopy (OMED). Although the guideline (see <http://omge.org/globalguidelines/guide14/guideline14.htm>) does not actually use the term “cascade,” all of the elements of a cascade are already present in its distinction between an optimal, normal, and minimal approach for each stage of endoscope reprocessing: cleaning, disinfection, rinsing, drying, and storage. In this way, the guideline takes account of locally available resources. Not surprisingly, the minimal approach emphasizes cleaning and rinsing with (good quality!) water and soap.

### **Going beyond evidence-based medicine**

The search for evidence usually focuses on defining a gold standard using the latest tools and technologies, not on comparing old technologies with advanced technologies. In this sense, one could argue that the evidence-based movement is biased toward the West. This may be borne out by the fact that globally, less than 10% of the Cochrane reviews are written by people based in a developing country. Furthermore, many topics relevant to the developing world and addressing problems that affect large populations remain neglected, and there is also an important divide in access to and use of the Cochrane Library—in spite of HINARI (for a recent article on access to medical information in Africa, have a look at [www.biomedcentral.com/1472-6963/7/72](http://www.biomedcentral.com/1472-6963/7/72)).

One very good initiative to try and redress the balance a little was the creation of the Cochrane Developing Countries Network (CDCN) late in 2006 (<http://dcn.cochrane.org/en/scope.html>).



The free access at the point of use to the Cochrane Library in all of India, available as of early 2007, is another major step forward for evidence-based medicine (and can China be next, please?). But this is all about access to the “gold standard.”

By contrast, the WGO, with its global remit, has decided to focus on real-life solutions that take account of local resources and preferences. In addition to disseminating gold standards in gastroenterology, the WGO Guidelines Committee has decided to improve the usefulness of its guidelines through:

- Developing cascades that take account of resource levels—the gold standard is at the top, followed by a “hierarchical set of diagnostic or therapeutic techniques for the same disease or diagnosis, ranked by resources available.”
- Improving access through translation of all guidelines into French, Spanish, Portuguese, Mandarin, and Russian.
- Providing the “Graded Evidence” and “Ask a Librarian” services.

### **Cascade-based medicine**

Cascade-based medicine always has to take account of the gold standard for treatment and diagnosis. But in addition to that, it also has to identify other ways of achieving the best possible outcome, as it takes account of available resources. This is not just an intellectual journey—“applying what we know already will have a bigger impact on health and disease than any drug or technology likely to be introduced in the next decade”; it is an immense challenge for global public health, and for gastroenterology as well. ■

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# Gastroenterology and endoscopy in Afghanistan

R. Gugler and E. Wienbeck

## Background

In Germany, academic doctors have to retire at the age of 65. When he reached that age, Professor Martin Wienbeck had run the department of gastroenterology in a large community hospital for 15 years and was looking for a new opportunity to make use of his knowledge and pass it on to younger doctors. He transferred a large proportion of his financial resources to the Wienbeck Foundation for Medical Development.

## Policy of the Wienbeck Foundation

The goal of the Foundation is to provide medical help in low-resource areas. The concept is based on the “help for self-help” approach—i.e., providing aid in developing competence and structures for self-supporting medical care. So far, the projects have focused on gastroenterology and endoscopy in Afghanistan, but the work of the Foundation is not limited to these fields.

## Initial activities in Afghanistan

In 2002, Prof. Wienbeck traveled to Afghanistan, which had just been freed from the Taliban regime following 23 years of war and destruction. During this period, most qualified doctors had left the country, and medical care was almost nonexistent (Fig. 1). During his first visit to Kabul, Wienbeck met some open-minded Afghan doctors who were eager to expand their knowledge and skills in endoscopy but were restricted in their efforts by the lack of endoscopic equipment and disinfection materials.

One of the first steps for the Foundation was to obtain private sponsorship to establish the basic conditions for teaching to be carried out (e.g., with a computer, a projector, video materials, etc.). Fiberoptic instruments were used for routine endoscopic procedures in hospitals and private practice, and still are in use today. Video endoscopy was needed for teaching purposes, and a suitable workstation was purchased second-hand during the Digestive Disease Week meeting in Orlando, Florida, in 2003.

