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## Education and training

# Main priorities for the development of geriatric oncology: A worldwide expert perspective

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On behalf of the International Society of Geriatric Oncology (SIOG)

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### ABSTRACT

**Objective:** The world population is aging rapidly, thanks to improvements in nutrition, sanitation, disease treatment and prevention (notably for infectious diseases), and better economic conditions. As aging is the main risk factor for cancer, its incidence follows suit. This represents a worldwide challenge and addressing it correctly will require a vast international effort and clear priorities.

**Methods:** The International Society of Geriatric Oncology (SIOG), a multidisciplinary society of experts in the field, decided to identify those priorities. The SIOG National Representatives (NRs) were asked first to identify the 10 highest priorities to address on a worldwide scale. Then, the NRs were asked to identify how these priorities were/could be implemented in their country. A writing committee assembled and edited the results.

**Results:** We identified 3 key areas of priority: education, clinical practice, and research. Education should be targeted at both the professional and the population levels. In clinical practice, pilot models of multidisciplinary collaboration should be expanded first to key reference centers, and a 2-step approach to screening and evaluation should be used to optimize resource use. In research, several strategies can render trials more relevant for older patients. These priorities are fully detailed in a monograph<sup>1</sup> that can be viewed online at [www.siog.org](http://www.siog.org) or ordered from [siog@genolier.net](mailto:siog@genolier.net). This article explores the rationale and general academic and public health implications of these priorities.

**Conclusions:** These priorities represent an expert consensus with potential to guide education, clinical practice, and research to improve the care of older cancer patients throughout the world.

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## 1. Introduction

Thanks to the global improvement in health care and living conditions, the world's population is aging. In developed countries, half of the cancers already occur in patients aged 70 and older, so geriatric oncology is rapidly coming to the foreground of oncology practice. In booming Asian nations, such as South Korea or Japan, the aging trend is particularly striking. In fact, by 2050 the majority of older persons will live in developing countries. As older patients have a very variable health status, the need for proper integration of an oncologic and a geriatric approach has become increasingly important. Incorporating geriatric principles into routine oncology care will serve to optimize the treatment and reduce the functional impairment of older cancer patients and the associated social and personal costs. Given the size of the problem, governmental health agencies, international and local organizations, academic institutions, and the medical community at large will need to identify and target the most pressing issues. Expert input is invaluable in this process, and therefore SIOG decided to create a consensus statement of the top priorities within the field of geriatric oncology, after consultation with members from around the globe<sup>4</sup>.

## 2. Methods

Over 2009 and 2010, SIOG asked its national representatives (see list in [Appendix A](#)) to identify the top 10 global priorities in the field of geriatric oncology. Their answers were collected by a writing committee and a consensus was built. A second round of questions was then circulated asking the representatives to comment on how practically these priorities would translate more concretely in their national setting. The writing committee then assembled these answers and redacted a region by region translation of the 10 global priorities. All national representatives had the opportunity to review the final manuscript.

## 3. Results

The 10 priorities are listed in [Table 1](#), and can be organized in three key domains: education, clinical practice, and research.

### 3.1. Education

Education should be targeted at both the population and the professional levels. We will need to learn managing the rapid aging of the world population and its accompanying hundreds of millions impending cases of cancer. A broad development of education concerning the needs of older cancer patients is

therefore necessary. Life expectancy has significantly increased thanks to improved health care, but is often underestimated by physicians and patients. For example, whereas the life expectancy at birth in their country is often known by inhabitants, few people realize that an average 65 year old can expect to live another 20 years, and that in developed countries an average 80 year old has a 30 to 40% chance of reaching 90 years of age<sup>2</sup>. The specific educational needs might vary from country to country. In many countries, there is undertreatment of older cancer patients due to the belief that treatments won't be effective or will be too toxic in the elderly. As therapeutic options diversify rapidly in oncology (e.g. targeted therapies, local treatments for liver metastases, stereotactic radiation therapy) and both supportive care and palliative care improve, it is important to make physicians, authorities and the general public aware that cancer treatment is not a one-size-fits-all proposition and that many approaches can be adapted to an older person. Furthermore, by preventing or delaying functional dependence, appropriate cancer treatments can contribute to decreasing the costs engendered by the cancer and its related complications.

As cancer is becoming the first cause of mortality in the elderly, we need to make adequate room for it in our training programs for physicians, nurses, and allied health professionals, especially those involved in geriatrics. More emphasis on the principles of cancer care and follow-up will be required in the graduate and post-graduate continuing education of every physician.

