SYSTEMIC THERAPY TASK FORCE REPORT

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EXECUTIVE SUMMARY

The delivery of systemic therapy to cancer patients in Ontario is threatened by a scarcity in the number of specialized people needed to provide this type of cancer care. This scarcity applies to all disciplines that make up the team of health care professionals who assess patients for, and administer systemic therapy to cancer patients—medical oncologists, family physicians, nurses, pharmacists and pharmacy technicians. In addition, cancer centres and hospitals providing systemic therapy are faced with an escalation in the costs of conventional chemotherapy drugs, even though the New Drug Funding Program has been successful in ensuring that patients who could benefit from new (and expensive) drugs receive these drugs. The cost drivers include the increasing numbers of cancer patients, new and effective treatments, broadening indications for the use of systemic therapy, and the increasing expectations of well-informed patients for state-of-the-art therapy.

The Systemic Therapy Task Force was established to address these issues to make recommendations on how to avert a crisis in systemic therapy, which is widely perceived to be “On the Brink”. The Task Force membership was inclusive of representatives from the various disciplines involved in the care of patients who require systemic therapy for curative and palliative purposes. The care providers involved were drawn from both within and outside the cancer system and included family physicians, medical oncologists, nurses, nurse practitioners, pharmacists and, importantly, patients with experience in the cancer system. Representatives of the MOHLTC participated in a workshop on Innovative Care Delivery Strategies.

The Task Force Report provides recommendations on workload standards for the key care providers. To achieve these standards, the Task Force report recommends an expansion of the training program for medical oncology specialists in the province, as well as recruitment strategies to attract medical oncologists from elsewhere in the country and from outside the country. Similarly, it recommends training and recruitment strategies to augment the number of nurses, pharmacists and pharmacy technicians to achieve the recommended workload standards. The Task Force also recommends that health care professionals work in new and different ways as part of a team of health care providers. Because of the shortage of medical oncologists, it is important that their skill sets be used optimally and that other health care professionals who can provide follow-up care, supervision of routine chemotherapy and other tasks, assume these responsibilities within the continuum of care. The Report recommends that clinical associates (general practitioners with interest and expertise in cancer care) be accepted as an important component of the systemic therapy program team and that their numbers and training be enhanced. The Report also recommends expansion of the nursing role, including the introduction of nurse practitioners and other advanced practice nurses into the systemic therapy care delivery model. Similarly, the pharmacists’ role can be expanded to provide more clinical
services and the technical component of chemotherapy preparation can be delegated exclusively to pharmacy technicians.

The Task Force identified an urgent need for a volume-based formula that addresses the complexity of the Systemic Therapy Program. The formula would have to be flexible enough to account for different delivery models across the province, rapid changes in practice and the availability of key human resources in different locales. It was clear to the Task Force that funding for drugs should be outside of any volume-based funding formula, due to the rapid and often unpredictable introduction of new and expense agents. The volume-based funding formula should be applicable both within and outside the formal system. This will require that date of the same high quality as is available from CO be collected from the other institutions involved in system therapy delivery in order to guide the Ministry’s funding for this form of cancer therapy.

The Task Force, whose membership included community-based oncologists, was unable to find evidence that there is a capacity for substantial relocation of cancer patients to the community. Anecdotally, those providing care in the community identified the same issues of excess patient load and fiscal constraint within their institutions. Expanding caseload and cost issues threaten the quality of patient care outside CCO as well. In the absence of hard data, however, it was impossible for the Task Force to present concrete evidence to this effect. CCO invites the Ministry of Health and Long-Term Care to appoint an independent investigator to determine whether there is any extra capacity available inside or outside of CCO and PMH to absorb the growing systemic therapy caseload.

With prompt attention to the Systemic Therapy Task Force’s recommendations for workload standards and the recruitment of key people to provide care to cancer patients, and with sufficient funding of both new and old drugs, a crisis can be averted. Without such prompt attention, the looming crisis anticipated in the “On the Brink” position paper will be transformed into a crisis as grave as that which has been encountered by the Radiation Therapy Program.
**Introduction**

The Systemic Therapy Task Force (STTF) was established to address the looming crisis in the ability to deliver systemic therapy to patients with cancer in the province of Ontario. Three growing and converging trends are responsible for this emerging crisis.

- **a)** an increasing caseload of patients, with high expectations and demands, who require systemic therapy;
- **b)** a sharp increase in the number of effective anticancer and supportive care drugs; and
- **c)** expanding indications for chemotherapy drug usage, including adjuvant therapy with curative intent.

The New Systemic Therapy Drug Program has grown in scope and funding on the strength of evidence of efficacy from clinical trials. But funding from government for this program in support of new anticancer drugs has not been matched by funding for the human resources necessary to deliver the drugs or for the supportive care of the patients receiving treatment. Furthermore, older drugs, not covered by the New Systemic Therapy Drug Program, are increasingly used for new indications based on new evidence. At the same time, the use of older drugs is increasing because of the growing caseload of patients with common cancers, such as breast and colon cancer. Taken together, these trends are severely straining the limited resources of regional cancer centre and hospital operating budgets. Many of these health care facilities now have operating deficits and this, in turn, is creating pressure that is increasingly limiting access to patient care.

**Mandate and Methods**

The Terms of Reference for the Task Force, its subcommittees and their membership are attached as Appendix A. The STTF held 2 meetings of the full Task Force, a one-day workshop and 10 meetings/teleconferences of its subcommittees. These meetings focused on the roles and workload standards for medical oncologists, clinical associates, oncology nurses and pharmacists, as well as training, retention and recruitment issues. Each of these subcommittees had representatives from Cancer Care Ontario, Princess Margaret Hospital and community facilities providing systemic therapy. In addition, each subcommittee had representatives from other disciplines and community representatives. Ad hoc committees were also established to make recommendations concerning activity level reporting and workload based funding. In total, 122 people participated in the work of the Systemic Therapy Task Force.

The Systemic Therapy Task Force has identified the current, urgent human resource needs for medical oncologists, clinical associates, nurses, pharmacists and pharmacy technicians within the formal cancer system and, to the extent possible, across the province based on workload standards. It commissioned research on the extent of burnout amongst care providers in the Systemic Therapy Program and the researchers have submitted their findings for publication in the Canadian Medical Association Journal. The STTF has proposed incremental steps to achieve recommended workload standards and strategies to recruit and retain health care professionals. It has addressed the training program needs for each of the health care disciplines. It has also
suggested innovative strategies for care delivery, which if implemented incrementally, will redistribute workload amongst providers within the program to ensure that high quality, timely services are delivered to patients by appropriately trained care providers. Finally, management issues, including enhancements to the workload data and activity level reports to effectively plan and manage the Systemic Therapy Program, workload based program funding and potential efficiencies have been addressed.

The work of the STTF was driven by data, which was derived from a variety of sources:

- Current number of incident cases, incident case trends since 1990 and projected future cancer burden: Ontario Cancer Registry
- Activity Levels for Systemic Therapy from 1994 to 1996, including new cases to systemic therapy by location (RCC, hospital or satellite facility) and disease site, new treated cases by site and location, visits for parenteral and oral chemotherapy, chemotherapy suite visits and acuity (time) of chemotherapy preparation and administration: CCO Oncology Patient Information System (OPIS) (selected data presented in Appendix B)
- Proportion of the New Systemic Therapy Drug budget spent within the formal cancer system and in the community: CCO’s Managed Systemic Therapy Program
- Number of full time equivalents (FTEs) in Medical Oncology, FTE consultants, clinical associate positions, nurses in chemotherapy treatment units (CTU) and clinic modules, pharmacists and pharmacy technicians: OPIS data confirmed by RCC CEOs and/or Heads of Medical Oncology
- Current number of medical oncology trainees in Ontario: CCO/PMH Postgraduate Training Committees
- Psychological health of systemic therapy workforce and satisfaction with quality of work life: The CCOPE Study led by Dr Eva Grunfeld and the Supportive Care Research Unit at McMaster University (Appendix C)

Unfortunately, given the lack of access to data of high quality for institutions outside of CCO, including Princess Margaret Hospital, recommendations for the whole province have to be based on expert advice and extrapolations from CCO data (proportion of new drugs used within and outside of CCO). Recommendations concerning enhanced data collection that is harmonized with that of CCO are addressed latter in this report. If patient needs are to be met, such data are essential for the future planning and optimized management of systemic therapy delivery within the province of Ontario.

**Confirming “On the Brink”**

At the beginning of the Systemic Therapy Task Force's work, a position paper "On the Brink - the Looming Crisis in Systemic Therapy" captured the concerns of those working within the program and identified reasons for the increased workload and demands on those providing care. Although all members of the STTF agreed that the position paper captured the essence of the issues and the intense concerns of providers, no research had been undertaken to systemically document whether the systemic therapy program was truly “on the brink”.
In order to have high quality research evidence on which to base its recommendations, the Task Force arranged for an independent study of systemic therapy providers’ psychological well being and quality of work life. The Cancer Care in Ontario Professional Employees (CCOPE) Study asked providers to complete questionnaires that measured the level of psychological distress and burnout within the systemic therapy workforce. In addition, focus groups were held in five regional cancer centres, as well as the Princess Margaret Hospital, to obtain qualitative data on the issues being confronted by the Systemic Therapy Program. From the focus groups, all health care professionals identified that their greatest source of job satisfaction was patient care and patient contact. However, all levels of staff at every center stated that patient care is suffering and that they no longer have the time or resources to treat patients with the care they need and deserve. Concern and frustration was expressed over the deterioration in the quality of care as reflected in long waiting times in clinics, inability to book tests or obtain results and the inability to offer patients effective new therapies.

The data from these surveys and focus groups clearly support the concern that the program is "on the brink". In fact, a very high level of burnout was noted in the physician and nursing group: 54% of medical oncologists and 36% of nurses have high levels of emotional exhaustion; 24% of medical oncologists have high levels of depersonalization and 51% of medical oncologists and 60% of nurses have low levels of personal accomplishment. These observations raise concerns about the quality of care that is being delivered. The survey results identified that, overall, 37% of employees (41% of medical oncologists and 31% of nurses) have seriously considered leaving cancer care. Astoundingly, 48% of medical oncologists indicated that they were seriously considering leaving their current job for a job outside the province. This latter finding of the study should be interpreted with caution. It cannot be extrapolated that almost half of medical oncologists will leave the province since a complex host of personal, professional and economic factors determine whether an individual will actually take such an important decision. This finding, however, together with other data documented elsewhere in this report that some medical oncologists have already left the province, that graduates of Ontario training programs and fellows are not returning to take up permanent positions in Ontario, and that oncologists are reducing their work hours, is symptomatic of the serious situation that exists in the systemic therapy program within the province now. These results are a warning that action must be taken immediately to address the concerns identified in the “On the Brink” paper. The reality is that if only a small number of medical oncologists, nurses or pharmacists act on their “serious consideration” of leaving the province, it will have a profound impact on patient care within a system already under great strain.

A full report of the CCOPE study of the psychological health of the cancer system’s care providers is found in Appendix C.

**Converging Trends Affecting New Patient Caseload**

Over the six years from 1990 to 1996, the number of new incident cases of cancer in the province of Ontario increased 12.9%, or an average of 2.2% per year (Appendix B). However, this modest increase in new cancer cases is not reflective of the substantial increase in the workload of the Systemic Therapy Program (STP).
With the establishment of program management in 1994/95, CCO developed and refined indicators of patient activity (Activity Level Reports – ALR). These reports provide data on activity at the Regional Cancer Centres alone (core), the host hospital and other locations associated with the program, including some community oncology centres. Comparable data from Princess Margaret Hospital and community-based oncology clinics are not available, with a few exceptions. However, it is estimated that approximately 50% of the new systemic therapy patients are seen outside of the formal cancer system in the community. This estimate is based on the observation that 50% of the New and Expensive Drug program budget is spent outside CCO.

The STTF concluded that the current best measures of workload in CCO’s Systemic Therapy Program are new cases to the systemic therapy program and visits to the systemic therapy suite for chemotherapy administration or related procedures.

**New Cases to Systemic Therapy**

For the four years 1994/95 to 1998/99, the number of new cases seen by the systemic therapy program increased by 28%, for an average increase of 7% per annum. This increase was not uniform across the province, as some RCCs incurred increases as high as 35% during this period. The principal reason for this substantial increase in new cases to the Systemic Therapy Program is the greater availability of treatment options for patients: new adjuvant therapies for common cancers (e.g. colon); combined modality treatments for early stage, potentially curable cancers; new, more effective agents to palliate advanced stage cancer; new agents to treat previously untreatable cancers. The variability in the increased referral to RCCs may be attributable to factors such as resources to see and treat patients, the level of awareness of the referring community about treatment advances, the expectations and informed choices of patients and distance from a cancer centre.

The number of treated cases increased by 23.6% in the period from 1994/95 to 1998/99, but increases varied by tumour type: breast, 12.7%; colon, 9.1%; prostate, 113%; lung, 28%; malignant hematology, 26%; gynecological cancers, 10.5%; other tumour types, 21%.

**Systemic Suite or Chemotherapy Treatment Unit (CTU) Visits**

The large increase in number of treated cases led to an increase in systemic therapy suite (CTU) visits of 29.6% between 1994 and 1998 (7.4% per annum) and an increase in the nursing time required for chemotherapy administration of 30% (7.6% per annum).

**Impact of the New Systemic Therapy Drug Program**

During the same time period (1994/95 – 1998/99), the funding to CCO for systemic therapy increased by 3.9% (0.975% per annum). CCO’s New Systemic Therapy Drug Program has made new and expensive chemotherapy drugs available to RCCs, PMH and to community hospitals according to evidence-based practice guidelines. However, this increased funding has not been matched by any increase in support for the human resources necessary to manage the increasing number of patients within and outside the formal cancer system.
**Waiting Times**

**a) Time from Referral to Medical Oncology Consultation**

An important measure of the pressure on the Systemic Therapy Program has been the appearance for the first time of waiting times for consultation with a medical oncologist. In the past, medical oncologists have always extended themselves to see patients as quickly as possible, recognizing the emotional distress that delays cause patients with serious malignancies. Usually patients have been seen within 1-2 weeks of referral and often within shorter intervals. During the last 5 months of 1999, waiting times to referral have ranged from 2.6 to 2.9 weeks for the 50th percentile of patients waiting and from 5.7 to 6.9 for the 90th percentile. For centres that have had a net gain in medical oncologists, the waiting times have slightly decreased (Hamilton). For centres that have had a net loss in medical oncologists in the last year (London) waiting times have risen and the 50th percentile has ranged from 2.6 to 3.1 weeks.

**b) Time from Consultation to Treatment and the Impact of Delays in Access to Diagnostic Tests**

Treatment has generally been started promptly (within 1.3 to 1.6 weeks) after a consultation with a medical oncologist. Chemotherapy Treatment Units (CTU) can and have added additional treatment chairs and its nurses have flexibly responded to the growing need by working harder, using available resources more efficiently (non same day chemotherapy treatment*) and longer with the addition of overtime (estimate of CTU nursing overtime hours for 8 RCCs in the first 6 months of fiscal 1999/00 totalled $46,600). However, the time to treatment is also influenced by factors unrelated to the availability of resources to treat. Prior to treatment starting, there is commonly a need to have baseline studies to document disease extent. Delays in access to CT and MRI scans, nuclear medicine and ultrasound studies, which are common across the province, are contributing to delays in the start of treatment and to the frustrations of patients and care providers alike.

It is clear, however, that the capacity of care providers to absorb additional patients has been stretched beyond their capacity to respond and waiting times for consultation and for treatment can now be expected to increase.

**Current New Patient Caseload and Workload Ratios**

The current average new patient caseload for the medical oncologists working within CCO’s regional cancer centres ranges by centre from 221 to 403 and averages 258 in the centres associated with universities and teaching programs and 261 for the centres not directly associated with universities (Appendix D). The new patient caseload for medical oncologists working at the Princess Margaret Hospital was not provided to the Task Force. It was not possible to determine

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* Non same day chemotherapy refers to the scheduling of the patient’s chemotherapy treatment on a day sometime after a clinic assessment visit. This enables the patient’s chemotherapy to be delivered at the most appropriate time, making full use of morning treatment slots, which are typically underutilized when all bookings are for same day chemotherapy. Non same day chemotherapy also reduces the cancellation rate for chemotherapy because patients who are too sick or whose disease has progressed are not pre booked
the average new systemic therapy caseload of oncologists in the community, as there was no reliable data. It is assumed that it is similar to that of those working within cancer centres, but with an admixture of patients with non-malignant diseases. The number of systemic suite visits in RCCs ranged from 1098 to 2522 per Chemotherapy Treatment Unit (CTU) nurse in 1998. The ratio of chemotherapy related prescriptions per FTE pharmacy technician ranged from 8,498 to 20,170 and the staffing in regional centres ranged from 1 FTE pharmacist to 3,247 to 12,337 systemic suite visits. The wide workload ranges seen across the formal provincial system underscore the need to establish workload standards that can be flexibly and rationally adopted across the system. At the same time, these workload standards can give guidance to the appropriate staffing levels for those institutions providing systemic therapy outside of the formal cancer system.

**Future Caseload Projections**

The Ontario Cancer Registry estimates that cancer incidence will increase in Ontario from 46,266 cases in 1996 to 68,670 cases by 2010, an increase of 48% (*Appendix B*). The percentage increases will vary by tumour type: colon, 36% increase; breast, 65%; prostate, 86%; lung, 53% and other tumour types, 36%.

There is clear evidence that the cancer system’s ability to provide care is in serious jeopardy. Care providers are working at or beyond their capacity in an effort to meet patient care needs. There is evidence that teaching and research productivity has been sacrificed to meet these clinical demands and this is seriously affecting provider job satisfaction and the ability to recruit into the provincial cancer care system. The future patient numbers threaten to completely overwhelm care providers, if serious and aggressive action is not taken immediately.

**Overview of A New Systemic Therapy Delivery Model**

1. **Role of the Medical Oncologist and Proposed Changes**

A medical oncologist is a consultant cancer diagnostician and the leader of a team of care providers involved in the treatment and supportive care of patients with cancer requiring systemic therapy (see Medical Oncology Role document, *Appendix E*). The role of the medical oncologist is more than that of a clinician who diagnoses, treats and supports patients, who most commonly have advanced cancers. Importantly, medical oncologists are clinical researchers evaluating new therapies for their efficacy; educators of patients, other care providers and the public about cancer; and guideline developers. At times, they are also health services or basic science researchers, or leaders in new areas of oncology such as chemoprevention and cancer screening. A detailed description of what a medical oncologist is and does and the justification for the workload recommendation in this report is provided in the Medical Oncology Manpower Report (*Appendix Fa*).

With medical oncologists in short supply in the province of Ontario and across the country, the medical oncologists’ expertise and knowledge must be applied as a consultant, with the actual direct delivery of care assumed to the extent possible, by other care providers, under the direction of the medical oncologist. Due to the shortages of medical residents and other trainees, medical oncologists have increasingly needed the assistance of Clinical Associates to supervise
the care of inpatients and to assist the oncologists in the outpatient setting. This need will persist for the foreseeable future and the cancer system and the MOHLTC need to acknowledge the importance of physicians with family medicine training functioning in this role. It is, in fact, a cost-effective solution to the shortage of medical oncologists. The presence of Clinical Associates enables Ontario-based medical oncologists to care for larger numbers of patients per oncologist than other jurisdictions in Canada.

As new advanced practice nursing and pharmacy roles are developed within the cancer system, these health care providers will also support the medical oncologist in his/her consultative role and enable the system to accommodate better to the burgeoning caseload numbers and patient needs.

The variation in the availability of the traditional cancer care providers by region of the province and the probability that the new roles will evolve unevenly in the different regions means that there will be a complex tapestry of care providers. The pattern of care providers may look very different from region to region, but the key is not to have holes in this tapestry that prevent cancer centres from achieving high quality care that is accessible to patients in a timely fashion.

2. **Role of the Clinical Associate and Proposed Changes**

With fewer medical trainees available to provide service and with a shortage of medical oncologists and palliative care physicians, these general practitioners with oncology experience and expertise are essential to the team of health care providers if efficient and high quality patient care is to be given and waiting times for access to care are to be limited (see Clinical Associates Role document, Appendix G). Under the direction of medical oncologists, they frequently supervise the care of inpatients, provide supportive/palliative care to both ambulatory patients and inpatients, and supervise and deliver care to ambulatory patients with uncomplicated care needs. Based on experience and under the supervision of medical oncologists, they ensure continuity of care between inpatient and outpatient settings, provide coverage during oncologists’ absences, undertake triage of unscheduled patients with acute care needs, admit patients to hospital, do new patient assessments, share in night and weekend call, administer clinic schedules and maintain liaison with primary care physicians. These roles will likely all continue to varying degrees from region to region into the future.

To ensure that there are sufficient Clinical Associates to compensate for the shortage of medical oncologists and to fill otherwise unmet needs, it will be essential to ensure that the role is formally defined, recognized and competitively compensated. It is also essential that initial training be consistently provided and that continuing medical education occurs.