In cooperation with the German–Afghan Umbrella Organization for Medical Experts (*Dachverband des Afghanischen Medizinischen Fachpersonals*, DAMF) and with support from the German Academic Exchange Ser-



**Fig. 1** Kabul University Hospital in 2002.

vice (*Deutscher Akademischer Austauschdienst*, DAAD), Professor Wienbeck lived and taught in Afghanistan for several months each year in 2003, 2004, and during the spring of 2005. On 27 April 2005, he tragically lost his life in a car accident in the streets of Kabul while he was riding a bicycle, as he always used to do—using a bicycle is the fastest way to travel in the congested streets of the Afghan capital. After this, responsibility for the Wienbeck Foundation’s projects was taken over by Prof. Roland Gugler who, like Professor Wienbeck, had just retired. For each visit, he would stay in Afghanistan for 2–3 weeks to help carry on the projects and initiate new ones.

## Projects

*Endoscopy training for women doctors.* Professor Wienbeck’s work in Afghanistan started with an important project involving teaching and training female doctors in the basics of gastroenterology and endoscopy. Most women in Afghan society were unwilling to let a male doctor examine their intestines, and due to the specific rules made by the Taliban, the country did not have a single female doctor practicing endoscopy. There were four



**Fig. 2** Trainees with Prof. Wienbeck during an examination, July 2003.

women trainees, two of whom had lived in Pakistan during the Taliban period. The other two had remained in Afghanistan, but their training was poor and handicapped by the lack of even simple endoscopic accessories, poor hygiene, and frequent power cuts, requiring the use of a generator.

By the summer of 2003, their training was complete, including basic techniques in therapeutic endoscopy. These women trainees had to pass a final written and practical examination, after which they were allowed to practice endoscopy without supervision in the gastrointestinal endoscopy unit at Rabia-Balkhi Women's Hospital in Kabul, which was equipped by the Foundation. It is intended that these trainees should pass on their knowledge and skills to other women doctors in Kabul and elsewhere in Afghanistan (Fig. 2).

A young and very committed Afghan gastroenterologist, Dr. Khawaja Quamaruddin Sediqi, was a great help during this project. He assisted in interpreting, teaching, and supervising the trainees. He was involved in every project. As a result, his own knowledge of gastroenterology and skills in endoscopy also benefited. He became essential to



**Fig. 3** The entrance to the Wienbeck Endoscopy Center at Ali Abad Hospital, Kabul, July 2005.

all the training activities, to the point that he is now planning and conducting training courses mostly by himself. He shares these responsibilities with the other members of the Wienbeck Foundation.

*The first therapeutic endoscopy center in Afghanistan.* This center, equipped by the Foundation, opened in May 2004. Professor Wienbeck introduced therapeutic endoscopy techniques there, such as ligation of hemorrhoids and esophageal varices, balloon dilation of the esophagus, injection therapy for bleeding ulcers, insertion of plastic esophageal stents, and polypectomy. The center has now been given official status as the "Wienbeck Endoscopy Center" (Fig. 3).

*Continuing education for provincial cities.* A new project—initiated by the Ministry of Public Health and again supported by the DAAD—was started in 2004, to include gastroenterologists from the major provincial cities. After a written and oral test to prove their qualifications, five doctors from different provincial towns took part in a training program in Kabul for 1 year. This course covered theoretical and practical aspects of all the major fields of gastroenterology and diagnostic endoscopy. By the end of the course, the participants had achieved competence in gastroenterology and had learned to perform endoscopy in the upper and lower gastrointestinal tract. In addition, they learned how to write meaningful endoscopy reports using internationally recognized disease classification standards. The candidates had to pass a further examination, after which they received a diploma signed by the Minister of Public Health.

Prof. Wienbeck had previously signed an agreement with the Ministry of Public Health to establish endoscopy units in the trainees' hospitals in Herat, Mazar-i-Sharif, and Kunduz, with the necessary equipment. Since each gastroenterologist could only work part-time in the hospital,

devoting the rest of his time to private practice to support his family, each of them had to sign a commitment to work for a minimum of 5 years in the hospitals in return for their training. In 2005 and 2006, a number of visits were arranged to assess the endoscopy units in the provincial cities and support them technically and organizationally. A refresher course was organized in early 2006 for all of the doctors who had completed their basic training in diagnostic endoscopy. In addition, a course on safe endoscopy was given, emphasizing disinfection and other safety procedures (Fig. 4).



Fig. 4 Participants in the refresher course, February 2006.

**Therapeutic endoscopy.** In February 2007, a 2-week course on therapeutic endoscopy was held in Kabul for the endoscopists who had already completed the 1-year training course in diagnostic procedures and had attended the refresher and safe endoscopy courses. Eleven participants were instructed in the theory and practice of injection therapy for upper and lower gastrointestinal tract bleeding, ligation therapy for esophageal varices, dilation and stenting of stenotic esophageal malignancies, removal of foreign bodies in the upper gastrointestinal tract, and ligation therapy for hemorrhoids. These were procedures covering the most urgent needs in the region, taking into account

the limited financial resources and restrictions relating to the repair of damaged instruments. The instructors were Dr. Sediqi and Dr. Ahmadiar, an Afghan gastroenterologist living in Germany.