### 3.2. Clinical Practice

Older adults represent the majority of cancer patients and survivors in developed countries and a rapidly growing proportion of patients in developing countries. There is therefore a dual need for: a) more specialized geriatric oncology units, and b) similar to cardiovascular disease or diabetes, a need for general education of oncologists on the principles of geriatric oncology. One important principle is the need for adequate assessment of older adults with cancer. Increasingly a two-step approach to assessment is emerging in clinical practice. Initially some form of short screening tool is recommended for every new older cancer patient and, for the patients with a positive screening test, a more thorough multidisciplinary team assessment and management. An adequate assessment with an integrated intervention plan is the cornerstone of appropriate care of older cancer patients. Geriatric oncology units and programs have been developing rapidly, in different formats, over the last decade. It is the strong conviction of the SIOG experts that each academic center and major cancer center should have a multidisciplinary geriatric oncology team. Such units and programs should also conduct elderly-targeted research. A strong priority for the development of clinical practice is to develop practical

**Table 1 – Worldwide priorities to address cancer in the elderly.**

SIOG 10 priorities initiative: general priorities

*Education*

1. Increase public awareness of the worldwide cancer in the elderly epidemic and the need for a specific approach to address the problem
  - Political institutions (Health ministries, international organizations)
  - Medical societies
  - Advocacy networks, media, to develop a more positive image of older cancer patients
2. Integrate geriatric oncology in the curricula for medical and nursing education, both during studies and post-graduate education
3. Address the shortage of specialist oncologist/geriatricians and allied health staff in geriatric oncology.
  - Develop/support specific training programs
  - Increase/develop funding to foster academically oriented specialists able to address the populations not targeted by traditional oncology studies

*Clinical practice*

4. Develop interdisciplinary geriatric oncology clinics, especially in academic institutions and comprehensive cancer centers
5. Integrate geriatric evaluation (including comorbidities) into oncology decision-making and guidelines
6. Address issues of access to care, including the needs of the caregiver

*Research*

7. Develop, test, and disseminate easy screening tools to enable proper referrals to multidisciplinary clinics and encourage integrated approaches between oncologist and geriatricians
8. Create a clear and operational definition of vulnerability/frailty applicable to oncology
9. Increase the relevance of clinical trials for older patients:
  - Require large phase III trials to oversample older cancer patients in order reach a meaningful percentage of their cohorts, and to structure their analysis to provide results specific and pertinent to this population
  - Extend phase II and III trials to patients with high levels of comorbidity or functional impairment with stratified accruals or extension cohorts
  - Design specific trials for older cancer patients
10. Promote multidisciplinary, basic/translational research on the interface of aging and cancer.

ways to integrate geriatric assessment and interventions into oncology clinical guidelines. This will help to standardize an evidence-based approach to the care of older patients.

Integrated care of the older cancer patient will require the training of more geriatricians and certified geriatrics professionals who unfortunately are in very short supply in all countries. This includes creating incentives for the practice of geriatrics: for example, in the United States, Geriatrics presently is the only Internal Medicine subspecialty where additional training does not improve the subspecialist's income. Solutions have been proposed<sup>3</sup>. If we want to provide access to quality care for patients and family, elements such as proper insurance coverage, home support for caregivers and patients, and enough specialized units to cover the nation's territory will be a necessity.

### 3.3. Research

The elderly are a population that has long been underserved in cancer research. The reasons are several, but it is crucial that the trend be changed. Beside the epidemiologic challenge of an aging population, older patients from at least two continents are interested in standard therapy options<sup>4</sup>. Yet, the standard approach to clinical trials (i.e., the traditional phase I/II/III general study) has consistently underaccrued older patients, and those who are included are a healthy selected subgroup<sup>5-7</sup>. Given the high prevalence of comorbidity in the elderly, it is an ethical necessity that new approaches be developed to study treatments appropriate for the bulk of our target population, especially in cooperative groups. Original study designs such as studies specifically targeting

older patients, studies with stratified accrual based on predictors of treatment toxicity or frailty indexes, or requiring that a significant subgroup of older patient be included, should be developed.