3. **Role of the Family Physician and Proposed Changes**

In the past, the family physician provided almost all of the care to cancer patients. With the development of the oncology specialties and the establishment of tertiary cancer treatment facilities, the family physician’s role in care provision has been progressively eroded. Many now feel excluded from the care of their patients by cancer centres. As the cancer system itself has become overwhelmed by the increasing numbers of patients and their needs, there has been a growing recognition that the family physician should be brought back into a central role in
cancer care again, particularly in providing continuity of care between the cancer treatment system and the community. Family physicians can and should provide much of the supportive care to their patients with cancer (see Family Physician Role document, Appendix H). With appropriate direction, they could undertake the follow-up of well patients for disease recurrence. As the average family physician only sees about 4 patients requiring palliative care per year, it is unrealistic to expect that all family physicians will be able to maintain a high level of competency in palliative care. Therefore, a subset of committed family physicians in each community should undertake a major role in the provision of palliative care, with appropriate levels of consultative support, human and physical resources, education and remuneration. In addition, family physicians in rural settings should increasingly work with regional cancer treatment facilities to provide chemotherapy closer to home. This requires physician training in the delivery and support of cancer patients on systemic therapy. Excellent community oncology programs have been developed in the Northern and Eastern regions of the province and could be emulated elsewhere in the province, where great distances represent a barrier to patients receiving care.

4. Role of Nursing and Proposed Changes

Although there are nursing shortages in Ontario, oncology nurses are essential to the optimal delivery of cancer care and must be attracted in the cancer care field. This can be accomplished by adequately defining and supporting nursing roles, by providing challenging career opportunities and supportive work environment with competitive compensation (see Cancer Nursing in Ontario document, Appendix I). A primary nursing philosophy is seen as being key to the delivery of optimum cancer care to patients and their families and should be adopted by the formal cancer system. Primary nursing as a philosophy facilitates continuity of care, coordination of a patient’s care plan and a meaningful ongoing relationship with the patient and their family. Primary nursing, when delivered as a collaborative nurse-physician team, allows for medical resources to be used effectively and efficiently. Primary nursing can best be defined as a model of nursing care in which each patient has one accountable nurse who plans and modifies his/her care. This nurse is the patient's primary point of contact in accessing the health care team. Defined roles enable nurses to manage patients within their scope of practice, in collaboration with physicians. Defining new nursing roles in oncology, such as nurse practitioners and advanced practice nurses, would enable the cancer system to manage a broader number of patients with more complex needs. These advanced practice roles are described in detail in the Nursing Role document (Appendix I) and these roles should be introduced incrementally into the formal cancer system. These roles do not replace physicians, but rather enable specialist physicians to oversee the management of a greater number of patients with the assurance of high quality patient care.

Effective recruitment and retention strategies for oncology nurses are essential in order to ensure an appropriate supply of nurses to meet patient needs. Providing nurses with the opportunity for professional development and the potential to assume advanced practice roles in the cancer system or to work in partnership with physicians as a primary care nurse are important aspects of the strategy to attract nurses into the oncology field.
5. **Role of the Pharmacist, Pharmacy Technician and Proposed Changes**

The preparation of chemotherapy and related anticancer and supportive care drugs is most appropriately done by pharmacy technicians. These individuals should receive standardized training for their work within the oncology pharmacy. Where numbers are sufficient, technicians should be trained to check each other’s chemotherapy drug preparations for accuracy, thereby enabling pharmacists to undertake other cognitive work.

The role of the pharmacist should focus on the review of systemic therapy orders, supervision of chemotherapy preparation by technicians, provision of advice to patients about pharmacotherapy, education of other health care providers on pharmacotherapy and liaison with community-based pharmacists. The oncology pharmacist could potentially take on the responsibility for the delivery and monitoring of standard, low acuity chemotherapy, for defined periods of time, as a delegated act from physicians (see Oncology Pharmacy Role Document, **Appendix J**).

**Conclusions and Recommendations**

Based on the data summarized earlier in this report and the input from members of the Task Force and its subcommittees, as well as the multidisciplinary workshop, the Task Force offers the following conclusions and recommendations. Support for each recommendation can be found in the appendices.

**Human Resource Needs**

**Medical Oncology**

The Systemic Therapy Task Force (STTF) recommends:

1. That the Ministry of Health accept the recommendation of the Medical Oncology Manpower Committee (**Appendix Fa**), that the average caseload for oncologists working in cancer centres engaged in undergraduate and postgraduate medical teaching, be 158 (rounded to 160) new patients per year. The average caseload of individuals working in non-teaching treatment centres should be 173 (rounded to 175) patients per year.

2. That planning for the number of medical oncologists in the community be based on a similar caseload. In teaching centres outside of the formal cancer system, planning should also be for an average of 160 new patients per medical oncologist and 175 new cases in community-based non-teaching settings.

This recommendation is consistent with recommendations made by the Canadian Association of Medical Oncologists and adopted in the province of British Columbia (130 new cases per year) and recommended in Alberta (150 new consults per year), when consideration is given to the fact that these provinces have not employed Clinical Associates to the extent that has occurred in Ontario.

The methodology used has been reviewed and supported by the Health Analysis and Modeling Section of Statistics Canada (**Appendix Fb**).
As new roles evolve for care providers (advanced practice nurses, enhanced pharmacist role) and as workload within the systemic therapy program changes (complex multidisciplinary care, increasing needs of patients/families for information and other supports), the workload ratio for medical oncologists will have to be periodically reevaluated, probably at three (3) years intervals.

Because this workload standard can not be achieved immediately and new roles for other health care providers, as described elsewhere in this report, cannot be created quickly, the STTF recommends that the number of new cases per medical oncologist move incrementally towards the recommended workload standard as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of New Cases</th>
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<tbody>
<tr>
<td></td>
<td>Teaching</td>
</tr>
<tr>
<td>Current</td>
<td>262</td>
</tr>
<tr>
<td>2000</td>
<td>200</td>
</tr>
<tr>
<td>2001</td>
<td>180</td>
</tr>
<tr>
<td>2002</td>
<td>160</td>
</tr>
<tr>
<td>2003</td>
<td>160</td>
</tr>
</tbody>
</table>

This will require the recruitment of 20 medical oncologists into CCO centres in fiscal 2000/2001, in addition to additional medical oncologists to Princess Margaret Hospital and the community to meet these workload standards.

3. That the calculation of FTE medical oncologists acknowledge that some individuals with medical oncology training assume important provincial, regional and local administrative responsibilities. Therefore, for the calculation of the workload ratio, medical oncologists who are responsible for the management of cancer centres and CCORs should be considered as 0.2 FTE and Program Heads, who have cancer centre, hospital and CCOR network responsibilities, be considered 0.5 FTE. Those appointed as Clinician-Scientists are included as 0.25 clinical.

4. That the Ministry of Health and the Ministry of Education recognize that there is currently a deficit in the number of medical oncologists within Cancer Care Ontario estimated to be 34 medical oncologists. The magnitude of the deficit at PMH and in the informal system is impossible to adequately estimate due to a lack of data on activity levels, but it likely to be substantial. The combined deficit must be immediately addressed by a major recruitment initiative and by expansion of the medical oncology training programs in the province to meet current and growing needs. (See Appendix Fe for the methodology of determining the deficit in the number of medical oncologists, and the method of calculating future requirements). Given the continuous increase in numbers of patients and the fact that medical oncologists will be retiring or in other ways withdrawing from the clinical work force, the STTF recommends that the post-graduate training program across the province have a total of 10 entry level positions per year for each of the next 5 years.
Clinical Associates (General Practitioners with Competency in Oncology)

The STTF recommends:

1. That CCO, PMH and the MOHLTC recognize “Clinical Associates” as an essential human resource within the cancer care system (Appendix H).

2. That those Clinical Associates committed to an oncology career path undertake additional formal training. CCO should take the lead in working with the College of Family Practice to establish a training program leading to a Certificate in Special Competence in Oncology for General Practitioners/Family Physicians.

3. That Clinical Associates receive support for continuing medical education to further develop their interest, knowledge and expertise in oncology and to obtain educational credits required for maintenance of licensure.

4. That CCO and PMH ensure that Clinical Associates receive competitive salaries to facilitate their retention within the formal system.

5. That the staffing ratio for clinical assistants in large cancer centers be approximately one for every 2.5 medical oncologists. This ratio should be flexibly applied and might range from 1:2-3 depending on factors such as availability of other supports (residents, palliative medicine physicians, nurse practitioners) and the size and scope of the inpatient medical oncology service.

6. That Clinical Associates establish a Professional Advisory Committee within CCO in order to develop training and orientation programs for new Clinical Associates, to advise on recruitment strategies, to recommend educational initiatives to maintain clinical competence, to recommend on role development and optimal deployment of human resources and to provide a forum for communication of shared issues and experience.

Family Physicians

The STTF recommends:

1. That CCO continue to work through its CCORs to identify family physicians in communities that are willing to assume a role in the management of patients requiring systemic therapy at a distance from regional cancer centres. Models such as those developed in Northern or in Eastern Ontario enable chemotherapy delivery by community-based family physicians. Successful programs include initial training, ongoing telephone or on-site supervision, ongoing education through tumour boards and close contact with an identified oncology specialist.

2. That CCO work with the College of Family Medicine to ensure that all family medicine practitioners receive training in the supportive care and palliative care of cancer patients, particularly pain management.
3. That CCO work through its CCORs to identify family physicians, who wish to acquire special expertise in palliative care and symptom control who can serve as a resource to individual communities.

**Oncology Nursing**

The STTF recommends:

1. That a primary nursing model be adopted as the standard model of care within the cancer system and in other institutions where systemic therapy is provided. Central to this model of care is the fact that the patient recognizes an oncologist, a specific nurse and clinical associate as their core care team. In this way, the nurse, working in collaboration with physicians and other care providers can facilitate the provision of supportive care and maintain continuity of care during the cancer patient’s treatment journey. (See Nursing Role Document, Appendix G). Specifically, CCO, through its Nursing Professional Advisory Committee should define the core competencies for primary nursing at CCO and develop job descriptions and performance expectations for use by all registered nurses across CCO. The recommended ratio of primary care nurse to oncologist/hematologist/consultant is 0.8:1 FTE.

2. That Cancer Care Ontario support the recognition of oncology nursing as a specialty within nursing and acknowledge that with training and experience, a nurse progresses from novice to expert status. Specifically, CCO should attempt to recruit nurses with oncology expertise, experience or academic qualifications i.e. CON(C) - Certified Oncology Nurse (Canadian; ONC - Oncology Certified Nurse, Oncology Nursing Society, American); a post basic certificate or Adult Oncology Program (McMaster) and/or ensure certification and post basic education is provided to current nursing staff. It should also recognize that there are subspecialties within oncology nursing (Nursing Role Document, Appendix G).

3. That CCO and the MOHLTC accept the recommendation that cancer centres be staffed according to the following workload standards:
   - Chemotherapy Treatment Unit (Systemic Suite) be staffed at the ratio of one FTE nurse per 1800 systemic suite visits (see Appendix G)
   - Primary care nurses be recruited to CCO treatment centres in a ratio of 0.8 FTE primary care nurses to one FTE medical oncologist/hematologist/consultant. (see Appendix G)

The proposed workload ratio takes into account the importance of nurses having sufficient time to provide education and support to their cancer patients during treatment. These workload standards must be applied flexibly, recognizing that centres may justifiably require a lower workload ratio due to volume factors and complexity of treatment protocols.

4. That CCO employ nurses full-time to the extent possible and resist the trend to “causalization”, in order to develop and maintain a committed, well trained and loyal nursing workforce.

5. That each regional cancer center assess the need for additional nursing models/roles and determine how to integrate the Nurse Practitioner and Advance Practice Nurse roles within
centers. Specifically, CCO, through its Nursing Professional Advisory Committee should define the core competencies for advanced practice nurses within CCO and develop job descriptions and performance expectations for these new roles.

6. That CCO provide pro-active leadership in the recruitment and retention of nurses to the specialty of oncology. Specifically, mount an active recruitment campaign through universities and colleges; introduce appropriate orientation programs and continuing education programs through universities/colleges; financial support for continuing education; job sharing and part time opportunities.

7. That CCO examine and identify the reporting relationships that would optimally represent nursing interests and concerns to the senior management of the organization within the framework of program management (e.g. consider the appointment of a Chief Nursing Officer)

**Oncology Pharmacy**

The STTF recommends:

1. That the provincial workload ratio for oncology pharmacists be one pharmacist per 6,000 systemic suite visits (see methodology in Appendix Ja). This workload ratio is meant as a guide that should be flexibly applied after taking into consideration whether the facility has a dispensing pharmacy or enhanced pharmacy practices in place as described in the Pharmacy role document (Appendix J).

2. That pharmacy technicians undertake the technical component of all chemotherapy preparation.

3. That the staffing level in centres where volume requires at least one FTE technician be according to the ratio one pharmacy technician to 11,500 chemotherapy prescriptions.

4. That a process be implemented of technicians checking technicians on the accuracy of chemotherapy drug preparation, when appropriate pharmacy technician staffing levels are achieved in those centres where numbers justify (see Oncology Pharmacy Role Document, Appendix J).

5. That clerical staff be utilized in those centres where there is a sufficient volume of clerical tasks (insurance forms, Section 8 requests, etc) to free up pharmacist time for other activities that directly impact patient care.

**Training, Recruitment and Retention Issues**

Because all of the health care disciplines involved in systemic therapy provision are in scarce supply, there is a need to attract individuals into the field through a combination of promoting
awareness of career opportunities, early introduction of medical students and residents, nurses and pharmacists to oncology practice and by the provision of competitive compensation.

The STTF recommends the following specific actions for the training, retention and recruitment of the disciplines involved in the Systemic Therapy Program:

1. That efforts be initiated to increase the retention of Medical Oncology trainees in Ontario. The goal should be to increase retention to at least 60% of graduates from the current level of 33% (see Training, Recruitment and Retention document, Appendix K). This could be accomplished by:
   a) Competitive compensation
   b) Standardized workload as per the recommendations of the STTF report
   c) Centralized mechanism to track residents and fellows and to maintain contact and interest in the Ontario cancer system
   d) Recognition and acceptance by CCO and the MOHLTC of the importance of research and other academic activities as a recruitment and retention strategy.
   e) Allocation and protection of time for academic activities to ensure that system attracts the best individuals to Ontario.

2. That the Medical Oncology Training Program in Ontario be immediately expanded to 10 positions per year (2 positions for each of the 5 programs) (see Appendix Ka, Table 3). As it is unlikely that there would be sufficient candidates to achieve this expansion of the training program for an Ontario-based solution, it will be necessary to engage in external recruitment from Canada, the United States and abroad (see below).

3. That recruitment efforts aim to attract as many of the graduates of the provincial Medical Oncology training programs and those who are undertaking extra training (fellowships) who will be available over the next 3 years. The maximum potentially available over the next 3 years is 30 (Appendix Ka, Table 3). Based on Ontario’s past history, only a total of 10 are likely to return to Ontario. Concerted efforts, with attention to the items identified in #1 might be expected to increase this number to 20.

4. That external recruitment from elsewhere in Canada, the United States and abroad commence immediately with the minimum recruitment target being 36 medical oncologists over 3 years (Appendix Ka, Table 3).

5. That the Medical Oncology Training Program be sized to match projected need from July 2003 to 2010. Based on estimates of the projected incident cases from the Ontario Cancer Registry (Appendix Ka, Table 1), there will be a need for 4-6 medical oncologists per year based on the assumption that 50% of incident cases will be seen for systemic therapy. This number would meet the needs of both the formal and informal cancer systems, assuming that there is no major change in medical practice. Based on an estimated retention of 60%, the requirement will be for 8-10 training positions.
6. That the MOHLTC provide funding for the required residency positions and flow this funding through CCO.

7. That several initiatives need to be undertaken to attract more internal medicine residents to the field of oncology:
   a) Efforts to interest medical students in oncology must begin early in the undergraduate curriculum with relevant oncology content taught by oncologists. Undergraduate Associate Deans of the University Faculties of Medicine need to be encouraged to review their undergraduate curricula for relevant oncology content and ensure that oncologists are active in its teaching.
   b) Associate Deans of Postgraduate Education need to be informed of the need for Medical Oncologists and encouraged to make training positions available.
   c) The Royal College of Physicians and Surgeons needs to be lobbied to make oncology training mandatory for all Internal Medicine trainees.
   d) Physicians re-entering training from practice or from other programs need to be encouraged to consider medical oncology as a career option.
   e) The MOH needs to add Medical Oncology to its list of specialty positions for which family physicians may seek re-entry through general internal medicine (see MOHLTC Bulletin 4347).

8. That a concerted medical oncology recruitment effort be undertaken over the next three years to recruit an additional 36 medical oncologists from outside Ontario or Canada, because even an expanded training program cannot close the gap in the need for medical oncologists (Appendix Ka, Table 2), there is (Appendix Ka, Table 3).

9. That the Family Medicine training programs must be persuaded of the need to provide their trainees with relevant oncology training and skills in cancer diagnosis, screening, treatment, and follow-up and pain and symptom management. This will partially alleviate the need for additional medical oncologists.

10. That CCO take the lead in working with the College in Family Practice to establish a certification process for family physicians who wish to follow a career path in oncology and obtain a certificate of special competence in oncology.

11. That cancer treatment centres (CCO RCCs, PMH, community-based facilities with high volumes) take a leadership role in providing training and education on chemotherapy in accordance with established Oncology Nursing Practice Guidelines for Systemic Therapy (Appendix G).

12. That CCO take a leadership role in establishing and initiating partnership activities and agreements with universities and colleges to offer training and development opportunities in the specialty of oncology nursing; and that Oncology Nurse Practitioner Programs at the Master’s level be established at selected Ontario Universities.
13. That CCO encourage the development of training programs for pharmacy technicians in community colleges with standardized curricula to meet oncology pharmacy technician needs.

14. That Regional Cancer Centres and PMH collaborate with pharmacy training schools to offer electives in oncology pharmacy. CCO/PMH pharmacists should collaborate in developing the curriculum for pharmacy electives.

Other Issues

**Competitive Compensation for Oncology Health Care Professionals**

1. The earnings of CCO medical oncologists are currently below those of two other Canadian provinces and they fall within the lowest quartile for internal medicine subspecialists in Ontario. This places Ontario at a competitive disadvantage in recruitment and retention of medical oncologists, particularly as workload is also greater in Ontario. The recent loss of a substantial number of graduates of Ontario medical oncology programs to British Columbia attests to the loss of Ontario’s competitive position. Since a large proportion of medical oncologists’ income is derived from volume based fees for service, the implementation of the proposed staffing standards and the proposed shift to the new care delivery mechanisms discussed in this report, will both result in a decline in real income for medical oncologists. CCO and the MOHLTC must ensure that the incomes of medical oncologists are competitive with other jurisdictions and other specialties. CCO must also ensure that financial considerations do not constitute barriers to the adoption of workload redistribution as discussed and supported during the “Innovative Care Delivery” Workshop held by the STTF. ([Appendices E,G,H,I,J](#))

2. That consideration be given to a compensation mechanism that enables those choosing family medicine with a special competency in oncology as a career path to retain a component to their income as fees, analogous to the current arrangement for the Oncology Associates group. This compensation must be competitive with incomes in family practice after expenses of practice are discounted.

3. That competitive salary scales for nursing, oncology pharmacists and technicians be developed in order to attract individuals into an oncology career path and to facilitate their retention.

4. That a recruitment drive, similar to that undertaken to recruit human resources to the radiation therapy program, be organized by CCO. This program should support recruitment to Ontario into both the formal and informal cancer systems.

**Activity Level Reporting and Management of the Systemic Therapy Program**

The STTF recommends:
1. That the definitions for new cases, treated cases and the weighting system for measuring acuity of chemotherapy preparation and delivery be harmonized between the Princess Margaret Hospital and CCO.

2. That CCO undertake mechanisms to ensure that the capture of workload acuity in CTUs and chemotherapy preparation is complete and an effective measure of the real workload.

3. That major oncology programs in community hospitals also capture similar data to the activity level reporting system of CCO and provide this data to CCO in order to have a comprehensive picture of chemotherapy delivery in the province.

4. That the activity level reports should be expanded to include the reporting of specific types of follow-up activity within the program by disease site and location to enable cancer centres and others to effectively monitor the amount of well versus treatment or supportive care follow-up activity being provided by medical oncologists.

5. That the workload ratios for medical oncologists, clinical associates, CTU and clinic module nurses, oncology pharmacists and pharmacy technicians be reevaluated within the next three years for their appropriateness.

**Volume-based Workload Funding**

The STTF concluded that it essential to develop and to move towards workload standards and that funding be linked to workload volumes. The volume based funding must be sensitive to key cost drivers of the program. Further discussion needs to occur around a number of key elements:

**Case Definition:**

There is a need to define the most appropriate “case” on which to build a program of volume-based funding. Options such as “new case to systemic therapy” or “new treated case at a regional cancer center” have problems associated with them, which would need to be addressed. Unlike the radiotherapy program, where most cases are treated definitively only once and defining a “case” as a new case is reasonable, many systemic therapy patients receive treatment over many years, with therapy becoming progressively more complex and costly over time. For example, of the estimated average lifetime cost of treating a patient with breast cancer of $25,661, only $8,722 is spent on initial therapy including surgery, radiotherapy and adjuvant chemotherapy (source: Health Analysis Modeling Group, Statistics Canada). Systemic therapy costs increase as disease advances and there is a need for more frequent visits for treatment and supportive care.

A systemic therapy case treated at an RCC (core) will not have the same cost components as a treated case at another location. Moreover, the costs related to treating a case at one community hospital associated with an RCC (e.g. Hamilton), will be very different from those associated with treating a case in Eastern or Northern Ontario outside of the RCC.

