جمهوری اسلامی ایران
وزارت بهداشت، درمان و آموزش پزشکی

کنترل کیفی
در ثبت بیماری ها و پیامدهای سلامت

دکتر کاظم زنده دل

مسول برنامه ثبت بیماری ها وپیامدهای سلامت

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۲۶ بهمن ۱۳۹۹

چرا کیفیت مهم است؟

- باید به داده های ما اطمینان و جود داشته باشد.اگر کیفیت داده ها خوب نباشد خود ما هم نمی توانیم استفاده کنیم.
- ثبت برنامه گرانی است. اگر قرار نیست کیفیت داشته باشد بهتر است نباشد.
- اگر قرار است ثبت به سیتم بهداشت و درمان کمک کند باید قابل اعتماد باشد. در غیر اینصورت انجام رجیستری در عمل بی فایده است. فرض کنید اگر مدیران بخواهند بر اساس داده غلط تصمیم گیری کنند چه اتفاقی می افتد.

کیفیت کدام قسمت مهم است

1. ورودی
   - تعاریف و دستورالعمل ها
   - منابع اطلاعاتی
2. فرایند
   - روش جمع آوری
   - منابعی که استفاده می شود.
   - روش ثبت اطلاعات
3. نتایج
   - کیفیت داده های ثبت شده
   - تناسب داده ها با هم و ثبات
   - گزارشات

شاخص های کیفیت ثبت

- قابل مقایسه بودن
  - از تعاریفی استفاده کنید که بتوانیم نتایج را مقایسه کنیم.
  - تاریخ تشخیص
  - کدهای استاندارد ICD10
  - از روش معتبر برای تهیه سوالات استفاده کنید.

شاخص های کیفیت ثبت

- صحت اطلاعات
  - تشخیص بیماری
  - مواجهات
  - طبقه بندی بیماری ها
  - وضعیت پیامدها
  - شدت بیماری ها
  - نحوه ثبت بر صحت ثبت اثر می گذارد. (پاتولوژی/بالینی/تصویر برداری)
  - آستانه صحت در متغیرها با هم فرق دارد
    - سن/جنس
    - ادرس بیمار
    - تشخیص نوع بیماری و گروه بندی های دقیق (محل درگیری، نوع بافت شناسی)

شاخص های کیفیت ثبت

- internal consistency
  - ‘edit checks’ during or after coding
  - incorrect codes
  - incorrect combinations
  - incorrect order of events, age vs. dates
  - missing information

  - reject
  - flag for check
  - warn for rarity

- age/incidence and birth dates
- age/site/histology
- site/histology
- sex/site
- sex/histology
- behaviour/ site
- behaviour/ histology
- grade/ histology
- basis of diagnosis/histology

شاخص های کیفیت ثبت

- **کامل بودن**
  - ثبت جمعیتی
    - ممکن است بیمارانی که به بیمارستانها نمی اید را نتوانید ثبت کنید.
  - ثبت بیمارستانی
    - تمام بیماران هر بیمارستان جمع آوری شوند
    - ممکن است بیماران سرپایی ثبت نشوند
    - ممکن است کد گذاری در بخش مدارک پزشکی درست نباشد و بعضی بیماران ثبت نشوند.
    - ممکن است بیماران شدید و یا بیماران سرحال تر ثبت نشوند.
    - معیارهای ورود و خروج دقیق مشخص شود.

    - توضیح: کامل بودن داده های بیمار شامل این شاخص نیست و مربوط به صحت داده ها می باشد. زیاد بودن این گروه از بیماران که داده های زیادی از انها ثبت نمی شود به اصل کامل بودن ثبت آسیب می زند. چون در واقع باعث می شود همه بیماران در تحلیل ها استفاده نشود.

شاخص های کیفیت ثبت

- بروز بودن
  - گزارش ثبت نمی تدواند به خط باشد
    - ۶-۲۴ ماه بعد از پایان سال (چرا؟)
  - چه عواملی باعث تاخیر می شود.
    - برنامه ؟
    - مدیریت ؟
    - بودجه ؟
    - روش اجرا؟

روش بررسی

هنگام اجرا و گزارشات (ارزیابی داخلی)