**Cooperation with the Ministry.** A memorandum of understanding between the Wienbeck Foundation and the Afghan Ministry of Public Health was drawn up and signed by Prof. Gugler and Ministry representatives. It defines the rights and duties of each party with regard to the further development of gastroenterology in the country. This was necessary in order to put the Foundation's efforts on a solid basis.

**Visit of gastroenterologists to Germany.** The DAAD granted a fellowship to Dr. Sediqi to allow him to spend several weeks in each of three large endoscopy units in Augsburg and Düsseldorf in Germany. In 2006, after attending a 2-week, high-level postgraduate course given by the Dutch Society of Gastroenterology, two Afghan doctors also spent 3 weeks in Düsseldorf, Germany, to expand their knowledge in two endoscopy centers.

**Projects for the near future.** A second course in therapeutic endoscopy is scheduled for September 2007. The goal is to consolidate and extend the participants' previously acquired knowledge. A 4-week visit to endoscopy centers in Germany by three previously trained female gastroenterologists is planned. Due to constraints on the activities of women in Afghan society, it is still a challenge to offer them equal opportunities for academic training.

Gastroenterology and gastrointestinal endoscopy have already reached a remarkable level in Afghanistan, but continuing international support will be needed in the years to come to ensure that the specialty can become truly independent and self-sustaining there.

#### Acknowledgment

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Endoscopy nurse.

Gastroenterology has been practiced in the Sudan for just over half a century now. It is growing at a rapid pace, and most of the modern procedures are now being conducted. More endoscopy units have opened in the capital city, as well as in remote areas. However, it is a male-dominated specialty, and the role of women is far behind what we would expect.

Women constitute approximately 15,600,000 out of a total Sudanese population of 31,600,000. Women play a key role in the economic field, representing 26.5% of the total labor force, up from 7% of the workforce in the 1960s.

Historically, girls' education in the Sudan has been very rudimentary—frequently provided by a *khalwa*, or religious school, in which Quranic studies were taught. Such schools did not prepare girls for the secular educational mainstream, from which they were virtually excluded. This was more a phenomenon of cultural attitude, rather than being religious. In Islam, seeking knowledge and education is an obligation for both sexes.

The formal education of women in Sudan dates back to the early 20th century. In 1907, Sheik Babiker Badri established Sudan's first private school, a school for girls. The Babiker family's involvement in women's education resulted in the establishment of Ahfad University for Women, as they worked to provide quality education for women and sought equality for them in all areas of Sudanese society. There are now more women than men at university in Sudan. Women presently comprise 62% of students in higher education, compared with 47.2% in 1995. Ahfad University has over 4600 students. Tens of thousands of Sudanese women study at many of Sudan's other universities. Women in Sudan are moving into many areas of society from which they were traditionally excluded—e.g., factory work, government bureaucracy, and the professional fields—and this gradual transformation has met with little resistance. While most women work in the agricultural sector, an increasing percentage also work as professionals, serving as ambassadors, university professors, doctors, lawyers, engineers, senior army officers, journalists, and teachers. There are, for example, women major-generals in the police. The first school for midwives in Africa was opened in the Sudan in 1921.

# Women in Gastroenterology in Sudan

H. Mustafa E. Mohammed



Politically, women are also well-represented. Sudanese women became involved in nationalist politics from the mid-1940s onwards. Women secured the right to vote in 1953. In Sudan, women have an unfettered right to

elect and be elected in presidential, federal, state, and local elections.

The number of female medical school graduates is increasing, as well as the numbers of those engaging in postgraduate medical studies. Unfortunately, this is not reflected in the subspecialty sector, particularly in specialties involving interventional procedures such as cardiology, gastroenterology, etc. I would attribute this to the social burden on women, which does not allow them sufficient time to engage in subspecialty training, which is time-consuming and requires travel abroad. The lack of women specialists in gastroenterology in Sudan has nothing to do with the physical or intellectual capabilities of female doctors.

In Sudan, women comprise around 15% of all gastroenterologists. A few of them practice abroad, in the Gulf and in the UK. This statistic in my opinion is more or less the same everywhere in Africa, Europe, or the United States, as we observe when we attend gastroenterology congresses and workshops. Women gastroenterologists in Sudan perform all the same diagnostic and therapeutic procedures as their male counterparts. In fact, some are pioneers—e.g., Dr. Salma Barakat, who was the first gastroenterologist in Sudan to perform endoscopic ultrasonography.