**Inclusiveness of cost drivers:**

It was felt that further cost analysis would need to be undertaken in order to have a comprehensive understanding of all the direct and indirect cost drivers, such as support personnel (unit coordinators, health information services personnel etc) and infrastructure support (information systems support, finance etc) that contribute to the cost of care for a systemic therapy case. Although regional cancer centers have allocated some of these infrastructure supports to the systemic therapy program since CCO migrated to program management, this has not been done consistently across the system. Until standardization of infrastructure cost allocation is undertaken uniformly across the system, it would be premature to estimate the cost per case from available financial information.

**Salary adjustments for Health Care Professionals:**

The mechanism of how to incorporate negotiated salary adjustments into a volume-based funding formula would have to be agreed to with the MOHLTC. It could easily be foreseen that the significant salary adjustments which are needed to make Ontario competitive in recruiting health care professionals would negatively impact on CCO’s ability to deliver patient care, if the salary adjustments had to made within an arbitrarily defined cost per case.

**Chemotherapy Drug Costs:**

Concern was expressed that the wide variance in the cost of chemotherapy drugs and the sudden appearance of both new indications for treatment and new systemic agents would make it impossible to incorporate drug costs into the cost per case formula. It was the conclusion of the STTF that drugs should remain separately funded through the New Systemic Therapy Drug Program, the operating budgets of the treating facilities and provincial programs such as ODB and Trillium.

**Rapid Changes in Workload Volumes due to New Treatment Practices:**

The treatment of cancer with systemic therapies is evolving very rapidly. Individual centres have seen treatment volumes go up by as much 30% in a single year. The volume based funding formula would have to be able to accommodate sudden increases in any of the component parts of the systemic therapy program, such as a sharp increase in systemic suite visits or chemotherapy prescriptions independent of an increase in new cases to the Systemic Therapy Program.

The ad hoc committee felt that a volume based funding formula(s) incorporating the various cost drivers, exclusive of systemic therapy drug costs, could best be developed in collaboration with the Joint Planning and Policy Committee (JPPC). However, this should be undertaken only after there has been acceptance by the MOHLTC of the workload standards recommended in this report. It was, therefore recommended

1. That upon acceptance of the workload standards recommended in this report by the MOHLTC, work commence in concert with the JPPC to develop a volume-based workload funding mechanism for the systemic therapy program, exclusive of drug costs.
**Scope of Role of the Policy Advisory Committee on New Systemic Therapy Drugs**

The Policy Advisory Committee (PAC) for the New Systemic Therapy Drug Program considered whether its role should be extended to all new oral agents, currently reviewed and approved through the Ontario Drug Program and also to old but expensive agents. The PAC process of approval following review of evidence-based guidelines and discussion of the value of each new agent for a defined population was felt to be an excellent one that has met the province’s needs well. There was concern about managing this expanded workload and the duplication of effort with ODB.

The PAC recommended

1. That a mechanism be developed by which the Program in Evidence-Based Practice at CCO assist ODB in making decisions about the appropriateness of new oral agents in the management of patients with cancer.

2. That the PAC give consideration to reviewing and recommending the funding of expensive, older agents through the New and Expensive Drug Program, if there was evidence that access to appropriate care was being denied patients because of the cost issue.

**Standards for Physical Facilities for Systemic Therapy Preparation and Delivery**

The Oncology Pharmacists expressed concern that the rapid growth in the activity within the pharmacies of regional cancer centers has produced crowding of personnel with increased risk of errors. Although CCO has defined the elements required within a chemotherapy production facility to meet acceptable standards, it has not defined the actual physical space requirements that are appropriate for safe practice. The oncology pharmacists recommended and the STTF supports a recommendation:

1. That CCO, through its Pharmacy PAC, develop a facility space standard that relates volume of activity and number of personnel to the physical space required for safe practice

Similarly, there is a need to define appropriate standards for the physical space in which systemic therapy is given to patients. Rapid growth in the need for chemotherapy and other systemic agents has resulted in crowding of systemic suites (Chemotherapy Treatment Units) and this is both insensitive to patient needs and potentially unsafe. The STTF recommends:

2. That CCO, through the Systemic Therapy Advisory Committee (STAC), develop a systemic therapy facility space standard that defines an appropriate space allocation for systemic therapy delivery, that respects patient and family needs for privacy and health professional concerns for safe practice.
**Opportunities for Increased Efficiency**

The work life of all systemic therapy care providers would be enhanced by the development of mechanisms to more efficiently manage data, clinical information and knowledge. Timely access to clinical information for medical decision-making and to knowledge on current best practices (practice guidelines and care paths) would lead to better service delivery, improved care and outcomes, reduced provider stress and enhanced quality of work life.

The STTF recommends:

1. That CCO, through its Systemic Therapy Advisory Committee (STAC), work to establish, to the extent possible, protocols of common tasks and procedures in relation to common occurrences in the management of cancer that would increase the efficiency and consistency of treatment within cancer treatment facilities and enable standardized care to be given outside of the formal cancer system. An inventory of these protocols should be developed and be maintained in an electronic database available to cancer care providers.

2. That CCO proceed to pilot electronic health records and lead the development of regional health information systems as a means to ensure timely access to clinical information for medical decision-making.

3. That RCCs establish electronic linkages to their host hospitals and that host hospitals acquire electronic image management systems.

4. That CCO implement its Knowledge Management Initiative as quickly as possible so that providers, patients and the public can have access to information of high quality concerning all aspects of cancer care.

5. That CCO facilitate the dissemination of electronic care paths and protocols across that provincial system so that standardized efficient approaches can be implemented promptly.

**Conclusion**

The Systemic Therapy Task Force has addressed its Terms of Reference and provides this report to CCO Management to guide actions that will pull the Systemic Therapy Program in the province of Ontario back from “the brink”. The STTF cannot understate the urgency with which these recommendations must be addressed. Clearly, not all of these recommendations can be addressed immediately. However, it is essential that workload standards be agreed to rapidly and funding must be provided to address the very serious human resource issues identified during the Task Force’s work. Ontario is fortunate to have such a committed cadre of care providers who have “hung in” through a crushing increase in workload stresses. For their sake and the sake of the patients they provide care to, the STTF urges Cancer Care Ontario and the Ministry of Health and Long Term Care to vigorously pursue a rapid implementation strategy.
Select Data - Need to discuss with Bill Evans
Appendix C

Provincial Systemic Therapy Personnel Study

Report to the Systemic Therapy Task Force

Cancer Care Ontario

Dr. Eva Grunfeld

December 1999
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ABSTRACT

Background:
The document “On the Brink: The Looming Crisis in Systemic Therapy” points to the many stresses facing the system responsible for delivering systemic cancer therapy in Ontario. Concern about the impact of these stresses has led Cancer Care Ontario to convene a task force to review the systemic therapy program in Ontario. As part of its mandate, the Ontario Systemic Therapy Task Force needs an understanding of the psychological well being of personnel involved in the delivery of systemic therapy. Specifically, there has been growing concern over anecdotal reports of burnout, decreased morale, high levels of stress, and large numbers of staff leaving or decreasing work hours. No research has systematically documented the situation. This research was commissioned by the Systemic Therapy Task Force to determine whether there is evidence to support or refute these concerns.

Objectives:
The overall objective of this research is to gain an understanding of the psychological well being, experiences and perspectives of personnel involved in the delivery of systemic cancer therapy in Ontario.

Specific objectives are: 1. to measure the point prevalence of burnout amongst systemic therapy personnel; 2. to assess the point prevalence of psychological morbidity amongst systemic therapy personnel; 3. to describe job satisfaction, job stress and work plans of systemic therapy personnel; and 4. describe the experiences, perspectives, concerns and suggestions for improvements related to work life of systemic therapy personnel.

Methods: A combination of qualitative and quantitative research methods were used to meet the objectives of the research.

Quantitative Methods. A cross-sectional postal questionnaire survey of all personnel involved in the delivery of systemic therapy in Ontario through regional cancer centres, Princess Margaret Hospital, or COMET (a network of community medical oncologists in the greater Toronto area). Physicians, allied health professionals and support staff were all surveyed. The survey questionnaire was comprised of a standardized measure of ‘burnout’ (the Maslach Burnout Inventory), a standardized measure of ‘psychological morbidity’ (the 12-item General Health Questionnaire), previously developed ‘job stress’ and ‘job satisfaction’ questionnaires (Ramirez et. al), and a series of demographic questions and questions about alternative work. A modified Dillman method was used to maximize response rates.

Qualitative Methods. Focus groups were held at selected cancer treatment centres across the Province. Centres were selected to provide a broad spectrum of perspectives (e.g., urban versus rural, north versus south, small versus large). Three focus groups were held at each centre, one with each of the following professional groups: medical staff, allied health professionals, and support staff. Data collection and data analysis occurred concurrently to allow for emergent themes to be explored with subsequent groups.

Results:
Survey. Of the 1,015 questionnaires that were mailed 27 were ineligible and 567 returned a completed questionnaire, giving an adjusted response rate of 57%; 63% for physicians, 65% for allied health professionals, and 47% for support staff. 55.4% of nurses and 60.0% of medical oncologists have spent over 10 years in the cancer care system in Ontario. 89.8% of nurses and 76.0% of medical oncologists spend more than 50% of their work time in direct clinical care.
For the overall sample, approximately one-third have considered leaving cancer care and approximately one-quarter have considered reducing the number of hours they work. 31.2% of nurses and 41.2% of medical oncologists report having given serious consideration to leaving their job for a job outside of cancer system. 4.3% of nurses and 48.2% of medical oncologists report having given serious consideration to leaving their job for a job outside the Province. 38.3% of nurses and 49.4% of medical oncologists report having given serious consideration to reducing the number of hours they work. 27.7% of nurses and 31.8% of medical oncologists report having given serious consideration to taking early retirement.

The prevalence of the three components of burnout for the overall sample was 39.6% with high emotional exhaustion, 8.1% with high depersonalization, and 44.0% with low personal accomplishment. 35.5% of nurses and 54.1% of medical oncologists have high emotional exhaustion, 4.3% of nurses and 24.7% of medical oncologists have high depersonalization, and 59.6% of nurses and 50.6% of medical oncologists have low personal accomplishment. The prevalence of psychological morbidity for the overall sample was 11.1%. 8.5% of nurses and 21.2% of medical oncologists have psychological morbidity. Medical oncologists show the largest prevalence when all four variables are considered together: one-quarter have psychological morbidity and high levels of depersonalization, half have high levels of emotional exhaustion and low levels of personal accomplishment.

Focus Groups. Six medical, five allied health professional and six support staff focus groups were held. A total of 108 systemic therapy personnel participated in the focus groups. All levels of systemic therapy staff cite patient care or patient contact as the greatest source of job satisfaction. All focus group members talked about how they once had a great sense of pride in being patient-centred. This feeling of pride has been eroded. All levels of staff state that patient care is suffering; that they no longer have the time or resources to treat patients with the care they need and deserve. They express frustration and embarrassment at the deterioration in care, as reflected in long waiting times in clinics, inability to obtain tests and test results in a timely fashion, lack of even basic supplies and equipment in examining rooms, and inability to offer patients effective new treatments.

Conclusions: The findings of this research support the concern that systemic therapy personnel in Ontario are experiencing burnout, decreased morale, and high levels of stress; and that large numbers of staff are considering leaving or decreasing work hours.

Systemic therapy personnel in Ontario represent a cadre of highly trained, committed professionals with a great deal of experience in cancer care and with many working years remaining to contribute to cancer care in the Province. The majority rate their job as satisfying overall: the principal source of job satisfaction being derived from providing high quality patient care. Many rate their job as stressful overall. The sources of stress are multifactorial, but are principally related to the large and growing number and complexity of cases, without a commensurate increase in human and material resources. All personnel state that this imbalance is leading to an erosion in the quality of patient care. Awareness of the distress this erosion is causing patients is, in turn, leading to feelings of distresses amongst cancer care workers. One measure of this distress is the prevalence of burnout, particularly amongst medical oncologists. Another measure is the number of cancer care workers who report having seriously considered decreasing the number of hours they work, leaving for a job outside of the cancer system or leaving for a job outside of the Province.
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1.0 INTRODUCTION

1.1 The Looming Crisis in Systemic Therapy

The document “On the Brink: The Looming Crisis in Systemic Therapy”\(^1\) points to the many stresses facing the system responsible for delivering systemic cancer therapy in Ontario. The stresses are multifactorial, from restructuring of the broader health care system to rapid advancements in treatment and increased consumer demand for state-of-the-art therapies. All of these factors have an impact on the day-to-day work environment of professional and support personnel in the systemic therapy program. Concern about the impact of these stresses has led Cancer Care Ontario (CCO) to convene a task force to review the systemic therapy program in Ontario.

The primary purpose of CCO’s Ontario Systemic Therapy Task Force is to identify immediate and long-term human resource requirements for all levels of professional staff including medical oncologists, nurses and other allied health professionals such as pharmacists. The Task Force will make recommendations on how to meet these requirements to the Board and senior management of CCO, and to other relevant stakeholders. An understanding of the psychological well being, experiences and perspectives of personnel involved in the delivery of systemic therapy is essential for fulfilling the mandate of the Task Force. While there are many anecdotal reports of decreased morale and ‘burnout’ amongst systemic therapy personnel, there is no research evidence to support or refute these reports.

1.2 Burnout and Psychological Morbidity amongst Health Care Workers

‘Burnout’ is the construct used to describe the psychological state resulting from stress in the professional life of health care workers. It was originally conceptualized as being related to contact with individuals who are suffering.\(^2\) It is characterized by physical and emotional exhaustion, depersonalization, and low productivity\(^3,5\) leading to apathy, suspicion, self-protection, disillusion and depression. Studies to measure the point prevalence of ‘burnout’ and ‘psychological distress’ amongst cancer physicians,\(^2,4,5\) cancer nurses\(^2,5\) and other specialist physicians\(^5,6\) have been conducted in the U.K.,\(^3,6\) the U.S.,\(^4\) and Italy.\(^2\) To our knowledge, no previous study has measured these factors amongst cancer care personnel in Canada.

Whippen and Canellos used a nonstandardized instrument to measure burnout in a random sample of clinical oncologists in the U.S.\(^4\) The proportion reporting burnout ranged from 40% to 62%, with higher proportions amongst those who spent 80% to 100% of their time in direct patient care and lower proportions amongst those in institutional or university settings with salaried positions. The authors concluded that coping with the problems of palliative and terminal care might be the single most important qualitative factor related to burnout.

Three studies used standardized instruments to measure levels of burnout (the Maslach Burnout Inventory)\(^7\) and psychological morbidity (the General Health Questionnaire)\(^8\) in health care providers in oncology.\(^3,5,6\) Use of these instruments, with demonstrated reliability and validity, provides a more methodologically sound basis for measuring these factors.\(^9\)

Ramirez et. al. estimated burnout and psychological morbidity amongst specialist physicians in the UK.\(^6\) The impetus for her research was the growing concern that reforms in the health care system in the UK threatened to increase stress and decrease satisfaction that doctors derive from their work. The specialist physicians studied were gastroenterologists and surgeons with considerable oncall responsibilities; oncologists with exposure to dying patients; and radiologists with responsibility for clinical support services. The study demonstrated that there was little difference between specialist groups. Roughly one-third of oncologists had scores consistent with burnout, and approximately 30% had high levels of psychological distress. Similar results were reported in the other two studies.\(^3,5\)

1.3 Summary

Concern over the stress experienced by health care personnel in this era of health services restructuring,\(^10\) against the backdrop of daily interaction with suffering and dying patients, compounded by the threat of a possible crisis in the delivery of systemic cancer therapy in Ontario because of insufficient human and material resources,\(^1\) has led Cancer Care Ontario to establish the Ontario Systemic Therapy Task Force.
The primary purpose of the Task Force is to identify immediate and long-term human resource requirements for professional staff responsible for delivery of systemic therapy. As part of its mandate, the Task Force needs a better understanding of the psychological well being of personnel involved in the delivery of systemic therapy, such as the point prevalence of burnout and psychological morbidity. It also required a better understanding of the views and perspectives of systemic therapy personnel on factors related to their work environment. This research has been commissioned by the Systemic Therapy Task to systematically document these factors.

2.0 OBJECTIVES OF THE RESEARCH

The overall objective of this research is to gain an understanding – by using a combination of quantitative (survey) and qualitative (focus groups) methods – of the psychological well being, experiences and perspectives of personnel involved in the delivery of systemic cancer therapy in Ontario.

Specific objectives are: 1. to measure the point prevalence of burnout amongst systemic therapy personnel; 2. to assess the point prevalence of psychological morbidity amongst systemic therapy personnel; 3. to describe job satisfaction, job stress and work plans of systemic therapy personnel; and 4. describe the experiences, perspectives, concerns and suggestions for improvements related to work life of systemic therapy personnel.

3.0 ETHICS

Approval to conduct this research was obtained from the Ottawa Hospital Research Ethics Committee.

4.0 PROVINCIAL SURVEY

4.1 Methods

Cancer Care Ontario is the provincial cancer control agency that coordinates cancer care through eight regional cancer centres (RCCs) providing tertiary level cancer care. The agency serves a population of over 18 million residents. The systemic treatment program of CCO is comprised of medical oncologists, staff physicians, allied health professionals and support staff based at RCCs and in the community. Together with CCO, both the Princess Margaret Hospital (PMH) in Toronto and a network of community oncologists in the greater Toronto area (COMET) represent most cancer care personnel involved in the delivery of systemic therapy in the Province.

A cross-sectional postal questionnaire survey of all personnel involved in the delivery of systemic therapy in the Province of Ontario was conducted. Survey subjects were identified from employee lists from each RCC, PMH and COMET. Subjects included physicians (medical oncologists and staff physicians), allied health professionals (nurses, pharmacists, social workers, dietitians, and hematology lab technicians) and support staff (unit coordinators, clinic attendants, scheduling clerks, receptionists and medical records staff). Survey responses were confidential. The covering letter explained that the purpose of the survey was to provide the Systemic Therapy Task Force with information about the experiences and perspectives of systemic therapy personnel. In order to prevent influencing respondents, they were not informed that a measure of burnout or psychological morbidity was included in the study questionnaire.

To maximize the response rate, a modified Dillman method was used:11 two weeks after the initial mailing a reminder notice was sent to non-respondents; after a further two weeks, a second questionnaire was sent to the remaining non-respondents.
The study questionnaire consisted of the following instruments:

i. **Job stress and satisfaction** were measured with a questionnaire designed by Ramirez and used in two studies of physicians’ mental health. The questionnaire was modified minimally in order to be relevant to all cancer care personnel (not just physicians) and included 25 specific sources of stress and 17 sources of satisfaction. Each source - stress/satisfaction - was rated by subjects according to the extent that it contributed to the overall stress and satisfaction they had experienced in their work during the previous few months on a scale from 0 to 3 (“Not at All” to “A Lot”). Global ratings of stress and satisfaction were obtained by asking staff, “Overall, how stressful/satisfied do you find your work?” on scales from 0 to 4 (“Not at All” to “Extremely”).

ii. **Psychological morbidity** was assessed with the 12-item version of the General Health Questionnaire, a valid and reliable screening tool for psychological morbidity in community samples and occupational settings. Twelve symptoms of psychological morbidity (e.g., depression, loss of confidence, sleep disorders) are rated according to whether they have been experienced in the past few weeks. Each item is scored 0 (“Not at All” or the “Same as Usual”) or 1 (“Rather” or “Much More than Usual”) giving a maximum score of 12. Individuals scoring 4 or more are estimated to have psychological morbidity according to studies validating the GHQ-12 against standardized psychological interviews. This instrument is the basis of determining the point prevalence of psychological morbidity in the study sample.

iii. **The Maslach Burnout Inventory (MBI)** is a widely used standardized measure of burnout. Each of the three components of burnout syndrome are measured by separate subscales: 1. **emotional exhaustion** (feeling emotionally over extended by work) is measured by nine items (e.g., “I feel emotionally drained from my work”); 2. **depersonalization** (unfeeling and impersonal response to people) is measured by five items (e.g., “I have become more callous to people since I took this job”); and 3. **personal accomplishment** (feelings of competence and achievement at work) is measured by eight items (e.g., “I have accomplished many worthwhile things in this job”). Each job-related feeling is rated on a 7-point Likert scale according to how often it is experienced from ‘never’ to ‘every day’. The total score for each subscale is classified as ‘low’, ‘moderate’, or ‘high’ according to pre-determined cutoff points based on normative data from a sample of American health professionals. This instrument is the basis of determining the point prevalence of burnout in the study sample.

iv. **Demographic and job characteristics** were assessed by a specific questionnaire developed for this study.

v. Each subject was also asked whether they had given serious consideration to leaving or altering their current job. Each subject was also asked to make any additional comments at the end of the questionnaire.

**Analysis**

Burnout scores were considered high if they were in the upper third of the distribution, moderate if they were in the middle third, and low if they were in the lower third. This approach is recommended by the developer of the scale and is consistent with other research. Burnout is defined as high levels of emotional exhaustion, high levels of depersonalization and low levels of personal accomplishment. Psychological morbidity was defined as a score of four or more on the GHQ-12. This approach is recommended by the developer of the scale and is consistent with other research. Bivariate associations between demographic and job characteristics were examined using the chi-squared test. Differences in the prevalence of psychological morbidity and burnout according to job characteristics were assessed using the chi-squared test. Correlations between the global stress and satisfaction ratings and high burnout scores and psychological morbidity were investigated using the Pearson Product Moment Correlation Coefficient. This method was also used to look at the relationship between items on the job stress questionnaire and overall stress, and items on the satisfaction questionnaire and overall satisfaction.