This said work remains to be done on the tailoring of geriatric instruments to the oncology patients, and the specifics of decision making in this field. For example, geriatric attempts at defining frailty usually aim at identifying a population at high risk of dying or becoming dependent in the short term. However, a definition that would address end-points such as the ability to tolerate combined chemo-radiation, chemotherapy, or surgery would be very helpful. Of particular interest in oncology is the identification of the vulnerable patient: the patient who appears healthy enough for active treatments to be considered, but is at high risk of decompensating. As refining these definitions would be crucial in the performance of clinical trials and in optimally guiding individualized therapy, we list it as a priority.

Another research priority, in the era of personalized cancer care relying heavily on genomics, epigenomics, proteomics and metabolomics, is to harness the synergistic potential of basic and translational research in both aging and cancer. In many ways, the development of a cancer can be defined as "senescence gone bad". A challenge of whole genome analysis for example is the overwhelming quantity of data to sort out. Separating the "locomotive" mechanism from the wagons is difficult. We believe that if a mechanism demonstrates a role in both aging and cancer, that mechanism is more likely to be a key mechanism in the cellular control/transformation process. This might spare research from pursuing several blind alleys. In the same line of reasoning, most cancer therapies are tested in young mice and other animals prior to be launched into

phase I studies. The yield of phase I studies in effective and safe drugs is disappointing to say the least. We might learn more about response rates and toxic effects by investigating new drugs in old animals, but unfortunately this approach has been poorly studied so far.

#### 4. Conclusion

Cancer in older patients is not an issue limited to developed countries but is rapidly becoming a worldwide phenomenon. Recently, the WHO emphasized that chronic illnesses, cancer among them, have surpassed infectious diseases as a global threat: non communicable diseases accounted for 63% of global deaths in 2008, and nearly 80% of these occurred in low and middle-income countries<sup>8</sup>. In its 2008 World Cancer Declaration, the International Union against Cancer (UICC) established a number of targets that they thought should be achieved by 2020. One of these targets was that "Access to accurate cancer diagnosis, appropriate cancer treatments, supportive care, rehabilitation services and palliative care will have improved for all patients worldwide"<sup>9</sup>. With the 10 priorities initiative, SIOG provides a framework of concrete issues that should be addressed to enhance the development of the field of geriatric oncology<sup>1</sup>. The ultimate goals are to improve the outcome of our older cancer patients, and to optimize the use of health care resources.

#### Disclosures

The authors have no potential conflicts of interest to disclose.

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Conception and design: ME, JPD.

Data collection: See Appendix A.

Analysis and interpretation: ME, MA, RA, LB, JPD, CS, HW, GZ.

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#### Appendix A

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#### REFERENCES

1. Extermann M, Aapro M, Audisio R, Balducci L, Droz JP, Steer C, Wildiers H, Zulian GB, on behalf of SIOG. The SIOG 10 priorities initiative. Genolier, Switzerland: International Society of Geriatric Oncology; 2011.
2. Walter LC, Covinsky KE. Cancer screening in elderly patients: a framework for individualized decision making. *JAMA* 2001;285(21):2750-56.
3. Institute of Medicine. Retooling for an aging America. Building the healthcare workforce. The National Academies Press; 2008.
4. Extermann M, Albrand G, Chen H, Zanetta S, Schonwetter R, Zulian GB. Are older French patients as willing as older American patients to undertake chemotherapy? *J Clin Oncol* 2003;21(17):3214-19.
5. Hutchins LF, Unger JM, Crowley JJ, Coltman Jr CA, Albain KS. Underrepresentation of patients 65 years of age or older in cancer-treatment trials. *N Engl J Med* 1999;341(27):2061-67.
6. Trimble EL, Carter CL, Cain D, Freidlin B, Ungerleider RS, Friedman MA. Representation of older patients in cancer treatment trials. *Cancer* 1994;74(7 Suppl):2208-14.
7. Lewis JH, Kilgore ML, Goldman DP, Trimble EL, Kaplan R, Montello MJ, et al. Participation of patients 65 years of age or older in cancer clinical trials. *J Clin Oncol* 2003;21(7):1383-89.
8. World Health Organization. World Health Statistics. [http://www.who.int/whosis/whostat/EN\\_WHS2011\\_Full.pdf](http://www.who.int/whosis/whostat/EN_WHS2011_Full.pdf). 2011 Accessed May 18, 2011.
9. UICC. World Cancer Declaration. <http://www.uicc.org/sites/uicc.agenceinovae.com/files/wcden09low.pdf>. 2008 Accessed May 18, 2011.