My personal interest in this field goes back to the time when I was a fifth-year medical student, in 1994. Fate took me to a small endoscopy room in the main teaching hospital in Khartoum. At that time, only fiberoptic endoscopes were available, but the procedures attracted my interest, and I made regular visits to the unit. Later on, after graduation and during internship, I worked for 3 months as a house officer in a specialized gastroenterology unit where I had seen more advanced equipment and procedures. At that point, I made the decision to become a gastroenterologist. Although my journey into the field of gastroenterology is only 7 years old, it has involved hard work, devotion, and sacrifice, although I will never regret it. "I have a dream" of becoming a leading figure in gastroenterology, representing all my female colleagues in this field.

In conclusion, I would like to cast some light on the personality of the Sudanese woman by quoting Professor



Dr. Salma Barakat at the EUS unit.



Dr. Suzan Alhakim at the ultrasound unit.

Carolyn Fluehr-Lobban, who is an acknowledged authority on Sudanese life, especially with regard to women: "When I began working in the Sudan in 1970, I was struck by the sharp contrast between the passive and controlled Muslim woman I had expected from my readings about Arab and Islamic society, and the reality which I encountered in my relationships with Sudanese women. These women presented a strong exterior with a certain toughness of mind and spirit combined, like most Sudanese, with dignity and generosity ... In the public arena the movement and activity of women in the urban areas is much less circumscribed

than in the past or in more conservative Muslim societies. In the rural areas the confinement of women has rarely been the norm ... Veiling and confinement are features of urban bourgeois life in the Arab world, and the former is not a cultural tradition in Sudan." ■

**H. Mustafa E. Mohammed, MD**

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## Gastroenterology in Peru: unity and decentralization

O. Frisancho Velarde

When the present administration of the Peruvian Society of Gastroenterology began its work in January 2005, the other Peruvian associations related to our specialty were invited to join us for the sake of unity and decentralization. There was immediately an enthusiastic response to work together to achieve these goals. The idea was to build a kind of gastroenterological corporation in order to carry out our activities; this has given us great strength. The basic principle is to share continuing medical education activities, while at the same time respecting institutional profiles and local autonomy.

The best evidence that this was a good initiative was the extraordinary support received from the pharmaceutical industry for the 22nd Peruvian Congress on Digestive Diseases held in Lima, where we had a record number of booths—more than 45—and important sponsorship for the scientific awards for the best abstracts, video presentations, etc.

The “XX Congreso Nacional de Enfermedades Digestivas” was held at the same time as the Sixth Peruvian Hepatology Conference and an international course in nursing in gastroenterology. It was designed to be the scientific and social event of the year for the members of the Peruvian Society of Gastroenterology, and for the first time it was held together with the Peruvian Association for the Study of the Liver and the Peruvian Society of Nurses in Gastroenterology and Gastrointestinal Endoscopy. During this large meeting, which was a great success, our Society’s sections for pediatric gastroenterology and endoscopy society held their respective courses. The Peruvian–Japanese Endoscopy Club also held its international course. The great success of all these activities, held simultaneously in the Sheraton Hotel in Lima in the 54th year of the Society’s existence taught us a great lesson—that it is possible and, indeed, better to work together to achieve common objectives.

Decentralization has also been an important feature of this undertaking. During the last 2 years, 10 regional courses have been organized with guests from abroad, in Cusco (2), Cajamarca, Arequipa, Tacna, Trujillo, Chiclayo, Huancayo, and Lima (2). We also had an opportunity to actively participate in the Peru–Chile International Course in Iquique, the Andean Meeting of Experts in Gastrointes-



Dr. Oscar Frisancho and Prof. David Carr-Locke at the inauguration of the 22nd Peruvian Congress on Digestive Diseases in Lima, Peru.

tinal Dysfunction in Margarita, Venezuela, and the Fourth National Meeting for Trainees in Gastroenterology.

All of these activities have strengthened our four regional branches in Trujillo, Arequipa, Ica, and Chiclayo, and we expect to have more affiliates soon in Cuzco, Cajamarca, Junín, and Tacna, due to the considerable enthusiasm of the gastroenterologists in these areas.

The great interest in joining the Society shown by young gastroenterologists is strong evidence that our present trajectory towards unity and decentralization is working. A Membership Directory has been published, listing the names and addresses of the 560 members, and this will facilitate communication between members for various purposes.