**Results**

**Response Rate**
A total of 1,015 questionnaires were mailed. This sample represented all personnel involved in the delivery of systemic therapy in Ontario through PMH, COMET, or the RCCs of CCO. This sample comprised 216 physicians (medical oncologists, staff physicians and other physicians); 405 allied health professionals (nurses, social workers, pharmacists, pharmacy technicians, dietitians, hematology lab technicians); and 394 support staff (unit coordinators, clinic attendants, scheduling clerks, receptionists and medical records staff).

Of the 1,015 questionnaires, 27 were ineligible (9 physicians, 2 allied health professionals and 16 support staff because they had moved or were on extended leave). Of the remaining 988, 567 returned a completed questionnaire giving an adjusted response rate of 57%. The breakdown of adjusted response rate by professional group is: 63% (131/207) for physicians; 65% (260/403) for allied health professionals; and 47% (176/378) for support staff.

**Characteristics of Respondents**

Demographic characteristics of the sample according to professional group are provided in Table 1. The majority of respondents are married and between the ages of 35 and 55. The majority of medical oncologists are male (82.4%) and the majority of nurses (97.9%), other allied health professionals (90.9%) and support staff (98.4%) are female. The majority of the nurses and medical oncologists have spent over 10 years in the cancer care system in Ontario (55.4% and 60.0%, respectively), and most spend more than 50% of their work time in direct clinical care (89.8% and 76.0%, respectively).
### TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF SAMPLE BY PROFESSIONAL GROUP (n = 555)*

<table>
<thead>
<tr>
<th>Professional Group</th>
<th>Medical Oncologists n = 85</th>
<th>Other Physicians n = 18</th>
<th>Nurses n = 141</th>
<th>Other AHP n = 88</th>
<th>Support Staff n = 184</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>82.4</td>
<td>44.4</td>
<td>2.1</td>
<td>9.1</td>
<td>1.6</td>
</tr>
<tr>
<td>Female</td>
<td>17.6</td>
<td>55.6</td>
<td>97.9</td>
<td>90.9</td>
<td>98.4</td>
</tr>
<tr>
<td>Married:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>84.5</td>
<td>55.6</td>
<td>76.6</td>
<td>75.0</td>
<td>70.3</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 35</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35 – 45</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45 – 55</td>
<td>34.1</td>
<td>23.5</td>
<td>39.9</td>
<td>25.3</td>
<td>28.0</td>
</tr>
<tr>
<td>55+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; 10 years in cancer care in Ontario</td>
<td>60.0</td>
<td>35.3</td>
<td>55.4</td>
<td>25.0</td>
<td>31.5</td>
</tr>
<tr>
<td>&gt; 50% of work time in direct clinical care</td>
<td>76.0</td>
<td>62.8</td>
<td>89.8</td>
<td>68.7</td>
<td>51.9</td>
</tr>
</tbody>
</table>

* ‘n’ does not sum to number of respondents because of missing data

### Proportion of Respondents Seriously Considering Alternative Employment

Respondents were asked a series of questions regarding possible alternative work. Specifically, they were asked whether they had **seriously considered** leaving their current job for a job outside the cancer system, leaving for a job outside the Province, reducing the number of hours worked, or taking early retirement. The responses to these questions according to professional group are provided in Table 2. The results show that 41.2% of medical oncologists, 31.2% of nurses and 50.0% of other allied health professionals have seriously considered leaving the cancer care system. Similarly, 49.2% of medical oncologists, 38.3% of nurses and 42.0% of other allied health professionals have seriously considered reducing the number of hours worked. The proportion of medical oncologists that have seriously considered leaving for a job outside Ontario is 48.2%.
TABLE 2: PROPORTION OF RESPONDENTS SERIOUSLY CONSIDERING ALTERNATIVE WORK (n = 555)*

<table>
<thead>
<tr>
<th></th>
<th>Medical Oncologists n = 85</th>
<th>Other Physicians n = 18</th>
<th>Nurses n = 141</th>
<th>Other AHP n = 88</th>
<th>Support Staff n = 184</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seriously considered:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaving for a job outside the cancer system</td>
<td>41.2</td>
<td>38.9</td>
<td>31.2</td>
<td>50.0</td>
<td>31.0</td>
</tr>
<tr>
<td>Leaving for a job outside the Province</td>
<td>48.2</td>
<td>22.2</td>
<td>4.3</td>
<td>12.5</td>
<td>4.3</td>
</tr>
<tr>
<td>Reducing the number of hours worked</td>
<td>49.4</td>
<td>50.0</td>
<td>38.3</td>
<td>42.0</td>
<td>27.7</td>
</tr>
<tr>
<td>Taking early retirement</td>
<td>31.8</td>
<td>22.2</td>
<td>27.7</td>
<td>17.0</td>
<td>11.4</td>
</tr>
</tbody>
</table>

* ‘n’ does not sum to number of respondents because of missing data

Overall Job Satisfaction and Job Stress

The proportion of respondents indicating high overall job satisfaction and high overall job stress according to professional groups is shown in Table 3. Most respondents in each professional group indicated high overall job satisfaction. At the same time, however, one-third of the sample indicated high overall job stress. Medical oncologists indicated both the highest overall job satisfaction (95.7%) and the highest overall job stress (43.1%).

For the overall sample, the global rating of job stress is most strongly associated with having too great a volume of work (r=0.58), feeling under pressure to make deadlines (r=0.48), having inadequate staffing to do the job properly (r=0.47), having conflicting demands on time (r=0.46), and disruption of home life through spending long hours at work. The regression analysis shows that the global rating of job stress was related to high emotional exhaustion (r=0.63).

For the overall sample, the global rating of job satisfaction is most strongly associated with feeling professional experience is used to the fullest (r=0.47), having variety in the job (r=0.41), and deriving intellectual stimulation from work (r=0.43).
## TABLE 3: OVERALL JOB SATISFACTION AND JOB STRESS BY PROFESSIONAL GROUP

<table>
<thead>
<tr>
<th></th>
<th>Medical Oncologists n = 85</th>
<th>Other Physicians n = 18</th>
<th>Nurses n = 141</th>
<th>Other AHP n = 88</th>
<th>Support Staff n = 184</th>
<th>Overall Sample n = 566*</th>
</tr>
</thead>
<tbody>
<tr>
<td>High overall job satisfaction</td>
<td>95.7</td>
<td>88.9</td>
<td>93.3</td>
<td>83.8</td>
<td>79.8</td>
<td>87.2</td>
</tr>
<tr>
<td>High overall job stress</td>
<td>43.1</td>
<td>29.4</td>
<td>38.6</td>
<td>39.0</td>
<td>21.8</td>
<td>32.5</td>
</tr>
</tbody>
</table>

* ‘n’ does not sum to number of respondents because of missing data

## Prevalence of Burnout and Psychological Morbidity

Prevalence of psychological morbidity and burnout according to professional group are reported in Table 4. The prevalence of psychological morbidity for the overall sample is 11.1%. However, medical oncologists show the largest prevalence of psychological morbidity at 21.2%. More than one-third of the overall sample, and at least one-third within each professional group, have high levels of emotional exhaustion and low levels of personal accomplishment. The prevalence of low personal accomplishment is largest amongst nurses (59.5), the prevalence of high emotional exhaustion is largest amongst other physicians (61.1%), and the prevalence of high depersonalization is largest amongst medical oncologists (24.5). However, medical oncologists show the largest prevalence when all four variables are considered together: one-quarter have psychological morbidity and high levels of depersonalization, half have high levels of emotional exhaustion and low levels of personal accomplishment.

## TABLE 4: PREVALENCE OF PSYCHIATRIC MORBIDITY AND BURNOUT BY PROFESSIONAL GROUP

<table>
<thead>
<tr>
<th></th>
<th>Medical Oncologists n = 85</th>
<th>Other Physicians n = 18</th>
<th>Nurses n = 141</th>
<th>Other AHP n = 88</th>
<th>Support Staff n = 184</th>
<th>Overall Sample n = 566*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological morbidity</td>
<td>21.2</td>
<td>16.7</td>
<td>8.5</td>
<td>11.4</td>
<td>9.2</td>
<td>11.1</td>
</tr>
<tr>
<td>Burnout:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High emotional exhaustion</td>
<td>54.1</td>
<td>61.1</td>
<td>35.5</td>
<td>40.9</td>
<td>33.2</td>
<td>39.6</td>
</tr>
<tr>
<td>High depersonalization</td>
<td>24.7</td>
<td>5.6</td>
<td>4.3</td>
<td>5.7</td>
<td>5.4</td>
<td>8.1</td>
</tr>
<tr>
<td>Low personal accomplishment</td>
<td>50.6</td>
<td>33.3</td>
<td>59.6</td>
<td>45.5</td>
<td>30.4</td>
<td>44.0</td>
</tr>
</tbody>
</table>

* ‘n’ does not sum to number of respondents because of missing data
Comparison of Prevalence of Burnout with Previous Studies

Table 5 shows the prevalence of burnout amongst medical oncologists measured in this study as compared with the prevalence reported in the literature. Comparison is made with two relevant comparison groups: Canadian emergency physicians\textsuperscript{13} and UK medical oncologists\textsuperscript{3}. All three of the studies were conducted because of concern about the effect of changes within the health care system on the mental health of physicians. All three studies used the Maslach Burnout Inventory as the measure of burnout and, hence, are directly comparable.

Canadian emergency physicians showed the largest prevalence of depersonalization. This sample of Ontario Medical Oncologists showed the largest prevalence of high emotional exhaustion and low personal accomplishment.

<table>
<thead>
<tr>
<th>BURNOUT SUBSCALE</th>
<th>UK Medical Oncologists\textsuperscript{3} %</th>
<th>Canadian Emergency Physicians\textsuperscript{13} %</th>
<th>Ontario Medical Oncologists %</th>
</tr>
</thead>
<tbody>
<tr>
<td>High emotional exhaustion</td>
<td>25.0</td>
<td>13.0</td>
<td>54.0</td>
</tr>
<tr>
<td>High depersonalization</td>
<td>15.0</td>
<td>61.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Low personal accomplishment</td>
<td>34.0</td>
<td>44.0</td>
<td>51.0</td>
</tr>
</tbody>
</table>

5.0 PROVINCIAL FOCUS GROUPS STUDY

5.1 Methods

In order to gain an understanding of the experiences, perspectives, concerns and suggestions for improvements related to work life of systemic therapy personnel in Ontario, focus groups were held at a selected sample of cancer treatment facilities across the Province. A focus group approach allows for in-depth data to be collected from multiple participants in a relatively short time. As well, this approach is useful in distinguishing between shared and variable perspectives, and identifying the needs of particular groups and communities.

Focus groups were held at six cancer treatment facilities in the Province: five RCCs and PMH. Facilities were selected in order to provide a broad spectrum of perspectives (e.g., urban versus rural, north versus south, small versus large). Three focus groups were held at each cancer treatment facility, one with each of the following professional groups: medical staff (oncologists and staff physicians); allied health professionals (nurses, pharmacists, pharmacy technicians, hematology lab technicians, dietitians, and social workers); and support staff (unit coordinators, clinic attendants, booking, scheduling clerks, receptionists, and health records staff).

In order to facilitate discussion, a set of topic areas of interest were identified. Questions related to these topic areas included: perceived changes in job demands with changes in the health care system; quality of care and work; opportunities for professional development, education and research; material and personnel support; and job satisfaction. The focus group questions were pilot-tested for their relevance and clarity by a key member of each of the three groups: medical, allied health professional and support staff.
Each cancer treatment facility was sent a protocol that provided guidelines for recruiting participants to the focus groups. The aim of the protocol was to optimize representation (e.g., to include a mix of junior and senior staff). Where possible, an attempt was made to have six to eight participants in each group; however, the number of available staff limited the size of some groups. Participation was voluntary. Attempts were made to avoid having staff attend a group at which a direct supervisor was also present. Each focus group session lasted 1 to 1½ hours.

Each focus group member signed a consent form specifying that he or she agreed to participate in the group. Separate consent was obtained for the use of quotes or paraphrases in publications emerging from the study.

The same researcher facilitated all focus groups in order to ensure consistency. The facilitator’s main role was to ensure that each group covered all of the identified topics. Three co-facilitators assisted at two centres each. Co-facilitators were responsible for operating the recording equipment, ensuring that the consent forms were signed, and ensuring that all participants had an opportunity to speak and ask questions during the group.

Focus groups were audio-taped and the tapes transcribed by transcribers employed outside the Centre. All transcripts were coded with a numeric identifier. Personal names on the tapes were replaced by asterisks. Audiotapes, transcripts and consent forms were kept in a locked cabinet.

5.2 Analysis

Data collection and data analysis occurred concurrently to allow for emergent topics to be explored with subsequent groups. Data issues were discussed and clarified at team meetings as they arose. Focus groups continued to be conducted until there was a saturation of themes (i.e., no new topic emerged from the analysis).

Following the transcription of all focus groups, the facilitator and one co-facilitator – both experienced qualitative researchers – derived a list of potential themes based on their experience with the groups. A small selection of transcripts was then read independently by the two researchers; potential themes were further expanded upon and a definition for each was established. Themes were then grouped into broader headings. Common and unique themes were identified.

One transcript from each of the three major personnel groups was selected at random. Using the expanded list of themes, the two researchers independently coded each transcript. Transcripts were then compared to assess the level of agreement between the two coders. Disagreements between assigned codes were used to further sharpen theme definitions. All transcripts were then coded using the revised list. Quotes were identified that best illustrate the themes.
5.3 Results

5.3.1 Study Sample

Six medical (MD), five allied health professional (AHP) and six support staff (SS) focus groups were held in October and November of 1999. A total of 108 systemic therapy personnel participated in the focus groups. Table 6 provides a breakdown on the number of personnel participating in each focus group.

Table 6: Focus Group Numbers by Facility and Professional Group

<table>
<thead>
<tr>
<th>Facility</th>
<th>Medical</th>
<th>Allied Health Professional</th>
<th>Support Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>8</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>*</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>29</td>
<td>41</td>
<td>38</td>
</tr>
</tbody>
</table>

* An allied health professional group was not held at this facility because of poor weather.

5.3.2 Themes Emerging Across Professional Groups

All levels of systemic therapy staff cite patient care or patient contact as the greatest source of job satisfaction. This is the case even for those staff that have little direct patient contact. There is an acute awareness amongst all staff that their job – whether it involves filling chemotherapy bags, analyzing blood work or transcribing physician notes – is linked directly to a person who has cancer. Oncology is seen as a special environment primarily because of the types of relationships cancer care workers establish with patients and their families. These relationships are often longstanding; cancer care workers may be involved with a patient over many years from diagnosis to palliation.

... one of the things I really like about Oncology is that fact that especially here with the primary care model you get the chance to establish a rapport with the patients and families... you carry along that special relationship and support, the ties get a chance to develop over the years, and that to me is something very special and I enjoy it tremendously. (AHP)

I am from the health records department... we don’t have direct patient contact in our area but we are the hub or silent background people... I treat each chart as a patient’s life... a mundane job such as filling a chart for a file clerk is not so mundane when you realize each of these charts is a person’s life. (SS)

While systemic therapy staff raise many issues related to their work environment, there is an overall sense of concern that inefficiencies in the system affect the patient most of all. They feel frustrated and, in some cases, embarrassed by the level of care patients are now receiving. A multitude of factors are cited as instrumental in the deterioration of patient care. Overall, systemic therapy staff feel that they are able to do less and less for the individual patient. As a result, morale is suffering. These themes are described below and selected quotes are used to highlight the points made during the focus groups.

5.3.2.1 Themes Related to the Quality of Patient Care
At each cancer treatment facility, staff talked about how they once had a great sense of pride in being patient-centred. This has been eroded. All staff state that patient care is suffering. None of the staff feel they have the time or resources to treat patients with the care they deserve. A few staff members mentioned the guilt they feel about the situation.

I would like to be able to do my job in the way I can do it… to have the supports necessary in clinics, and with the medical records so that I could see a new patient and evaluate them quickly and efficiently and know the next time they come back that all the information was there so that I didn’t have to apologize and bring them back two weeks later. I would also like to have a clean clinic room to seat them in and have batteries in the flashlight… a robe to cover the patients with. I mean it’s so third world, it’s embarrassing, I mean this is a brand new building and I find it acutely embarrassing not to have those things. (MD)

It’s true that the workload has increased and adds on our jobs but the bottom line is it’s always the patient care at the end that is suffering the most of all… but the bottom line is always the patient at the end that is paying for this crisis. (AHP)

Cancer care workers feel that cancer patients, because of the nature of their disease, need to have a positive relationship with the Centre as a whole. They feel that patients need to have a central person who coordinates their care in an ongoing relationship. Patients need to know where to go to receive the various services required, to feel that steps will be taken quickly to begin treatment and assess whether treatments are working. It is acknowledged that the patients are sick and anxious and that they need a level of comfort during the time they are at the Centre. Staff feel that it is unacceptable that patients are kept waiting for phone calls or sitting in waiting rooms for hours.

…now they can wait as much as two hours to come into the CTU (Chemotherapy Treatment Unit)... it’s hard on them... it’s hard on us because we know they’re unwell... What a patient said one day was, “You have lots of time, my time is very short”. (AHP)

…there was some sort of relationship with the patient where they understood that the treatment might not be going to cure the disease, but there was sort of a good relationship that built up. Now one senses that’s not always present, that there’s more hostility, the patients and their families because of all the frustrations in the system and somehow those get sort of reflected onto you. Perhaps we’re over sensitive to that, that it isn’t such a big issue but I personally sense that it is. (MD)

So many phone calls a day… if I’m doing a clinic, it’s very hard for me to get back and some of the patients are very ill at home, and sometimes we don’t get back to them till the end of the day. We should be calling them soon after they call and the clerks are running off their feet trying to get orders done, phone calls. Like you said the phone was ringing off the hook today. We get very frustrated and orders get missed and what not. (AHP)

Basic care at the Centres is seen to have deteriorated. Even facial tissues seem to be a rare commodity in some places. Basics such as pillows, blankets, blanket warmers, water coolers, and enough seating in waiting areas are in short supply. Basic medical equipment such as IV poles and pumps, ambulatory infusion pumps, flashlights, reflex hammers, and batteries are also mentioned as scarce or poorly maintained resources. Often there is nobody responsible to make sure that these things are ordered, stocked and maintained.

Hopefully your patients won’t cry because sometimes there’s no kleenex in the room and you may have to go to another clinic to find kleenex. The equipment does exist in the hospital, it’s just there isn’t the infrastructure to actually look after that and say each clinic room shall have the following and this person is responsible. It doesn’t happen. (MD)

We were talking about kleenex or tendon hammers in the room, well the only people who care about that area are the patients. The only people who care about if there’s clean linen or tongue depressors and kleenex are the patients. And basically who cares about them, like it
doesn’t matter what they think if they walk into a room where there’s no kleenex. Like we just accept that it’s okay we don’t have somebody who knows how to stock the room properly or even to ask, so we just sort of shrug and say well it’s not going to happen. But every single one of my patients that comes into that room must wonder what the hell is going on. Well, the people who are affected by that are exactly the people for whom this building exists. But who bears the brunt of all of this? It’s the people we’re supposed to be looking after. Which I find the most frustrating… is who’s forgotten. And it’s definitely true that they are forgotten and that isn’t just a sappy statement, it’s really true. (MD)

We have awful trouble to get IV poles and IV pumps. (AHP)

Staff feel that patients are receiving inadequate care. Part of the problem is staff and room shortages. Part of the problem is that there is no hard ceiling on the number of patients that can be accommodated (in comparison with, for example, radiotherapy where limits on radiation equipment determine the number of patients that can be treated). In the systemic therapy program all patients have to be seen and have to be accommodated. Consequently, there are long waits before being seen at the Centre, long waits for tests, and long waits for test results. Patients are often rescheduled. Mistakes are being made (such as, for example, lost test results, incomplete charts, charting and filing errors). Patients are waiting longer to see the physician and longer for their chemotherapy treatment. When they are seen, they have less time with a professional, support staff do not have time to attend to their needs while they wait, waiting areas are crowded and there is a lack of space in which information can be obtained from the patient confidentially. Patients are frustrated and this frustration is often taken out on staff.

It has been unbelievable. I find it absolutely unacceptable that patients wait a month to five weeks before the tests are done and they live with this anxiety, their families live with this anxiety. I find that this has been a result of the cutbacks, and I think that is an absolute tremendous disservice done not only to our patients, probably every patient, but perhaps more acutely with cancer patients when there is already such a level of anxiety, despair, fear and chaos in their lives. We order a test and they sit at home and wait four weeks, another week and a half to get results, another week and a half to come and see us and talk about the results. Absolutely unacceptable and if that is a result of the cutbacks and I could make one wish it would be that that would change. (MD)

… the phone never stopped ringing in the last hour and I was trying to teach someone about her outpatient injections and there was another new patient the other nurse was trying to deal with plus our other patients and then they started paging when we wouldn’t answer the phone and you know you cannot do this type of nursing without the proper staffing… I mean I enjoy my job, I like my job but it does get frustrating when you can’t give the quality of care that you should be giving. (AHP)

With the backlogs, you’re two hours behind… the patients come in and yell at you, and you say, “We’re doing the best we can, you have a problem call the doctor”. As soon as he [the doctor] walks in, they say, “Hi how are you?” But they have no problem yelling at the clerk out front or the nurse. But, their waiting time is atrocious in the clinics. It’s really bad. (AHP)

One of the hardest parts of our job is the amount of abuse that we take from patients and their families in the waiting rooms. …people would be charged with abuse if anybody every heard the way some of the people speak to you. That part is really really hard to take. (AHP)

5.3.2.2 Themes Related to Working Conditions

All levels of staff are looking for some stopping rules. Physicians want standards for the length of appointments so they can justify spending adequate time with each patient without feeling like the ‘assembly line’ is being stalled. They want standards for waiting times for treatment and waiting times for tests and test results. At the same time, they are concerned that the standards not become rigid policies that further restrict their practice. All levels of staff want workload standards to protect them from being
pressed beyond their limits. They feel there is nothing inherent in the system to protect them. While surgeons have limitations resulting from operating room availability, and radiation oncologists are restricted by the availability of radiation machines, there is no hard cap on systemic therapy services.

…[they need to] give us guidelines as to what would be acceptable in terms of treatment or how soon treatments should be instituted or how soon one can get tests, because at the present time there is a lot that is unacceptable and there are not a lot of safeguards. (MD)

All levels of staff feel that their workspaces have become inadequate. They are feeling overcrowded. They don’t have enough room to do their work, and inadequate conditions cause unnecessary frustrations and sometimes results in stress injuries. There is a shortage of meeting areas. Family conferences, staff meeting and colloquia are cancelled because of lack of meeting rooms.

Staff activities are now spilling over into public or patient space. Patient charts are kept in more public places. Patients are being weighed in hallways, private information is being delivered in public places, patients are being asked personal information in front of other patients. Social workers and clinical trials nurses are sequestering patients into corners in order to conduct their work. Patient confidentiality is no longer a minimum standard, it is a luxury.

Inadequate staffing at all levels is a major concern. Everyone is affected by the lack of staff at every level. For instance, health records staff, allied health professionals, and oncologists all ask for more health records staff. Clerical staff and booking clerks are pressured to accommodate patients in a timely fashion yet there are not enough oncologists to open more clinics. When oncologists have to cancel a clinic the booking clerks feel desperate because they must rebook patients beyond the recommended times. This means they must seek authorization for new bookings, taking up nursing time that is also in short supply. One oncologist stated that transcription and scheduling were understaffed at crisis levels in his Centre. Staff are asking that their working conditions be made adequate: for example, a few hours extra coverage when overwhelmed; coverage to go on breaks, lunch or even to the bathroom; coverage when ill.

Physicians would like to have lighter caseloads so they can spend the time that is required for each patient. Physicians want access to new treatments as they become available. Allied health professionals and physicians want to be able to continue to learn and develop professionally. Physicians would like to be able to have time to participate in research, write protocols, discuss trials with patients, and have adequate staff to be able to participate in trials. In some Centres there is a moratorium on clinical trials because of shortages of clinical trials staff. In other Centres the main determinant of whether a clinical trial is implemented is not the research question but, rather, the staff and other resources that are required to conduct the study.

… we have to be fairly sure that the support system to do with any program or any advancement is there. We need the support… more support staff… like social workers. Support for the patient has to be there. (MD)

They need more oncologists. (SS)

We need more staff. Right across the board, pharmacy, nursing, you name it. (AHP)

It is a great dissatisfaction to waste a lot of time doings things I wasn’t trained for and not primarily benefiting the patients, [which is] one of the things I was trained for. (MD)

5.3.2.3 Themes Related to Morale of Personnel

Many staff express that they have reached the limit of the amount of work they are able to do. Other staff seem to be experiencing burnout. One of the contributing factors is lack of time to adjust to what is perceived as a workplace under constant change. It has become more difficult to maintain a balance even outside the workplace. Within the work place, they no longer have time to do aspects of their job that used to be a source of rejuvenation (such as involvement with teaching and research). They are feeling hopeless
and powerless about the current situation and the future. The concern is that unless something is done, staff will leave.

One of the phenomena that we are seeing is that more and more people are choosing to work part-time and the result of that is a decrease in manpower and maybe the same number of bodies in the centre but the actual number of fulltime equivalent positions has dropped. So it’s quite common now to have people working four days a week or even three. Now, it is an option as a survival mechanism and there are a lot of people who are close to burn out and if the system does not soon recognize that and do two things; we need two things: we need reasonable workload standards with adequate support and we need adequate compensation. (MD)

It’s gotten to a point where I think everybody is taxed; everybody is at their limit and trying to do more and more. (AHP)

In fact, the way we operate, we operate very close to the edge. I mean if something changes, someone gets sick or somebody leaves or something happens, we are in big trouble. (MD)

Every day, every morning, I’m coming earlier every morning and I leave late every night… It’s like there’s no catching up… And, with chemo you can’t catch up, it doesn’t matter how early you come or how late you stay, there’s always more and more. (AHP)

We’ve had a decrease in our system where all sorts of people are taking stress leave and what is overriding in all of this I think it really creates a sense of hopelessness and a sense of futility about it, that it’s never going to get better, that we’re always going to be laboring under these conditions. In 1990… I had a backbreaking clinical load… but qualitatively, it was different. I didn’t have a sense of futility about it. But I do now. (MD)

I would like to send a very strong message to the Task Force and management that if things are not done quickly, things will get worse. People will go. People have already gone. (MD)

I suddenly had this vision about all of us being a bit like the orchestra on the Titanic, pretending everything’s okay for our patients, putting on a front for the patients, but I think the ship’s about to go under. (MD)

5.3.3 Themes Emerging Specific to Professional Groups

Each of the three types of focus groups - physicians, allied health professionals, and support staff - identified issues specific to their own professional group. These are summarized in point form below.

5.3.3.1 Themes Specific to Physicians

- There is a shortage of medical staff. There are not enough new physicians in Canada to remedy this situation. Consequently, medical oncologists have enormous caseloads and insufficient time for patient care.

- The pay scale for oncologists does not adequately compensate for the complexity of the oncology casemix. Consequently, oncologists must see more patients than other specialists in order to reach comparable incomes.

- Oncology patients need and demand a great deal of discussion and counseling in the management of their illness, and this cannot be completed within standard visit times.

- Accessing medications is increasingly difficult and time consuming.

5.3.3.2 Themes Specific to Allied Health Professionals
• Allied health professionals feel they no longer have the time to practice to the highest standards of their respective professions. Increased patient volume and acuity result in an ‘assembly line’ approach in order to meet the demands (for example, nurses rarely have time to do thorough and comprehensive assessments or patient teaching).

• Many are not able to take advantage of educational opportunities. There is no time for professional development activities such as in-services, seminars, or conferences because of workload demands.

• Electronic programs for charting patient information are frequently cumbersome and inefficient to use. Allied health professionals are seldom consulted in the development of software programs, especially when the programs are put in place by the host hospital.

• More and more patient care is managed in the community. As triage is the interface between the Centre and the community, this has resulted in a large increase in the demand for triage support. At the same time, there is a perception that the quality of care provided in the community, specifically through Community Care Access Centres, has diminished. Nurses in the Centres are not able to monitor and follow-through on patients being cared for in the community. This is leading to the worry and guilt that result from having the responsibility of managing care but no authority regarding the provision of care.

5.3.3.3 Themes Specific to Support Staff

• Being appreciated (by patients and professionals) for the jobs they do is very important to support staff. They are the most accessible to patients and families and, consequently, are increasingly on the receiving-end of people’s frustrations with the cancer care system. Likewise, support staff often receive the force of professional staff’s frustrations with system inefficiencies as well.

• Support staff are the least likely to be consulted about their needs for space or equipment. The result is working conditions that are crowded, awkward, and inefficient. They also work without ready access to basic equipment such as telephones, printers, fax machines, etc.

• As salary levels are often not competitive, support staff positions are difficult to fill. This results in long periods of staff shortages and work backlogs. Casual employees work many more hours than originally intended. New staff often leave because of the heavy job demands. The resultant high staff turnover results in greater training demands and even more time taken away from core duties.

6.0 DISCUSSION

This cross-sectional study used a combination of qualitative and quantitative research methods to get a ‘snapshot’ of the psychological well being, levels of burnout, and factors related to job stress and job satisfaction of cancer care providers in the systemic cancer therapy program in Ontario. While there has been growing concern over anecdotal reports of burnout, decreased morale, high levels of stress, and large numbers of staff leaving or decreasing work hours, no research has systematically documented the situation. This research was commissioned by the Systemic Therapy Task Force to determine whether there was evidence to support these concerns. The findings of this study suggest that there is.

6.1 The Study Sample

The survey included all physicians, allied health professional and support staff of PMH and CCO’s systemic therapy program, and all medical oncologist members of COMET (a network of community medical oncologists in independent practice in greater Toronto). Not included in the survey sample were medical oncologists in independent practice elsewhere in Ontario or family physician and other community-based providers of
systemic therapy, follow-up care, and palliative care to cancer patients. Similarly, these same groups did not participate in the focus groups. The results of this research are, therefore, only generalizable to the ‘formal’ systemic cancer therapy program in the Province.

An overall adjusted response of 57% was obtained for the survey. This overall response rate was due to the relatively low response rate of 47% for support staff. A response rate of 47% warrants circumspection in interpretation of results. The low response rate for support staff may be the result of several factors: support staff are the most transient and mailing lists may not have been current or questionnaires may not have been distributed to them in a timely manner. However, a very good response rate was obtained both for physicians (63%) and for allied health professionals (65%).

6.2 Job Satisfaction

Most systemic therapy personnel rate their job, overall, as satisfying. The focus group results point to the principal source of job satisfaction deriving from contact with patients and patients’ families, together with a sense that their work will help a person with cancer. This is the principal source of job satisfaction even for those not directly involved in patient care such as, for example, staff in the medical records departments.

6.3 Job Stress and Burnout

The finding that more than one-third of the overall sample exhibit high levels of emotional exhaustion and low levels of personal accomplishment is consistent with other research. However, approximately half of medical oncologists exhibit high emotional exhaustion and low personal accomplishment, and approximately one-quarter exhibit high depersonalization. The prevalence of depersonalization was higher amongst Canadian emergency physicians. However, the prevalence of all three components of burnout amongst medical oncologists in this study is higher than reported in a similar study of medical oncologists in the UK.

6.4 Personnel Considering Alternative Work

The study sample represents a group of individuals with a great deal of experience in cancer care: more than half of medical oncologists and nurses and between one-quarter and one-third of allied health professional and support staff have spent more than 10 years in cancer care in Ontario. The majority of all professional groups spend more than 50% of their work time in direct clinical care. The majority of the sample are in their middle years, with more than ten years remaining before retirement at age 65. Despite many years of work within the cancer care system in Ontario, one-third of the overall sample have seriously considered leaving cancer care and one-quarter have seriously considered reducing the numbers of hours they work. Amongst ‘other allied health professionals’ the proportion is even higher with half having considered leaving cancer care and 42% having considered reducing work hours. Similarly, approximately one-third of nurses have considered leaving cancer care and reducing work hours. The data for medical oncologists is even more striking with almost half having considered leaving their current job for a job outside the Province.
6.5 Limitations of the Research

Survey respondents and focus group participants were aware that the Ontario Systemic Therapy Task Force commissioned this research to present to the Board of Directors of CCO and to the Ministry of Health. The possibility that this knowledge influenced survey responses must be considered. If this were the case, all professional groups would have had equal motivation to select negative responses; however, the variability in responses both within and between groups, and the high overall job satisfaction ratings, suggest no such influence. Moreover, survey respondents were not aware that the questionnaire included a standardized measure of burnout and a standardized measure of psychological morbidity. Both instruments have been validated in workplace settings where a similar such factor would have been present.

Questions about considering alternative work raise similar concerns: were respondents influenced by knowledge of the overall mandate of the Systemic Therapy Task Force? While this possibility cannot be refuted with certainty, strong supporting data for these findings are reported elsewhere in the Systemic Therapy Task Force Report: data on the proportion of staff decreasing the number of hours they work, the number of medical oncology residents taking positions outside the Province, and the number of vacant medical oncology positions that cannot be filled are all consistent with the results reported here.

The results of a cross-sectional survey such as this do not allow conclusions to be drawn about causation or about changes over time. While there is clear evidence of burnout, the causes of burnout cannot be determined from this research. Nor can any conclusions be drawn about whether there has been a change in the prevalence of burnout concurrent with changes in either the cancer care system or the broader health care system. Similarly, one cannot extrapolate from the results of this survey to predict the proportion of personnel that will reduce their work time, leave cancer care or leave the Province.

7.0 CONCLUSIONS

Systemic therapy personnel in Ontario represent a cadre of highly trained, committed professionals with a great deal of experience in cancer care, and with many working years remaining to contribute to cancer care in the Province. The majority rate their job as satisfying overall: the principal source of job satisfaction being derived from providing high quality patient care. Many rate their job as stressful overall. The sources of stress are multifactorial, but are principally related to the large and growing number and complexity of cases without a commensurate increase in human and material resources. All personnel state that this imbalance is leading to an erosion in the quality of patient care. Awareness of the distress this erosion is causing patients is, in turn, leading to feelings of distresses amongst cancer care workers. One measure of this distress is the large prevalence of burnout, particularly amongst medical oncologists. Another measure is the large number of cancer care workers who report having seriously considered decreasing the number of hours they work, leaving for a job outside of the cancer system or leaving for a job outside of the Province.
8.0 REFERENCES


## Summary of CCO Staffing for Systemic Therapy and Caseload
### Fiscal 1999/2000

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Appendix E

Medical Oncology Position Paper

Introduction

The need for systemic therapy services in Ontario is presently reaching or exceeding the capacity of the system. There is a well-documented human resource shortage in medical oncology that is expected to worsen over the next few years, if urgent actions are not taken. The reasons for the current situation are multifactorial, but include the following:

a) Low entry into medical oncology training positions;

b) A net exodus of medical oncologists to other jurisdictions;

c) Unprecedented rises in the demand for clinical services.

The background to and consequences of these changes is comprehensively covered in other areas of the Systemic Therapy Task Force (STTF) document and its appendices.

This position paper briefly comments on the current situation and then puts forward a new model for medical oncology care delivery in the province of Ontario. The recommendations are based upon discussions arising from the November 3, 1999 Systemic Therapy Workshop and upon parallel position papers developed for oncology nursing, oncology pharmacy and clinical associates. It takes into account recommendations from the recent MOPAC Manpower Study.

a) Entry into Medical Oncology Training Positions

Medical Oncology is a subspecialty of internal medicine. A fully trained medical oncologist has successfully completed three years of internal medicine and two further years of subspecialty training in a recognised medical oncology training program. Many trainees continue in fellowships for one or two more years after certification training before seeking a staff position in an academic institution, a non-academic cancer centre or a community oncology setting.

For several years, it has been difficult to attract internal medicine residents into medical oncology subspecialty training positions. Poor exposure to oncology content in the curricula or to medical oncologists as role models during the early undergraduate or post-graduate years is common in Ontario medical schools. Some schools do not emphasise cancer in the undergraduate curriculum and medical oncology is often not a required rotation during the three-year training in internal medicine.

It is also well recognised that potential recruits in Internal Medicine are dissuaded from choosing a career in Medical Oncology by the perception that the work life of a medical oncologist is associated with high stress levels and constant exposure to patients suffering with advanced cancer. Residents are well aware of the increasing medical oncology workload and of the decreasing opportunities to have a fulfilling career as a researcher or educator.

b) Actual or Potential Exodus of Trained Medical Oncologists from Ontario

Several other provinces are now able to provide better working conditions due to established workload standards, better financial compensation and protected time for academic activities. In the past few years, a number of well-trained medical oncologists have left the province of Ontario for other provinces, or the United States. In addition, newly trained oncologists have chosen to
start their careers elsewhere, either in the USA or in other provinces in Canada, particularly in
British Columbia.

Cancer Care Ontario estimates the current deficit of medical oncologists within the formal system
to be at least 34. This deficit needs to be acknowledged and addressed by both the Ministry of
Health and the Ministry of Education. At the present time, many of the regional cancer centres
have two or more unfilled vacant positions. Including the PMH and the informal community
system, the provincial deficit of medical oncologists is undoubtedly much higher.

More disturbingly, the recently completed Cancer Care in Ontario Professional Employees
(CCOPE) Study, which accompanies the Systemic Therapy Task Force Report, reveals insights
about the intentions of those medical oncologists presently remaining in Ontario. 48.2% of
respondent medical oncologists indicated in a questionnaire survey that have given serious
consideration to leaving their job for one outside the Province. In addition, 49.4% respondents
have considered reducing the number of hours they work.

c) Unprecedented Rise in Demand for Services

The background for the rise in demand for medical oncology services is discussed more fully in
the main Task Force document. Over the past four years (1994/5 – 1998/99) there has been a 28%
increase in new cases to the Systemic Therapy Programs at CCO cancer centres. During this
same period, the budget for the actual delivery of systemic therapy services has increased by only
3.9%.

CCO’s New Drug Program has provided Ontario patients access to innovative new treatments
and has opened up new options for second and third line therapy. However, funding has been
provided for the cost of the drugs only and medical oncologists and other staff have had to
accommodate the extra workload with virtually no increase in resources. This is compounded by
the fact that the new drugs often more complex to deliver and have new and different toxicities
compared with the older drugs. Thus the systemic treatment units have experienced workload
increases considerably in excess of the overall 28% new cases to the programs over the past four
years.

At the same time the expectations of patients and their families have increased enormously.
Patients are more knowledgeable, surf the Internet, require greater explanation of their options
and alternatives and yet expect to receive their services in a timely manner and in an environment
adequately equipped for their needs. In order to meet increasing patient care demands, the time
available for teaching future oncologists and for research has decreased very significantly.

The consequences of the increased demand for services are well documented in the CCOPE
Study, which indicates that there is a high degree of staff burnout, emotional exhaustion,
psychological morbidity and a sense of frustration and embarrassment at the current state of
affairs.

d) Conclusion

Systemic cancer therapy in Ontario is indeed “on the brink”. This environment has made it
increasingly difficult to attract new recruits into the speciality of medical oncology. Unless this is
addressed convincingly and urgently present demands and projected future workload are likely to
lead to more medical oncologists leaving the Ontario cancer system in the near future.
This paper now examines the traditional role of the medical oncologist and then presents recommendations for a new model, which could, if implemented go a long way towards reversing the present trends.

**Medical Oncology – The Traditional Role**

The medical oncologist has typically been closely involved in patient care extending from initial assessment to the delivery of palliative care. This is in contrast to the other traditional cancer specialities of surgical and radiation oncology where interactions with the patient are often short-lived and of a more technical nature. Patients and their families identify closely with their medical oncologist and see him/her as being responsible for all aspects of their medical cancer care, often by-passing even the family physician at times of urgent need. Within the centres and community hospitals, nurses, pharmacists and other physicians, such as residents and clinical associates have had poorly defined and often minor roles. During its deliberations, the Task Force identified a number of different practice delivery models across the province. Some models are quite innovative and are worthy of consideration for broader dissemination.

In addition to direct patient care, medical oncologists have many other demands on their time. In academically affiliated centres, medical oncologists are expected to teach, lead research programs and, more recently, participate in activities, such as guideline development, genetic counselling and cancer prevention. In non-academic centres medical oncologists often travel considerable distances to attend satellite clinics in remote communities or have to provide expert phone advice to physicians managing patients at a distance. In the community oncology centres, medical oncologists generally function without junior staff, take call more often and are expected to participate in general internal medicine duties in their hospitals.

Medical oncologists in all settings are experiencing the impact of the documented increases in workload. At the November 3rd workshop, the three medical oncology working groups were unanimous in recommending that the medical oncologist’s role should be redefined. The groups recommended a new model for care delivery and strongly supported the concept of staffing based on workload standards. Central to the new model is the view that other cancer care health professionals are ready to take on much greater responsibility for direct patient management.
The medical oncologist cannot be all things to everyone. He/she is a consultant and leader working in conjunction with other highly skilled health care professionals to deliver optimal care. Whether in an academic institution, a non-teaching centre or in the community, the medical oncologist must re-establish a leadership role in education and research. In the academic centres, teaching includes undergraduate and post-graduate physicians and trainees in allied disciplines. Research includes clinical trials, basic research and health services research. In non-academic centres and the community hospitals, teaching includes other disciplines as well as other physicians through participation in rounds etc. Research includes participation in clinical trials.

Medical oncologists are required to engage in continued self-education in order to maintain competency in their Royal College speciality. Participation in teaching, academic meetings and guideline development all contribute to the acquisition of credits towards the maintenance of competence. The working groups at the STTF Innovation Workshop all recommended that all medical oncologists must educate themselves about data management and the use of Internet resources. In addition, medical oncologists are well placed to play significant roles in chemoprevention, in promoting screening and working with genetic counsellors. In all settings, the medical oncologist must advocate to maximize resources and increase the quality of care.
These new activities can only be achieved if there is both an increase in the number of medical oncologists and a change in the way medical oncologists work. Other health care providers must be allowed to provide care in areas that have typically been the domain of medical oncologists. This will occur mostly when the patient’s care is following a predictable and uncomplicated pathway.