We are very proud of our web site, which receives 25,000 visits every month from all over the world. It provides interesting information, including the Spanish versions of the World Gastroenterology Organisation (WGO) guidelines. We would invite everyone to visit the site ([www.socgastro.org.pe](http://www.socgastro.org.pe)).

We have been working hard to promote scholarship. Our young physicians have had an opportunity to train

and complete their professional and academic education in France, Sweden, Spain, Bolivia, Chile, Argentina, Brazil, and Japan. The administrative area has also been modernized, and the Society now has an efficiently run office.

Our informative bulletin, *La Gaceta Gastroenterológica*, is published regularly, and we have maintained the independence of the journal, the *Revista de Gastroenterología del Perú*. This national journal is the only Peruvian journal cited on Medline. Last year, we celebrated the journal's 25th anniversary by holding an international course.

We have accepted kind invitations from the Peruvian Medical Association, WGO, Organisation Mondiale d'Endoscopie Digestive (OMED), Asociación Interamericana de Gastroenterología (AIGE), and other scientific societies. The Society is recognized by the Medical College of

Peru and other Peruvian scientific societies as a model of an excellent scientific society.

There are many tasks that still need to be completed in accordance with the Society's strategic program between 2006 and 2011—e.g., protecting endoscopy as a procedure exclusive to gastroenterologists and establishing a better definition of the competences and skills of the specialist in gastroenterology. ■

**O. Frisancho Velarde, MD**

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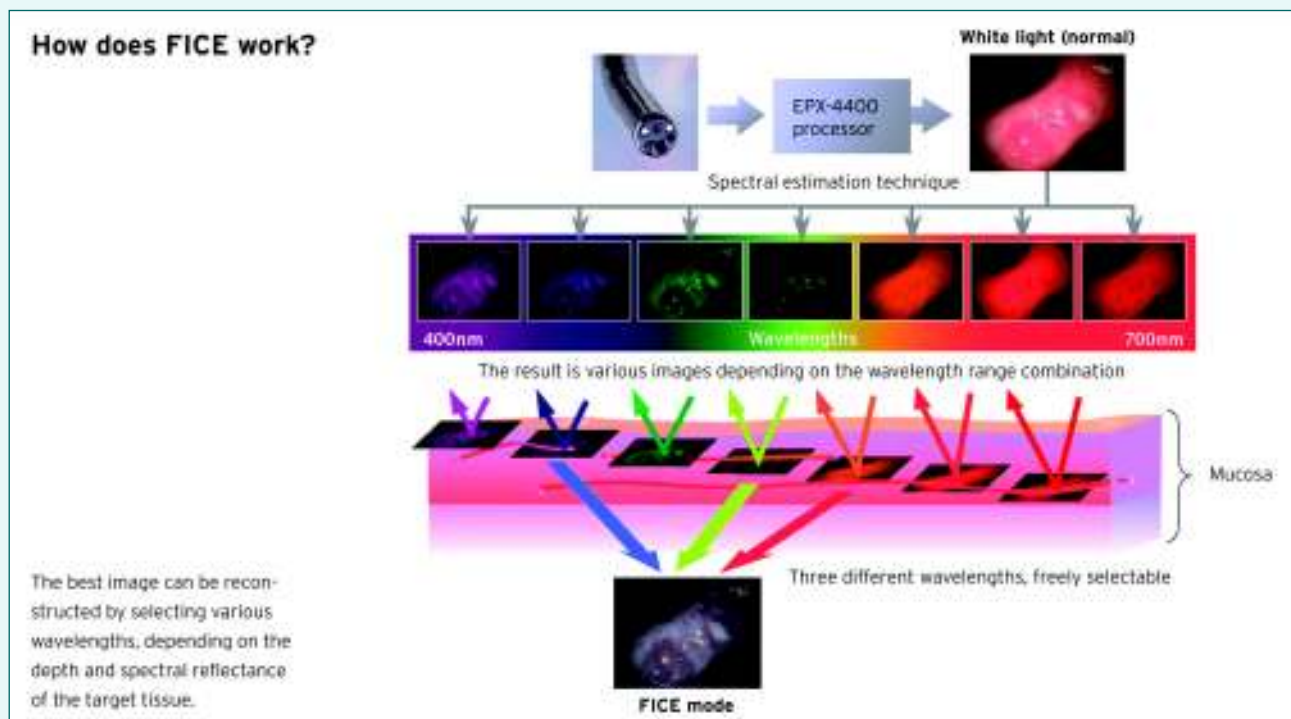
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