The Systemic Treatment Task Force has strongly endorsed the Primary Care Model as the new standard for care delivery for the patient and their family. For this to come about, the roles of other providers in the team have to be clearly defined. Workload standards must be developed and adhered to and training for other team members must be provided to allow for consistent competencies across the provincial system.

This model of care delivery must be clearly communicated to the patient and their family at the time of the first consultation. It must be implemented in such a way that patients are made to feel comfortable with a team of health care providers, rather than rely solely upon a medical oncologist for management of all situations arising from their experience with cancer.

Setting Targets

a) Targets for New Patient Workload

The recent MOPAC Manpower Study (appended to the STTF report) sets an overall average target of 158 (rounded to 160) new patients per oncologist per year in an academic centre and 173 (rounded to 175) new patients for oncologists in non-teaching centres. It is recognised that this average will vary according to the type of cancer (table 1). In larger centres, the average will be shared among FTEs according to their defined responsibilities and their interest in particular tumour types.

Table 1: Number of New Patients per Medical Oncologist Per Year

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<td>Lung</td>
<td>167</td>
<td>185</td>
</tr>
<tr>
<td>Ovarian</td>
<td>104</td>
<td>116</td>
</tr>
<tr>
<td>Prostate</td>
<td>175</td>
<td>194</td>
</tr>
</tbody>
</table>
1. It is recommended that these average numbers be accepted by the province of Ontario as workload standards for medical oncology. This recommendation is consistent with recommendations made by the Canadian Association of Medical Oncologists and adopted in the province of British Columbia (130 new cases per year) and recommended in Alberta (150 new cases per year).

2. It is recommended that these numbers (average 160 or 175) be reassessed no less frequently than every three years and re-adjusted depending upon changes in therapy, outcomes or other circumstances.

3. It is recommended that each centre be funded appropriately for the number of medical oncologists and support staff (see later) required to maintain the agreed upon provincial average.

4. It is recommended that when workload increases at cancer centres due to more new patients, systemic therapy program budgets will be increased appropriately.

5. It is recommended that CCO Systemic Therapy Programs should request increased funding in fiscal 2000/2001 with the goal of achieving the overall workload targets within three years. It is recommended that the target average number of new patients per medical oncologist for 2000/2001 be 200 new cases per medical oncologist for teaching and non-teaching centres. Non-CCO centres should also take steps to ensure that oncologists in their facilities have comparable workloads to those recommended by CCO in order to ensure that patient care will be of high quality and to protect the medical oncology staff from burnout.

6. It is recommended that if the workload target for medical oncologists cannot be met, due to a shortage of trained medical oncologists, centres should still be funded for vacancies and allowed to use the funds to appoint skilled alternates, such as clinical associates or nurse practitioners.

b) Targets for Waiting Times

A new diagnosis of cancer is a major psychological stress for the patient and family. However, once a referral is made some delay is unavoidable, while data is gathered, including referral notes, pathology slides and other information.

1. It is recommended that the province set a standard of no more than two weeks for the time to access a consultation with a medical oncologist.

2. It is recommended that Activity Level Reports include information on waiting times as a measure of quality of care.

The Primary Care Team

Traditionally, the medical oncologist has taken on virtually all responsibility for direct patient care. It is proposed that primary care teams be established to allow for more shared responsibility of care. Central to this model of care is the fact that the patient recognizes an individual medical oncologist, nurse and clinical associate as their core care team, with additional input from treatment area nurses, clinical trials staff, oncology pharmacists and other systemic treatment support staff. The core primary care medical oncology team and the number of new cases per year are shown in table 2. Team responsibilities are shown in table 3. Many of these activities will be delegated.

<table>
<thead>
<tr>
<th>Team Member</th>
<th>FTE Equivalent</th>
<th>No. of New Patients/Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Oncologist</td>
<td>1</td>
<td>160/175</td>
</tr>
<tr>
<td>Phase</td>
<td>Team Responsibilities</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Initial Evaluation of the New Patient</strong></td>
<td>• Confirming diagnosis and filling in gaps in clinical database</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Discussing &amp; managing treatment options</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Determining urgency of investigations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Organizing investigations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Establishing a treatment plan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Implementing treatment</td>
<td></td>
</tr>
<tr>
<td><strong>Follow-up</strong></td>
<td>• Patient and family education</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Follow-up on and off treatment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Managing major problems and symptoms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Managing complications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Diagnosing recurrence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Discharge planning and communication of plan</td>
<td></td>
</tr>
<tr>
<td><strong>Other Activities</strong></td>
<td>Prevention and screening for genetic counselling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Clinical trials</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Health services research e.g. patient decision making</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Teaching each other on the team.</td>
<td></td>
</tr>
</tbody>
</table>
**a) The Medical Oncologist (Core Team Member)**

The medical oncologist should be seen as a consultant, who is responsible for overseeing the most important patient care decisions. He/she must be the manager of the team and must be available at key points of the illness. He/she must spend the most time with the patient at the early stage of the illness and at other critical points when treatment plans must be formulated.

1. It is recommended that the consultant/primary care team leadership role of the medical oncologist become the standard throughout CCO, PMH and in the community setting.

2. It is recommended that primary care teams be established for all medical oncologists and that the medical oncologist delegate aspects of care to the following core and ancillary team members.

**b) The Primary Care Nurse (Core Team Member)**

The STTF has extensively examined the role of nursing in the delivery of systemic therapy. The various nursing roles are addressed in an accompanying position paper. The working groups at the Innovation Workshop endorsed the recommendation for primary care nursing as described in the Cancer Nursing in Ontario position paper (appended).

1. It is recommended that a primary care nursing model be adopted as the standard model of care within the formal cancer system and in other institutions where systemic therapy is provided.

2. It is recommended that a primary nurse be identified with the patients of each oncologist associated with systemic therapy. It is currently recommended that the ratio of nurse to physician be 0.8 nurse per 1 FTE medical oncologist/hematologist/consultant based on the observation that those centres that have implemented effective models of primary nursing are operating with this ratio. Reevaluation of this ratio will be necessary as oncologist workload standards are implemented and nursing roles evolve.

**c) The Clinical Associate (Core Team Member)**

The STTF recognized the very significant role played by clinical associates. This role is addressed in an accompanying position paper. Clinical associates often enter oncology from a background in family practice and have a unique perspective within the cancer care system. Development and formal recognition of the clinical associate within the team will enable the medical oncologist to oversee a greater number of cancer patients relative to other provinces while allowing time to pursue other activities, such as education and research.

1. It is recommended that the role of the clinical associate be formally recognized across the cancer care system, that standards be set and formal training be provided to present and future clinical associates.

2. It is recommended that one FTE clinical associate be associated with two to three primary care teams.

3. It is recommended that clinical associates assist in all aspects of medical oncology care and supervise patients during predictable periods in their clinical course.

**d) Advanced Practice Nurses (Ancillary Team Member)**

The Taskforce has recommended that advanced practice nurses must be recognized as an important new role within CCO and the other institutions delivering systemic therapy services. For this to occur, roles for advanced practice nurses should be defined in areas of special need. Examples might be within specific disease site groups, where special expertise is required, within the chemotherapy treatment areas and on the wards.
1. It is recommended that systemic therapy programs identify areas where advanced practice nurses can usefully be employed.

2. It is recommended that financial (billing) issues be resolved and adequate training positions for oncology advanced practice nurses be provided at selected universities in the province.

e) **Oncology Pharmacy (Ancillary Team Member)**

The STTF recognized that oncology pharmacy must evolve into a speciality in its own right. An expanded role for pharmacists is expected to take pressure off primary care teams in certain situations. Pharmacists can assist in counselling around drug side-effects and potential drug interactions. Pharmacies can also play a greater role in completing necessary Ministry forms for Section 8 drugs. The role of the oncology pharmacist and technician is discussed in another Task Force position paper.

1. It is recommended that the systemic therapy programs enter into dialogue with oncology pharmacists to seek new ways to maximize their special expertise.

2. It is recommended that the workload ratios presented elsewhere in the STTF report be adopted as standard.

f) **Other Ancillary Team Members**

Other ancillary team members include clinical trials staff, the chemotherapy area nurses and the clerical support staff assigned to the Systemic Treatment Program.

1. It is recommended that clearer role definitions be assigned for each of these groups.

2. It is recommended that workload standards be developed for each group.

**Role in Cancer Patient Follow-up**

Over the past 15 years, medical oncologists have been taking on significant numbers of patients for administration of adjuvant therapy. This practice has improved survival in breast and colorectal cancers and has potential in several other tumour types. As many of these patients are cured or experience prolonged remissions, the number of “well follow-ups” seen by medical oncologists has increased substantially to the point where many medical oncologist’s practices are saturated.

The Task Force medical oncology working groups recognized that follow-up policies must be flexible and tailored to the particular situation with respect to disease type, risk of future recurrence, location of the patient and patient preference. For patients who continue to be followed at the centres, well follow-up could be delegated to other team members, particularly clinical associates and advanced practice nurses.

1. It is recommended that patients and families should be educated about the goal of follow-up and expectations about the utility of routine continuous follow-up in the cancer centres should be lowered.

2. It is recommended that evidence based guidelines be developed to determine future follow-up practices for all disease sites.

3. It is recommended that there be a mix of centre follow-up and community based follow-up by family physicians or other specialists.

4. It is recommended that patients should be given choices concerning follow-up and that discharge planning back to the patient’s family physician, after completion of adjuvant therapy, should be a formal process with adequate communication of follow-up expectations.
**Role in In-Patient Care**

In-patient care often makes significant demands on the medical oncologist. The medical oncologist must remain a consultant for critical decisions about ongoing active in-patient care, particularly emergencies. However, the working groups felt that there must be more support from palliative care. The team concept used in the clinic setting could be extended to inpatient units to emphasize continuity of care.

1. It is recommended that most day to day supervision of in-patients can be formally delegated to clinical associates and advanced practice nurses with medical oncologist supervision.

2. It is recommended that CCO take the lead in the development of palliative care initiatives for cancer patients

**What CCO Needs to Do to Make Change a Reality**

**a) Overall Change**

There have been previous manpower reports and a previous CCO Systemic Therapy Taskforce on Efficiency. The medical oncology working groups expressed considerable concern as to whether real change would occur as a result of this latest initiative. To restore confidence and improve morale, Cancer Care Ontario must clearly recognize the need for change and must advocate for this change both within and outside the organization.

To support change in the number and role of medical oncologists, CCO, the Princess Margaret Hospital and community hospitals with medical oncologists on staff must also fully support the changes recommended for the allied professions of nursing and pharmacy. The profile of these other health care providers must be enhanced and funding mechanisms must be changed to allow growth of these other professional groups without threatening the funding base for physicians. These issues are addressed more fully elsewhere in the Task Force report.

Cancer Care Ontario and the other cancer care provider institutions must be sensitive to the concerns of staff, as the Task Force changes are implemented. There must be re-assurance that some of the new roles are not a threat to those already in place.

1. It is recommended that there must be meaningful dialogue with the OMA, the College of Nurses, the College of Family Medicine, the Ministry of Health and Long Term Care and the Universities to provide the necessary circumstances to support change.

2. It is recommended that the funding mechanism for medical oncology be reviewed with the goal of achieving competitive remuneration with other Internal Medicine specialities and Canadian jurisdictions. In considering medical oncology remuneration, it is important that the mechanism not be a barrier to the implementation of the team-based model of care delivery.

**b) Implementation Strategies**

If the new team-based model of care is to succeed, it will require implementation strategies. These will include identifying the roles and responsibilities of all team members, including those who are part-time (ancillary) team members. Use of skills should match needs, i.e. many tasks previously carried out by medical oncologists could be formally delegated to other team members.

1. It is recommended that one care provider be identified for all initial patient communication. The obvious choice is the primary care nurse. Her/his role will be to triage new problems and call in resources such as the staff medical oncologist, clinical associate or oncology pharmacist as deemed necessary.

2. It is recommended that the new roles for medical oncologists be widely discussed and agreed upon together with a commitment to multidisciplinary care delivery.
3. It is recommended that the competencies of all disciplines should be clearly defined with standardization of educational programs across the province.

4. It is recommended that each disease site develop protocols indicating the role of the various team members during different phases of a patient’s illness.

5. It is recommended that once protocols, care paths and guidelines have been developed, all members of the team be educated as to proper implementation.

**Education, Research and Guideline Implementation**

In recent years, the need to provide direct patient care has very significantly impacted upon the ability of Ontario’s medical oncologists to perform as researchers, educators and leaders in guideline development. In addition, medical oncologists have had little time to develop skills in the newer areas of genetic counselling and prevention. A positive result of reform of medical oncology in the province will be more protected time for these activities, which are deemed fundamental to the mandate of the specialty.

1. It is recommended that Cancer Care Ontario re-emphasize the importance of education, research and guideline development as part of the core mandate of its systemic treatment programs.

2. It is recommended that medical oncologists’ contribution to academic pursuits be valued as a fundamental part of their mandate.

3. It is recommended that direct participation in the fields of prevention and genetic counselling become an expectation and that future funding for systemic therapy take these new activities into account.

**Attracting More Physicians into Medical Oncology**

The work groups felt that for medical oncology to regain its status as an attractive, worthwhile career choice in Ontario, the quality of work life needs to improve quickly and significantly. Central to this is the rapid implementation and adherence to the new workload targets for medical oncology and the other allied health care workers. This is the clearest way to send a message that the province is committed to reform. Other factors which have not been discussed in this document include, adequate study leave, sabbaticals and vacation coverage and more flexible contracts to allow part-time work and job sharing.

It is recommended that CCO continue to explore ways to imaginatively improve the quality of medical oncologists’ work life.
Appendix F

Medical Oncology Manpower Study
1. **INTRODUCTION**

The rapid growth in the availability of new systemic therapy treatments, the development of evidence-based guidelines, changes in referral patterns and increased consumer demand for timely state-of-the-art care have come together to put an unprecedented demand on the systemic therapy program in Ontario. With the ageing of the baby boomers on the horizon, the demand will continue to grow.


With the exception of British Columbia, provincial Ministries of Health and provincial cancer agencies do not yet utilize a methodology to project medical oncology manpower requirements. In 1995, the Medical Oncology Professional Advisory Committee (MOPAC) of Cancer Care Ontario recognized the need for a careful analysis of provincial manpower requirements and the need for a methodology for projecting manpower requirements for medical oncologists in Ontario. In response to these needs, a Manpower Assessment Committee was struck in 1995 with the following terms of reference:

- review previous studies of medical oncology manpower needs;
- refine and apply, as appropriate, the methodology and model for projecting medical oncology manpower requirements used in the 1994 CAMO Report;
- undertake data collection and analysis to permit application of the model;
- recommend an appropriate workload standard for medical oncology; and,
- determine current medical oncology manpower requirements in Ontario.

2. **PREVIOUS ONCOLOGY MANPOWER STUDIES**

Given the relative newness of the speciality and the complexity of patterns of practice, there have been few well defined manpower assessments for medical oncology.

In the late 1980s, Bergsage\(^2\) was the first to look at the specific medical oncology manpower needs for Ontario. He estimated that a medical oncologist in an academic centre could consult on 100 new patients a year. The comparable figure for a non-academic practice was estimated at 150 new cases. The recommendations were not generally accepted as they were not based on a detailed time-based methodology.

A more detailed study undertaken by Levin and Bergsage\(^3\) prepared for the Wade Commission examined patterns of practice of individual physicians using questionnaires and interviews. A subset of subspecialist medical oncologists was asked to log the times required to provide a variety of patient visits in their area of expertise. Standardized treatment algorithms for a variety of tumour sites were developed by a panel of experts. The duration of patient visits by tumour type were applied to the standard disease-specific algorithms to estimate the time required to provide care for a particular tumour type. Using the referral rates to medical oncology by tumour type and the total time required to provide care to nine major tumour types, it was possible to calculate the medical manpower required to provide care to these patients. The Wade

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1. Dr. J.A. Maroun (Chair), Dr. C. Cripps, Dr. S. Fine, Dr. A. Arnold, Dr. I. Quirt, Dr. D. Vergidis, Dr. D. Cowan, Dr. J. Laidlawand Dr. P. Hawrylyshyn, Consultant
2. Bergsage, D., Hawrylyshyn, P.: personal communication
Commission recommended that 138 new patients per year be the average caseload per oncologist for the future planning of medical oncology manpower requirements in Ontario. The Ontario Cancer Treatment and Research Foundation (OCTRF) accepted the caseload recommended by the Wade Commission in principle. However, the recommendation came forward just prior to an election. While it was anticipated that the recommendation would form the basis of a new Ministry of Health policy for oncology manpower planning and funding, it appears that as a result of the number of initiatives and issues in the Health envelope after the election, the recommendation slipped off the agenda.

A report published4 in 1996 by the American Society of Clinical Oncology (ASCO) presented the findings of a survey conducted by ASCO in 1994. ASCO members identifying themselves as either medical oncologists or hematologists/oncologists were surveyed to determine how medical oncologists in different work settings divide their professional activities. While there are substantial differences in the way in which cancer care is organized and delivered in Canada and the United States, the survey did identify that the percentage of time devoted to clinical practice is different in teaching vs. non-teaching settings. In the ASCO survey, respondents practising in teaching hospitals reported that 37% of their professional time was devoted to clinical practice. Physicians practising in non-teaching community and other hospitals reported that 59% of their professional activities were related to clinical practice. In comparison, physicians in private practice reported that 72% of their professional activities were devoted to clinical practice. These findings corroborated Canadian data concerning how medical oncologists allocated their time to different professional activities.

In 1994, Agnew Peckham and Associates (APA) prepared a report for the Canadian Association of Medical Oncologists (CAMO)5. This study utilized a similar methodology to that of Levin and Bergsagel for analysis of workload. It also assessed the time required to provide care to the most common tumour sites. Expert consensus was used to develop the tumour treatment algorithms. The results were not validated through field data collection. Based on national patterns of practice, it identified manpower requirements as one medical oncologist per 138 new patients per year. British Columbia has since adopted the recommendations of the CAMO study as the basis for projecting their medical oncology manpower requirements.

Following a review of previous medical oncology manpower studies, the MOPAC Committee elected to use the methodology developed for the 1994 CAMO study as the basis for this report.

2.1 What is a Medical Oncologist?

The Royal College of Physicians and Surgeons of Canada officially recognized medical oncology as a subspecialty in 1985.

A comprehensive definition of a medical oncologist was approved by the Canadian Association of Medical Oncologists in April 1992.

"A medical oncologist is a physician broadly trained in internal medicine, who has special expertise in the biology, clinical manifestations and medical treatment of neoplastic disease. With increasing understanding of the biology and genetics of cancer, the ability to integrate knowledge about the biology of the disease is directly relevant to its prevention, detection, staging and treatment."

"Medical oncologists are specifically qualified in methods of detection, diagnosis and staging of disease. They are uniquely qualified to supervise the direct delivery of effective levels of potentially toxic systemic treatment (chemotherapy, hormonal therapy and biologic response modifiers). In view of their broad general medicine training and the fact that neoplastic diseases cross organ system specialities, oncologists are equipped to deal with medical problems of specific organ dysfunction, provide systematic palliative

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care and coordinate multi-modality management requiring intervention with other specialists."

"Where direct supervision is impractical and the recommended treatment is not sufficiently intensive to require admission to a referral centre, the medical oncologist is best suited to consult with other specialists about the various aspects of cancer, as well as helping to direct specialists, family physicians and others in cancer patient management."

"The major facet of the practice of medical oncology is the use of anti-neoplastic agents. The toxic nature of many of these agents demands stringent controls on administration, revision to monitor for possible harmful effects and guidelines for treatment of such side effects, should they occur. The problems can most successfully be managed by developing and implementing comprehensive written protocols. As such, safe and effective treatment demands that medical oncologists continue to develop and review protocols, an activity for which they have had specific training."

"Quality care demands that resources are available in the community. As such, medical oncologists must be prepared to participate in tumour boards in the community, and in medical undergraduate education, assist graduate training in the speciality, participate in continuing education for other practising physicians and non-physician health care workers and promote cancer prevention."

2.2 How is Medical Oncology different from other Oncology Disciplines?

Metastatic spread of disease is the most common cause of morbidity and mortality from cancer. With the introduction of the first systemic chemotherapy agent in 1946, the control of distant metastatic disease became a realistic possibility.

Several important aspects of the role of a medical oncologist need to be highlighted.

- The practice of medical oncology is unique because of the gravity of the illness affecting the patients medical oncologists see in their practice. No other speciality of medicine has such a high proportion of patients with life threatening disease. Effective treatment requires the use of therapies that are frequently toxic and require close medical supervision and great care in their administration. Physician-patient relationships are intense and often protracted. Sensitive discussions with patients and their families concerning treatment options, side effects and prognosis form an extremely important, but time consuming component of the practice of medical oncology. Medical oncologists also spend considerable time liaising with primary care physicians in order to inform them of those patient needs, which would best be met by community resources.

- Many medical specialities provide primarily single encounter consultations. By way of contrast, medical oncology typically requires, not only consultation, but also a complex ongoing relationship with the patient and family. The relationship begins with the initial consultation. The patient's history, physical condition and pathology reports are reviewed, along with other laboratory and radiologic investigations. Considerable time is spent with the patient and family discussing the prognosis and appropriateness of chemotherapeutic or other treatment options. Depending on the tumour type and stage of disease, the patient may initially be enrolled in a program of adjuvant chemotherapy with curative intent. This typically involves visits for administration of a combination of chemotherapy drugs every one to four weeks for up to six months. Prior to each treatment being administered, the patient is assessed by the medical oncologist in order to assess health status and any treatment related toxicities requiring chemotherapy dose modification. Upon completion of the adjuvant treatment protocol, the patient is seen at defined intervals for follow-up. Initially, this may involve visits every few months to assess for cancer recurrence, and then annual or semi-annual visits for up to five years to assess for late treatment related toxicity.
and recurrent cancer. As the risk of recurrence decreases with time, patients may be referred back to community physicians for their follow-up.

- For patients with locally advanced cancer, there are increasing indications for combined modality therapy consisting of surgery or radiotherapy with chemotherapy. In these cases, as for patients on treatment with adjuvant therapy, there is a need to explain treatment options, the toxicities of therapy, potential harms and benefits and then to coordinate treatment in consultation with one or more other specialists.

- For those patients who present with metastatic disease, as well as those who develop a relapse after primary treatment, chemotherapy is a therapeutic option. Although this is most commonly offered with palliative intent, there are situations where chemotherapy has curative potential even in the face of metastatic disease (e.g. testicular cancer, lymphomas, choriocarcinoma, and small cell lung cancer). These encounters are longer and more intense than those for adjuvant therapy. For those patients for whom systemic therapy is appropriate, patients must be assessed prior to each chemotherapy treatment, not only to determine overall health state and appropriateness to treat, but also to evaluate cancer related symptoms and to ensure that they are being appropriately managed. Should chemotherapy fail to cause tumour regression or disease progresses after an initial response, second and even third line chemotherapy treatments may be offered.

- Many patients ultimately require palliative care and support. The selection and dose adjustment of pain medications, or referral for radiation therapy will frequently make the difference between incapacitating pain and comfort. Considerable relief may also be achieved through careful medical management of major organ involvement by cancer and related metabolic abnormalities. As a consequence of the disease process and the potential treatment options, the time expenditure and the scope of work for the care of patients with advanced cancer is demanding.

- Finally, medical oncologists are often called upon to provide care to patients who require hospitalization for progressive cancer with multi-system medical problems and who require terminal care. Providing this level of care is time intensive, as well as emotionally and physically taxing.

3.0 DATA COLLECTION METHODOLOGY

The data collection methodology used in the development of this report is based on that used in the 1994 CAMO study. The CAMO methodology was modified to include more detailed Daily Activity Log forms (Appendix A). In addition, the Committee used retrospective chart audits to validate and update the tumour management protocols for the common tumour types published as part of the 1994 CAMO Report.

The data and conclusions presented in this report are based on 1994 patterns of practice and updated management protocols. Because of the availability and number of new treatments and an increased demand for appropriate and state-of-the-art care from a sophisticated and knowledgeable consumer population, the world of medical oncology is in a constant state of flux. Therefore, data in this report should be seen as a soft benchmark against which forecasts of required medical oncology manpower resources should be developed.

3.1 Definitions

- **Medical Oncologist**: a speciality trained physician proficient in the use of systemic therapeutic modalities.

- **Full-time RCC Oncologist**: an Oncologist who is remunerated by Cancer Care Ontario (CCO) or Princess Margaret Hospital (PMH), spends variable amounts of time providing direct care to cancer patients and in related activities, such as protocol and
practice guideline development, outcome analysis, clinical administration, research and teaching;

- **Fee for Service Oncologist**: a Medical Oncologist in private practice who provides community-based consultation and treatment services and may spend part of his/her time providing services as a general internal medicine specialist or as a subspecialist such as a hematologist. He/she may be active in recruiting patients to clinical trials or have medical administrative responsibilities;

### 3.2 Data Collection - Daily Activity Log:

- Respondents were asked to document their ambulatory based activities by 15-minute intervals for a typical two-week period during February/March 1995. A “total day” for each respondent was defined as the time between arrival at the Centre/office and departure from the Centre/office.
- Practice activities were divided into five major groupings with sub-categories. Detailed definitions of the major groupings are provided in [Attachment 1](#)

1. Patient Care;
2. Administration;
3. Clinical research;
4. Education; and,
5. Travel.

### 3.3 Length of Time for Different Types of Ambulatory Appointments

As part of the 1994 CAMO Study, data was collected to determine the average time for different types of ambulatory appointments for major tumour types. The average times for different types of ambulatory appointments provided in the CAMO Report were very similar to patterns of practice in Ontario in 1994. Therefore, a decision was taken not to collect length of time data for specific types of visits e.g. consultation, treatment regular follow-up etc for major tumour types. The times were, however, modified slightly to reflect the time typically scheduled by RCCs for different types of ambulatory visits and used as surrogate data ([Table 1](#)).

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6 Activities performed after hours or at home and weekend or after hours on-call were excluded.
7 Lunch-time and coffee breaks were not included as specific activities.
Table 1: Average Time for Different Types of Ambulatory Visits

<table>
<thead>
<tr>
<th>Visit Type</th>
<th>Average Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consult</td>
<td>45 minutes</td>
</tr>
<tr>
<td>Regular FU</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Complicated FU</td>
<td>25 minutes</td>
</tr>
<tr>
<td>Adjuvant Chemo</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Salvage Chemo Rx</td>
<td>20 minutes</td>
</tr>
</tbody>
</table>

While the data in Table 1 reflect the time typically scheduled for different types of ambulatory appointments regardless of the tumour type, there is some concern that the times scheduled, particularly the time scheduled for salvage chemotherapy, underestimates the reality of today's practice. Also, since these numbers represent an overall estimate for all disease sites, the computations for manpower requirements will not be sensitive to the differences in the time requirements per visits for different cancer types as estimated by CAMO.

Salvage chemotherapy (second and third line therapy and all metastatic disease) is now offered to a larger number of patients across all tumour types. Treatment options are increasingly complex. Harms and benefits must be presented to the patient and discussed in greater detail prior to a patient taking a decision to proceed or not proceed with treatment. Feedback from experienced clinicians suggests that the time typically scheduled for a salvage chemotherapy visit does not reflect the actual time required for this type of visit.

3.4 Review of the Schemas of Tumour Management Protocols

The 1994 CAMO study was intended to model patient management for medical oncologists across Canada based on the consensus of expert panels. The CAMO schemas were reviewed and updated to reflect the significant changes in patterns of practice for cancer care in Ontario. Expert panels of medical oncologists and retrospective chart reviews were used to gather data and update the schemas (Appendix B).

3.4.1 Expert Panels
- Expert panels were identified for six major tumour sites
- Expert panels reviewed and updated the 1994 CAMO consensus management protocols. Management protocols indicated the proportion of patients requiring treatment (chemotherapy, hormone or biological therapy), the frequency and intensity of chemotherapy regimens and the frequency, duration and type of follow-up visits for a period of 5 years. These activities are based on direct patient care in the ambulatory care setting as recorded in the physician activity log.

3.4.2 Retrospective Chart Review
Ten (10) patient charts for each stage for three major tumour (lung, colorectal and breast) sites were audited at four (4) RCCs. The purpose of the audit was to validate the assumptions of the consensus management protocols and to identify differences in patterns of practice in Ontario. Because of the continuing increase in the number and availability of new therapies to treat all tumour types, the data gathered in the chart review and the assumptions made in the management protocols, should be seen as a snapshot of management protocols in use at that time.

3.5 Other Data Sources
Incidence data, referral rates to Regional Cancer Centres and the proportion of patients referred to Medical Oncology are based on information provided by the Ontario Cancer Registry and Regional Cancer Centres.

4.0 FINDINGS - Highlights

8 Breast, Colorectal, Prostate, Lung, Lymphoma and Ovarian.
4.1 Daily Activity Logs
Forty-two (42) RCC medical oncologists completed Daily Activity Logs. A low response rate from community-based and PMH oncologists did not permit meaningful analysis of that population.

Based on the data reported by all 42 respondents, the average work week was 47.5 hours (S.D. = 3.4 hrs). Daily Activity Log data for all 42 respondents are summarized in Appendix C.

Seven (7) of the 42 respondents were in administrative positions. Therefore, the focus of the analysis is on the data reported by the 35 respondents doing predominantly clinical work. It was felt that these data best portray the activities of medical oncologists in an ambulatory care setting. In addition, analyses were undertaken to determine what, if any, differences there might be between those working in teaching vs. non-teaching centres.

4.2 Reported Activity by Clinical Respondents
Clinical respondents reported that total patient care represented 65.8% of daily activities in non-teaching RCCs, and 53.6% of daily activities in teaching RCCs (Table 2). It was also noted that respondents in teaching RCCs reported a longer (17.8%) average work week than respondents in non-teaching RCCs.

Table 2: Reported Activity by Clinical Respondents In Teaching and Non-teaching RCCs

<table>
<thead>
<tr>
<th>Clinical Group</th>
<th>Average Hours Worked per Week</th>
<th>Ambulatory Patient Care</th>
<th>Admin.</th>
<th>Teaching</th>
<th>Research</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>48.8 Hours</td>
<td>53.6%</td>
<td>19.0%</td>
<td>13.3%</td>
<td>7.9%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Non-teaching</td>
<td>41.4 Hours</td>
<td>65.8%</td>
<td>17.7%</td>
<td>3.4%</td>
<td>5.0%</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

4.3 Patient Care Activity
Data for teaching and non-teaching RCCs were analysed to determine the percentage of patient care activity that was devoted specifically to direct outpatient, direct inpatient and other patient care within the ambulatory care setting (Table 3). Time doing inpatient care and education were not included in the reported activities of the selected sample weeks.

Table 3: Type of Patient Care Activity in an Ambulatory Care Setting

<table>
<thead>
<tr>
<th></th>
<th>Direct Out Patient Care</th>
<th>Other Related Out Patient Care</th>
<th>Direct In-Patient Care</th>
<th>Total Patient Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching</td>
<td>31%</td>
<td>10%</td>
<td>12%</td>
<td>53%</td>
</tr>
<tr>
<td>Non-teaching</td>
<td>49%</td>
<td>8%</td>
<td>9%</td>
<td>66%</td>
</tr>
</tbody>
</table>

Respondents in non-teaching RCCs reported a higher percentage of time devoted to total patient care and direct outpatient care. Respondents in teaching RCCs reported a higher percentage of time for both direct inpatient care and other patient care. It is assumed that these differences for inpatient and other patient care in teaching RCCs may be caused, in part, by more complex cases and patients with rare tumour types who are referred to a teaching centre for consultation and treatment.

4.4 Tumour Specific Patient Care Time
The Tumour Specific Patient Care Time (TSPCT) for each of the six (6) major tumour types studied as part of the MOPAC Manpower study was calculated by applying the

---

9 Ambulatory care includes admitted patients and requests for in-patient consultation on the ward.
10 Community presentations, media interviews, peer review of journal submissions, travel etc.
11 Completion of insurance forms, calls for additional reports, calls to the family physician and the family and family conferences etc.
12 Review consults etc.
standard visit times (Table 1) to the patient management protocol developed for each tumour type (Appendix B).

The Tumour Specific Patient Care Time expresses the total time that an oncologist would devote to an average new patient for each tumour type in an ambulatory care centre over a five-year period (Table 4).

### Table 4: Tumour Specific Care Time

<table>
<thead>
<tr>
<th>Tumour Type</th>
<th>Hours Per Tumour Type Over 5 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>8.8</td>
</tr>
<tr>
<td>Colorectal</td>
<td>4.9</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>11.2</td>
</tr>
<tr>
<td>Lung</td>
<td>5.5</td>
</tr>
<tr>
<td>Ovarian</td>
<td>8.7</td>
</tr>
<tr>
<td>Prostate</td>
<td>5.2</td>
</tr>
</tbody>
</table>

5.0 DEVELOPING A WORKLOAD STANDARD FOR MEDICAL ONCOLOGY

The question concerning how many new patients can be seen each year by a medical oncologist has received considerable attention. Given that the mix of patients (tumour types) varies by RCC and no individual medical oncologist sees an average mix of patients, a funding formula based on the annual caseload per medical oncologist would not be an effective resource-planning tool. The development of a formula needs to reflect planning requirements at two levels. At the provincial level, there is a need for a workload standard based on an average case mix that can be used for system wide planning of resources. There is a need at the RCC and PMH level to plan the FTE medical oncologist resource requirement based on the actual case mix unique to the catchment area.

Two (2) essential components are necessary to develop a workload standard for medical oncology:

1. The percentage of time (expressed in hours) that medical oncologists devote to outpatient care on an annual basis; and,
2. The Tumour Specific Patient Care Time (TSPCT) - the total number of hours that an oncologist would devote to an average new patient for each tumour type over a five year period

5.1 Calculating the Percentage of Time available for Outpatient Care

Based on the current oncology associate agreement for medical oncologists at RCCs in Ontario and the data provided in the Daily Activity Logs, the Manpower Assessment Committee made the following assumptions as to the annual availability of medical oncologists:

- Total day: 9 hours per day
- Number of Weeks: 45 weeks per year
- Number of Hours 2025 hrs per year

Using these assumptions, the Committee developed the following recommendation concerning the percentage of total hours to be directed towards direct outpatient care in an ambulatory care setting on an annual basis:

**RECOMMENDATION:**

For the purpose of this study, it is recommended that the total hours directed to outpatient care on an annual basis be as follows (Table 5);

### Table 5: Recommended Total Hours Directed to Out Patient Care Per Year
### Table 6: Estimated # of Patients Per Medical Oncologist by Tumour Type

<table>
<thead>
<tr>
<th>Tumour Type</th>
<th>MOPAC /1994</th>
<th>TSPCT</th>
<th>Type of Centre</th>
<th>Hours Per Tumour Type Over 5 Years</th>
<th>Teaching Centres</th>
<th>Non-Teaching Centres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>8.8</td>
<td># Hours available 910</td>
<td>Pt/MO 104</td>
<td>1012</td>
<td>115</td>
<td></td>
</tr>
<tr>
<td>Colorectal</td>
<td>4.9</td>
<td>910</td>
<td>187</td>
<td>1012</td>
<td>208</td>
<td></td>
</tr>
<tr>
<td>Lymphoma</td>
<td>11.2</td>
<td>910</td>
<td>82</td>
<td>1012</td>
<td>91</td>
<td></td>
</tr>
<tr>
<td>Lung</td>
<td>5.5</td>
<td>910</td>
<td>167</td>
<td>1012</td>
<td>185</td>
<td></td>
</tr>
<tr>
<td>Ovarian</td>
<td>8.7</td>
<td>910</td>
<td>104</td>
<td>1012</td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>Prostate</td>
<td>5.2</td>
<td>910</td>
<td>175</td>
<td>1012</td>
<td>194</td>
<td></td>
</tr>
</tbody>
</table>

The Pt/MO ratio for each of the tumour sites reflects the frequency of chemotherapy, complexity of care, the natural disease course and the differences in the patient follow-up protocols. The Pt/MO ratios in Table 6 assume that a medical oncologist’s practice would be limited to patients with that specific tumour type. The operational reality is that medical oncologists see at least two and often three or more tumour types in their practice. While the Pt/MO ratios in Table 6 do not reflect the typical mixed practice of a medical oncologist, the data does serve to demonstrate that human resource planning based on tumour type is possible at both the provincial and individual RCC level. Also, since only data for the patient follow-up in the initial 5 years is captured here, this model assumes that patient follow-up is required for that period only. In reality, while the bulk of the workload is carried out in the initial 5 years, some patients do recur following that time period and, therefore, the current estimate under-represent the total workload.

### 6.0 Calculating the Average New Patient Caseload Ratio for Medical Oncology

The tumour specific patient care times (TSPCT) were applied to the 1994/95 annual medical oncology workload at each RCC to determine the total patient hours and average hours per patient for each RCC.

The number of available hours on an annual basis for direct patient care (910 teaching and 1012 non-teaching) was divided by the average number of hours per patient to determine the average new patient caseload per medical oncologist by centre type.
The average new patient caseload per FTE medical oncologist was calculated as 158 for teaching RCCs and 173 for non-teaching RCCs (Table 7 & Table 8). The new average caseload ratio represents the annual workload increase at any RCC, which would require an additional medical oncologist. It is not the caseload applicable to any one medical oncologist.

Table 7: Medical Oncology - New patient average workload ratio for teaching RCCs

<table>
<thead>
<tr>
<th>Tumour Type</th>
<th>Hours Per Patient</th>
<th>Hamilton</th>
<th>Kingston</th>
<th>London</th>
<th>Ottawa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>New Pts</td>
<td>New Pts</td>
<td>New Pts</td>
<td>Hours</td>
</tr>
<tr>
<td>Colorectal</td>
<td>4.9 Hrs</td>
<td>432</td>
<td>185</td>
<td>218</td>
<td>1068.2</td>
</tr>
<tr>
<td>Breast</td>
<td>8.8 Hrs</td>
<td>742</td>
<td>296</td>
<td>388</td>
<td>3414.4</td>
</tr>
<tr>
<td>Lung</td>
<td>5.5 Hrs</td>
<td>297</td>
<td>192</td>
<td>270</td>
<td>1485.0</td>
</tr>
<tr>
<td>Ovary</td>
<td>8.7 Hrs</td>
<td>72</td>
<td>10</td>
<td>35</td>
<td>280.0</td>
</tr>
<tr>
<td>Prostate</td>
<td>5.2 Hrs</td>
<td>115</td>
<td>50</td>
<td>78</td>
<td>351.0</td>
</tr>
<tr>
<td>NHL</td>
<td>11.2 Hrs</td>
<td>198</td>
<td>89</td>
<td>169</td>
<td>1892.8</td>
</tr>
<tr>
<td>Other(^\text{13})</td>
<td>2.7 Hrs</td>
<td>951</td>
<td>334</td>
<td>781</td>
<td>2108.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2807 Pts</strong></td>
<td><strong>16,158.7 Hours</strong></td>
<td><strong>1158 Pts</strong></td>
<td><strong>6,812.9 Hours</strong></td>
<td><strong>1939 Pts</strong></td>
</tr>
<tr>
<td><strong>Avg/hrs/pt</strong></td>
<td><strong>5.8</strong></td>
<td><strong>5.9</strong></td>
<td><strong>5.5</strong></td>
<td><strong>5.9</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Hours available on annual basis</strong></td>
<td><strong>910</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New Pt/MO</strong></td>
<td><strong>157</strong></td>
<td><strong>154</strong></td>
<td><strong>165</strong></td>
<td><strong>154</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>157.5</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 8: Medical Oncology - New patient average workload ratio for non-teaching RCCs

<table>
<thead>
<tr>
<th>Tumour Type</th>
<th>Hours Per Patient</th>
<th>Sudbury Hours</th>
<th>Windsor Hours</th>
<th>Thunder Bay Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>New Pts</td>
<td></td>
<td>New Pts</td>
<td></td>
</tr>
<tr>
<td>Colorectal</td>
<td>4.9 Hrs</td>
<td>194</td>
<td>950.6</td>
<td>129</td>
</tr>
<tr>
<td>Breast</td>
<td>8.8 Hrs</td>
<td>341</td>
<td>3000.8</td>
<td>159</td>
</tr>
<tr>
<td>Lung</td>
<td>5.5 Hrs</td>
<td>139</td>
<td>764.5</td>
<td>111</td>
</tr>
<tr>
<td>Ovary</td>
<td>8.7 Hrs</td>
<td>18</td>
<td>156.6</td>
<td>21</td>
</tr>
<tr>
<td>Prostate</td>
<td>5.2 Hrs</td>
<td>34</td>
<td>176.8</td>
<td>14</td>
</tr>
<tr>
<td>NHL/HL</td>
<td>11.2 Hrs</td>
<td>94</td>
<td>1052.8</td>
<td>62</td>
</tr>
<tr>
<td>Other 14</td>
<td>2.7 Hrs</td>
<td>311</td>
<td>839.7</td>
<td>211</td>
</tr>
<tr>
<td>Total</td>
<td>1131 Pts</td>
<td>6,941.8 hours</td>
<td>707 Pts</td>
<td>4,161.4 hours</td>
</tr>
<tr>
<td>Avg./hrs/pt</td>
<td>6.1</td>
<td>5.9</td>
<td>5.6</td>
<td></td>
</tr>
</tbody>
</table>

7.0 IMPLEMENTING A CASELOAD STANDARD IN ONTARIO

The average new caseload ratio will support planning at both the provincial and regional level. It will, for the first time, support planning that will reflect the actual case mix unique to the catchment area. The case mix can be translated into operational plans that reflect the unique day-to-day demands at individual RCCs.

7.1 Provincial Level

Based on 1994 data, the average new patient caseload ratio per FTE medical oncologist was calculated as 158 for teaching RCCs and 173 for non-teaching RCCs. The average new patient caseload ratio represents the annual workload increase at any RCC, which would require an additional medical oncologist.

7.2 Regional Level

The medical oncology manpower requirement for two fiscal periods (1994/95 and 1997/98) for both a teaching and non-teaching RCC was calculated using the caseload per FTE medical oncologist ratio (Table 9 & Table 10). It is clear that a new patient caseload ratio can be used to determine the changing medical oncology manpower requirement of an individual RCC. What also becomes evident is that while the overall increase in new cases drives the need for additional manpower requirements, changes in the referral rate for specific tumour types can have a significant impact on manpower requirements at the RCC level.

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14 Assumes that 30% of new cases referred to medical oncology receive parenteral therapy over five (5) years (average 6 hours/pt) and that the remaining 70% are seen in consultation with two (2) follow-up visits.
Table 9: Calculation of the Medical Oncologist Manpower Requirement for a teaching RCC - 1994/95 and 1997/98

<table>
<thead>
<tr>
<th>Tumour Type</th>
<th>Hours per patient</th>
<th>Available Hours</th>
<th>1994/95</th>
<th>1997/98</th>
<th>Number of MOs required</th>
<th>Number of MOs required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorectal</td>
<td>4.9</td>
<td>910</td>
<td>373</td>
<td>2.0</td>
<td>401</td>
<td>2.2</td>
</tr>
<tr>
<td>Breast</td>
<td>8.8</td>
<td>910</td>
<td>388</td>
<td>3.75</td>
<td>779</td>
<td>7.5</td>
</tr>
<tr>
<td>Lung</td>
<td>5.5</td>
<td>910</td>
<td>278</td>
<td>1.7</td>
<td>433</td>
<td>2.6</td>
</tr>
<tr>
<td>Ovary</td>
<td>8.7</td>
<td>910</td>
<td>7</td>
<td>0.07</td>
<td>16</td>
<td>0.2</td>
</tr>
<tr>
<td>Prostate</td>
<td>5.2</td>
<td>910</td>
<td>33</td>
<td>0.2</td>
<td>196</td>
<td>1.1</td>
</tr>
<tr>
<td>NHL/HL</td>
<td>11.2</td>
<td>910</td>
<td>126</td>
<td>1.6</td>
<td>95</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>1205</td>
<td>9.32</td>
<td>1920</td>
<td>14.8</td>
</tr>
<tr>
<td>Other Tumours</td>
<td></td>
<td>2.7</td>
<td>910</td>
<td>697</td>
<td>516</td>
<td>1.5</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td>1902</td>
<td>11.42</td>
<td>2436</td>
<td>16.3</td>
</tr>
</tbody>
</table>

Table 10: Calculation of the Medical Oncologist Manpower Requirement for a Non-teaching RCC - 1994/95 and 1997/98

<table>
<thead>
<tr>
<th>Tumour Type</th>
<th>Hours per patient</th>
<th>Available Hours</th>
<th>1994/95</th>
<th>1997/98</th>
<th>Number of MOs required</th>
<th>Number of MOs required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorectal</td>
<td>4.9</td>
<td>1012</td>
<td>185</td>
<td>0.9</td>
<td>272</td>
<td>1.3</td>
</tr>
<tr>
<td>Breast</td>
<td>8.8</td>
<td>1012</td>
<td>305</td>
<td>2.7</td>
<td>364</td>
<td>3.2</td>
</tr>
<tr>
<td>Lung</td>
<td>5.5</td>
<td>1012</td>
<td>106</td>
<td>0.58</td>
<td>110</td>
<td>0.6</td>
</tr>
<tr>
<td>Ovary</td>
<td>8.7</td>
<td>1012</td>
<td>17</td>
<td>0.15</td>
<td>27</td>
<td>0.2</td>
</tr>
<tr>
<td>Prostate</td>
<td>5.2</td>
<td>1012</td>
<td>17</td>
<td>0.09</td>
<td>31</td>
<td>0.1</td>
</tr>
<tr>
<td>NHL/HL</td>
<td>11.2</td>
<td>1012</td>
<td>78</td>
<td>0.86</td>
<td>137</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>708</td>
<td>5.28</td>
<td>941</td>
<td>7.0</td>
</tr>
<tr>
<td>Other Tumours</td>
<td></td>
<td>2.7</td>
<td>1012</td>
<td>311</td>
<td>317</td>
<td>.85</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td>1019</td>
<td>6.11</td>
<td>1258</td>
<td>7.85</td>
</tr>
</tbody>
</table>

8.0 ISSUES TO CONSIDER WHEN IMPLEMENTING A WORKLOAD STANDARD FOR MEDICAL ONCOLOGY ON ONTARIO

8.1 Changes in patterns of practice
The increase in the number of treatment options and significant changes in patterns of practice over the last five years have had a significant impact on the average time required for different appointment types. As a result, the average times for different appointment types in Table 1 do not represent the reality of practice today.

Evidence-based guidelines have had an impact on patterns of practice. For example, greater numbers of patients are now offered salvage chemotherapy. Because of the number of options available in combination with their complexity, the 1994 average time of 20 minutes for salvage chemotherapy is no longer valid. As well, newly diagnosed patients with early stage cancer are now offered treatment options that would not have been considered or offered in 1994. In short, medical oncologists can now provide patients, at all stages of all tumour types, choices and options that were not available in 1994.
8.2 Referral Rates

Any formula developed for medical oncology manpower planning and any recommended caseload per medical oncologist ratio will be significantly impacted by the referral rate of new cancer cases for any treatment (medical oncology or radiation oncology) and the referral rate of new cancer cases specifically to medical oncology.

8.2.1 Referral Rate to Cancer Centres

In any given geographic region in Ontario, new incident cases for each tumour site are diagnosed each year. A percentage of these patients will receive treatment in the community (often surgery or palliative care). The remainder will be referred to a Regional Cancer Centre, PMH or a community oncology treatment facility (Referral Rate).

The referral rates of "New Cases" to Cancer Centres in Ontario (total new cases registered at any cancer centre including PMH) for 1994 and 1995 are summarized in Attachment 2 A.

The referral rate for each tumour type increased between 1994 and 1995. The increase is attributable, in part, to improved outcomes, new treatment protocols, and greater patient and physician awareness of the treatment options available to people diagnosed with cancer. It is anticipated that as new treatment modalities evolve and patient and physician awareness of treatment options increases, referral rates will increase further. Referral rates will need to be monitored on an on-going basis to ensure that caseload ratios and the funding formula remain valid.

Referral data provide an insight into cancer incidence at the provincial level and the extent to which patients find their way into the formal cancer system in Ontario. What is not clear or understood is the extent to which those patients not referred to the formal cancer system receive care from community-based medical oncology resources.

8.2.2 Referral to Medical Oncology - New Medical Oncology Workload

New cases referred to a cancer centre can be handled as follows:

- assessment and treatment by a radiation oncologist and subsequent evaluation and treatment by a medical oncologist;
- assessment and treatment by a medical oncologist and subsequent evaluation and treatment by a radiation oncologist; and,
- consultation only with a medical oncologist and follow-up or continuing care delivered by a community-based physician with support and advice from a medical oncologist.

The referral rate to medical oncology is the rate of referral of new RCC patients to medical oncology for assessment and/or treatment. These patients constitute the new medical oncology workload for cancer centres. Attachment 2 B summarizes new RCC case referrals to medical oncology for 1994/95.

8.3 Changing consumer profile

Referral rates to RCCs and to Medical Oncology within RCCs continue to increase. A better understanding of treatment options on the part of family physicians and other referring physicians drives the growth in referral rate. The more significant driver may be a growing awareness of treatment options on the part of the consumer.
The change in the consumer profile has had a significant impact on patterns of practice. Patients want timely access to appropriate state-of-the art care. They come into the cancer system with a significant knowledge about their options and an expectation that they will be an equal partner in the development and delivery of their care plan. They expect that they will be given the time needed to review and discuss treatment options with their medical oncologist prior to making a decision about treatment.

9.0 CONCLUSIONS

The caseload per FTE medical oncologist ratio has been developed from the actual workload at the Regional Cancer Centers of Cancer Care Ontario. It is, therefore, appropriate to limit the application of the workload ratio to the Regional Cancer Centres within the formal cancer care delivery system. It is reasonable to assume that the workload ratio is also applicable to the PMH. The application of this workload ratio to community-based medical oncology is less certain. Any final decision about manpower requirements for medical oncology and any strategy developed to address manpower requirements for the province must include and integrate the formal and community-based requirements.

Workload Standard Recommendations

1. It is recommended that the workload standard for medical oncologists in teaching RCCs be set at 158 new patients per year.
2. It is further recommended that the workload standard for medical oncologists in non-teaching RCCs be set at 173 new patients per year.
3. It is recommended that this average caseload represent the annual workload increase at any RCC, which would require an additional medical oncologist (FTE). It is not the caseload applicable to any one medical oncologist.
4. It is recommended that the new workload standards be implemented over a three year period starting in fiscal 1999/2000.
5. It is recommended that additional data be gathered to determine the workload standard and manpower requirements for PMH and community-based medical oncologists.

Other Recommendations

1. The current and future Medical Oncologist deficit for each RCC and the province must be calculated. The current training programs (number of training positions and funding) need to be expanded to address the anticipated deficit.
2. Even with an expansion of training programs, it is recognized that it is very unlikely that the system will be able to meet the growing demand for medical oncology resources in RCCs/PMH and community-based programs. As a result, the current delivery system must be reviewed to identify opportunities to provide high quality oncology care by changing the current delivery model and expanding the role of other health providers in the cancer care delivery system. Opportunities could include an enhanced role for the family practitioner and an expanded role for clinical assistants and oncology advanced practice nurses. Such initiatives need to be discussed in detail and factored into future manpower strategies for medical oncology.
3. Patterns of practice are constantly changing. It is therefore recommended that data be gathered on a periodic basis to monitor the changes in workload and patterns of practice and determine the need to revise the recommended workload ratios for teaching and non-teaching centres.
Practice activities were divided into five major groupings with sub-categories

1. **Patient Care**: direct outpatient or in-patient care supportive care for the patient or family, and other patient care. An effort was made to distinguish care provided directly by the oncologist as opposed to the supervision of care given by medical residents or fellows. In-patient rotations (usually in 2-4 weeks blocks) and blocks of teaching time were excluded.

2. **Administrative**: non-clinical administrative activities were ascribed to Hospital/RCC, University, office management, or specialty meetings.

3. **Clinical research**: treatment protocol development/review, data analysis, committee protocol meetings and grant writing. It did not include the care of patients on study protocols.

4. **Education**: formal educational activities (lectures, presentation at rounds and seminars, journal club), informal activities (unscheduled teaching activities in clinics and on wards), preparation (time spent preparing for rounds, lectures, etc.) and Continuing Medical Education (CME).

5. **Travel**: transportation to and from meetings, peripheral clinics and between hospitals.
## Referral Rate: New Cases to Cancer Centres by Tumour Type - 1994 & 1995

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<th>Tumour Type</th>
<th>1994</th>
<th>1995</th>
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<tr>
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<td>5939</td>
<td>2571 (43.3%)</td>
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<tr>
<td>Lung</td>
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<td>3511 (55.6%)</td>
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<tr>
<td>- NHL</td>
<td>1845</td>
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<tr>
<td>- HL</td>
<td>306</td>
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<tr>
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<tr>
<td>Ovary</td>
<td>902</td>
<td>552 (61.2%)</td>
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Note: Incident cases are calendar year - New cases are fiscal year
Referral Rate: New Cases to Medical Oncology / RCCs and TSRCC - 1994/95

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<thead>
<tr>
<th>Tumour Type</th>
<th>1994/95 RCCs, excluding TSRCC</th>
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<td>603</td>
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<td>• HL</td>
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<td>146</td>
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‡ New cases referred to or registered with medical oncology

NOTE: Because of the impact of fee-for-service medical oncologists in the Greater Toronto Area and the resources available through PMH, the referral rate to medical oncology at Toronto Sunnybrook Regional Cancer Centre (TSRCC) is different than that of other RCCs. It is not unusual for a patient to be diagnosed and to receive systemic therapy treatment outside TSRCC. In many cases, these patients will only be referred to TSRCC for a radiation oncology consultation and treatment. As a result, it was considered necessary to provide separate referral rate data for TSRCC.
Table 2 Adjusted time per visit

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<td>Complicated follow-up</td>
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Table 3 Estimated time per tumor type

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<th>Disease site</th>
<th>MOPAC time estimate (min) per patient</th>
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<td>Non small cell Lung</td>
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<td>Prostate cancer</td>
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NEED TO ADD CHARTS THAT LINA HAS SCANNED

Breast Cancer – 5 year follow-up
Time Estimates per Patient: Breast
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<th>Pre/post</th>
<th>Weight</th>
<th>Adj/No</th>
<th>Weight</th>
<th>Relapse</th>
<th>yes/no</th>
<th># of patients</th>
<th>Initial consult</th>
<th>Adjuv</th>
<th>First line</th>
<th>Other treatment</th>
<th>Compl</th>
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Total weighted time estimate: 527.41
Time Estimates per Patient and per 100 Patients: Colorectal
## TIME ESTIMATES PER PATIENT

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<th>Relapse yes/no</th>
<th>Palliative yes/no</th>
<th>Initial consult</th>
<th>Regular FU</th>
<th>Adjuv FU</th>
<th>First line/line time</th>
<th>Second time</th>
<th>Estimated time</th>
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## TIME ESTIMATES PER 100 PATIENTS

| Stage | Adjvant yes/no | Relapse yes/no | Palliative yes/no | # of patients | Initial consult | Regular FU | Adjuv FU | First line/line time | Second time | Estimated time |%
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Non Small Cell Lung CA
## Time Estimate

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<th>weight</th>
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<th>Initial chemo</th>
<th>Second chemo</th>
<th>Regular FU</th>
<th>Complicated FU</th>
<th>Time estimate</th>
<th>weighed time estimate</th>
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<td>48%</td>
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<td>30%</td>
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<td>2</td>
<td>4</td>
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<td>relapsed &amp; untreated</td>
<td>20%</td>
<td>22%</td>
<td>5</td>
<td>1</td>
<td>100</td>
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<td>26%</td>
<td>43%</td>
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<td>2</td>
<td>4</td>
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<td>100</td>
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<td>4</td>
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The Cost in Time per Average Patient is therefore:

Small Cell Lung CA
The cost in time per average patient is therefore: SCLC

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<tr>
<th></th>
<th>Ltd vs ext</th>
<th>Treated vs not treated</th>
<th>Cured vs not cured</th>
<th>2nd bx (45 min)</th>
<th>Initial consult 20 min</th>
<th>Primary chemo 20 min</th>
<th>Salavage chemo 25 min</th>
<th>Complic FU 15 min</th>
<th>Regular FU 10 min</th>
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<th>Weight</th>
<th>Total weighted</th>
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<td>0.05</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
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<td>1.85</td>
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<td>1</td>
<td>5</td>
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<td>4</td>
<td>2.9</td>
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<td><strong>Total</strong></td>
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<td><strong>0.8</strong></td>
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<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td><strong>5</strong></td>
<td><strong>3.2</strong></td>
<td><strong>4</strong></td>
<td><strong>2.9</strong></td>
<td><strong>352.5</strong></td>
<td><strong>57.60%</strong></td>
<td><strong>203.04</strong></td>
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</table>

Lymphoma – 5+ year follow-up
LYMPHOMA
5+ Year follow-up

Radiation Oncology

Medical Oncology Initial Consult

Intermediate grade

Stage I/II

Stage III/IV

Low grade

Based on expert opinion.

M:\DAHROUSW\WINWORD\MAROUNMEDTIME\final reports\sep 99 revisions\Lymphoma-sep99.doc11/16/99

Time Estimates per Patient: Lymphoma
### Time Estimates per 100 Patients: Lymphoma

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Weight</th>
<th>Initial Consult</th>
<th>First Line</th>
<th>Second Line</th>
<th>Complicated Visit</th>
<th>Regular Visit</th>
<th>Total Time Estimate</th>
<th>Relative Weight</th>
<th>Weighted Time Estimate</th>
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<td>31.24</td>
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**Total:** 669.10
Ovarian Cancer – 5 year follow-up

**OVARIAN CANCER**

*5 year follow-up*

Initial consult

- **Low (Stage 1A)**: 45% 100 pts
- **Moderate (Stage IB)**: 20% 20 pts
- **High (Stage IC, II, III, IV)**: 65% 65 pts

- **On-FU**: 14 visits e 33.5 visits
- **Recurred**: 4 pts d 19.5 visits
- **Cured**: 29 pts f 33.5 visits

- **Discharged**: Deceased
- **Discharged**: Deceased

**Time Estimates per Patient: Ovarian Cancer**

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<th>Stage</th>
<th>Relapse</th>
<th>Initial</th>
<th>Regular</th>
<th>Comp</th>
<th>First line</th>
<th>Second line</th>
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<th>Relative Percentage</th>
<th>Weighted time</th>
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<td>FU</td>
<td>FU</td>
<td>Adjuv</td>
<td>line</td>
<td>time</td>
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<td>9.5</td>
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Prostate Cancer – 5 year follow-up
PROSTATE CANCER
5 Year follow-up

Radiation Oncology
  a 80%
  b 33% (of initial 100%)
    62% (of MO pts)  38% (of MO pts)

Medical Oncology
  c 85%
  7.5%
  7.5%

Hormonal therapy
  d 10% 40%
  e 8 visits
  f 50% 30% 10%
    7 visits 75%

Chemotherapy
  g 3 visits

Palliative therapy
  h 60%

Secondary
  j 20%
  k 3 visits

Progression
  40%

Primary
  8 visits

Based on expert opinion

Time Estimates: Prostate
## 1. TIME ESTIMATES: PROSTATE

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<th>Therapy</th>
<th>Weight</th>
<th>Initial consult</th>
<th>First line</th>
<th>Second line</th>
<th>Initial visit</th>
<th>Second visit</th>
<th>Regular visit</th>
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<th>Relative weight</th>
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<td>25</td>
<td>15</td>
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<tr>
<td>First line Horm</td>
<td>See (1)</td>
<td></td>
<td>1</td>
<td>7</td>
<td>130</td>
<td></td>
<td></td>
<td></td>
<td>8.50%</td>
<td>11.05</td>
</tr>
<tr>
<td>Second line Horm</td>
<td>See (2)</td>
<td></td>
<td>1.5</td>
<td>3</td>
<td>82.5</td>
<td></td>
<td></td>
<td></td>
<td>80.75%</td>
<td>66.82</td>
</tr>
<tr>
<td>First line Chemo</td>
<td>See (3)</td>
<td></td>
<td>4</td>
<td>1</td>
<td>135</td>
<td></td>
<td></td>
<td></td>
<td>59.36%</td>
<td>80.12</td>
</tr>
<tr>
<td>Second line Chemo</td>
<td>See (4)</td>
<td></td>
<td>2</td>
<td>1</td>
<td>65</td>
<td></td>
<td></td>
<td></td>
<td>14.84%</td>
<td>9.64</td>
</tr>
<tr>
<td>Palliative</td>
<td>See (5)</td>
<td></td>
<td>4</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100.00%</td>
<td>100.00</td>
</tr>
</tbody>
</table>

① First line hormonal therapy: 0.085 derived as follows:

(c)0.85 * (d)0.1  
New patients to MO

② Second line hormonal therapy: 0.8075 derived as follows:

(c)0.85* (d)0.9  
New patients to MO Having received prior 1st line
and  
(c)0.85 * (d)0.1* (f) 0.5  
Patients having failed first line

③ First line chemotherapy: 0.05935 derived as follows:

(c)0.075  
New patients to MO having received prior hormonal tx
and  
(c)0.85* (d)0.9 * (h) 0.6  
Patients having started on 2nd line hormonal tx
and  
(c).85* (d)0.1 * (f)0.5 * (h) 0.6  
Patients having started on 1st line hormonal tx and having gone to second line hormonal tx
and  
(c).85* (d)0.1 * (f)0.4  
Patients having started on 1st line hormonal tx and gone directly to chemo

④ Second line chemotherapy: 0.1484 derived as follows:

@ 0.5935 * 0.25  
Patients who receive 1st line chemo and gone on to 2nd line

⑤ Palliative treatment: 1.0 derived as follows:

All patients receive palliative therapy
Appendix Fa

Statistics Canada Analysis (Lina has scanned)
November 26, 1999

Dr. William K. Evans
Chief Executive Officer
Ottawa Regional Cancer Centre
501 Smyth Road
Ottawa, Ontario K1H 8L6

Dear Dr. Evans;

In your letter dated September 3, 1999, you requested that we undertake a review of the Medical Oncology Manpower Report produced by a Committee of Cancer Care Ontario. We have completed that review.

The Medical Oncology Manpower Report describes a methodology to set workload standards for medical oncologists and estimate current medical oncologist requirements in Ontario by Regional Cancer Centre (RCC). Statistics Canada's review focused on two main issues: i) methodology; and ii) impact of fluctuations in the basic assumptions. In summary, the methodology used in the report is conceptually appropriate. However, some of the assumptions and parameters used may have resulted in an overestimation of the recommended patient case loads in both teaching and non-teaching RCCs. For example, in the calculation, it is assumed that no treatments are given after the 5th year following the diagnosis of any cancer. If we assume an annual recurrence rate of 1% for years 6 to 20 after the diagnosis of breast, prostate, lymphoma, ovarian and colorectal cancer, the recommended patient case loads are overestimated by at least 3 new patients per year. Also, to reflect the reality of practice in the future, if we assume that the average time for regular follow-up has to be increased by 5 minutes, from 15 to 20 minutes, this would result in an overestimation of the
patient case loads by as much as 16 new patients per year. To minimize this potential overestimation, Statistics Canada recommends adding basic assumptions to the current methodology and establishing a mechanism to measure the input parameters and evaluate the impact on workload standards.

You will find attached to this letter the detailed report of our review. If you have any questions or comments on this report, do not hesitate to contact me.

Yours truly,

Jean-Marie Berthelot
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