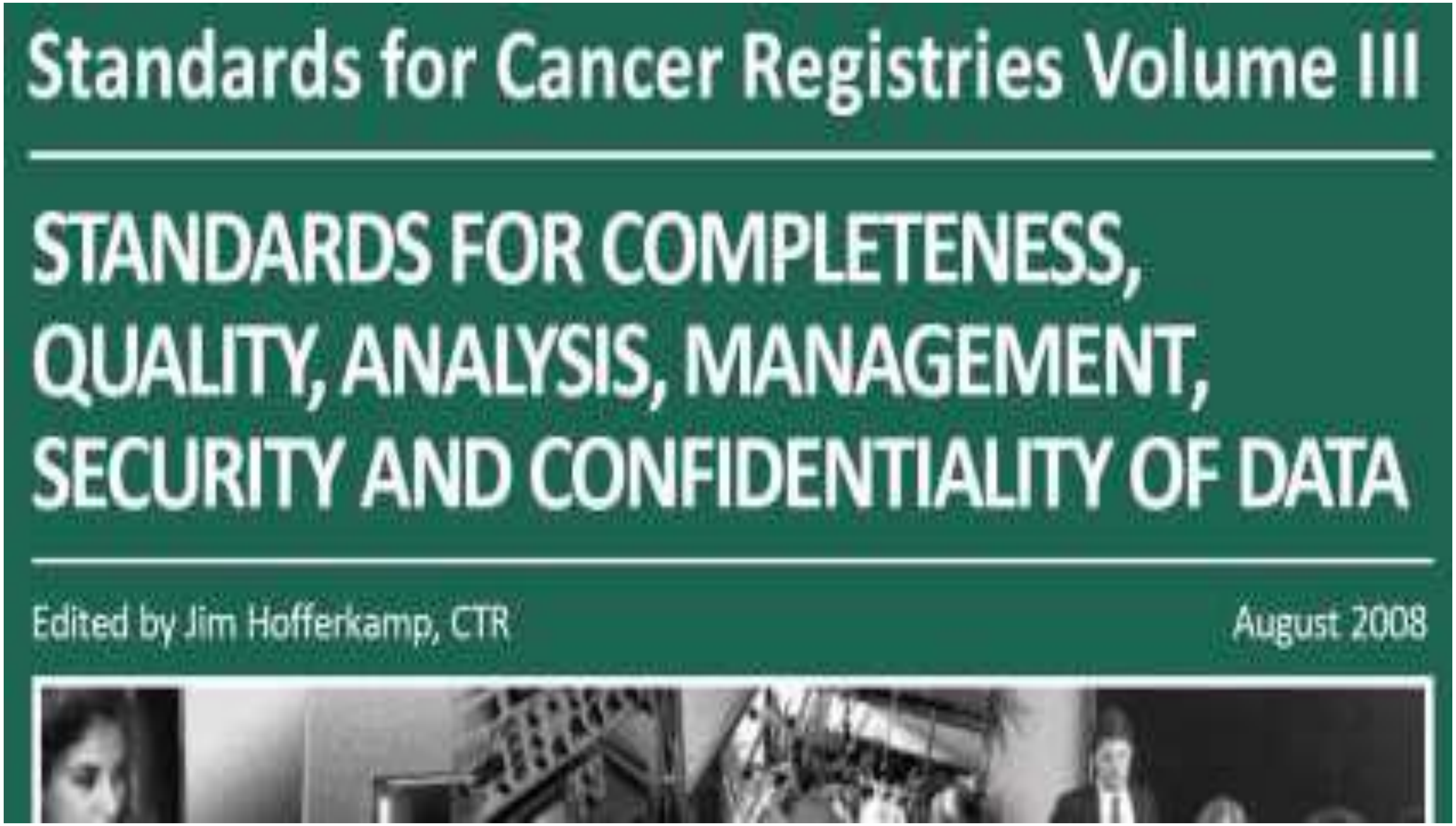
- دستورالعمل (دانش و مهار کارشناسان ثبت)
- پرسشنامه
- نرم افزار مناسب
- تحلیل دقیق گزارش ها

- پژوهشهای کنترل کیفی (ارزیابی خارجی)
  - چک کردن مجدد توسط یک کارشناس دیگر re-abstraction
  - مطالعات کنترل کیفی Capture-Recapture
  - استفاده از داده های مستقل

- سوال: ارزیابی داخلی و خارجی توسط چه کسی باید انجام بشود؟

توصیه ها

- پروتکل کنترل کیفی ضروری است.
- در گزارشهای ثبت وضعیت شاخص ها را گزارش کنید.
- بازخورد نتایج کنترل کیفی در سطح وسیع باید انجام بشود.



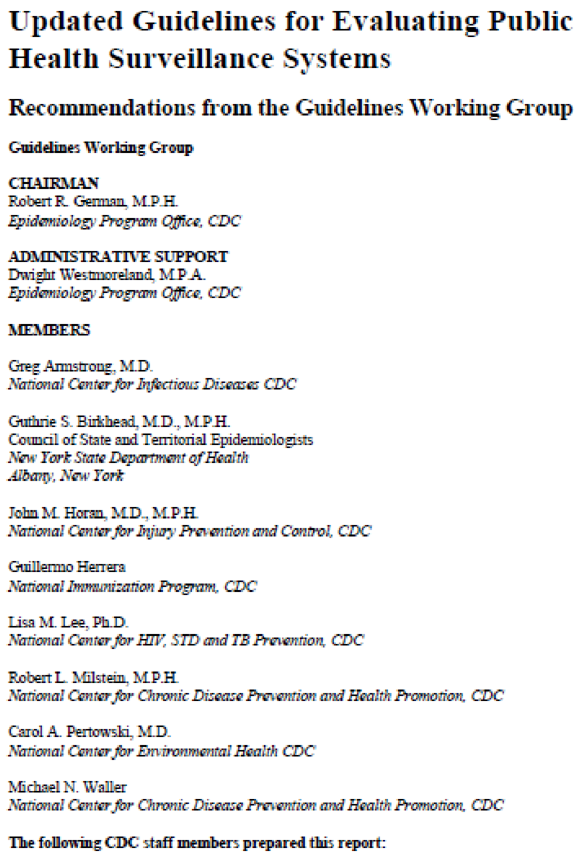
Standards for Cancer Registries Volume III

STANDARDS FOR COMPLETENESS, QUALITY, ANALYSIS, MANAGEMENT, SECURITY AND CONFIDENTIALITY OF DATA

Edited by Jim Hofferkamp, CTR

August 2008

Evaluation of the Registry as a Public Health Surveillance System



Updated Guidelines for Evaluating Public Health Surveillance Systems

Recommendations from the Guidelines Working Group

Guidelines Working Group

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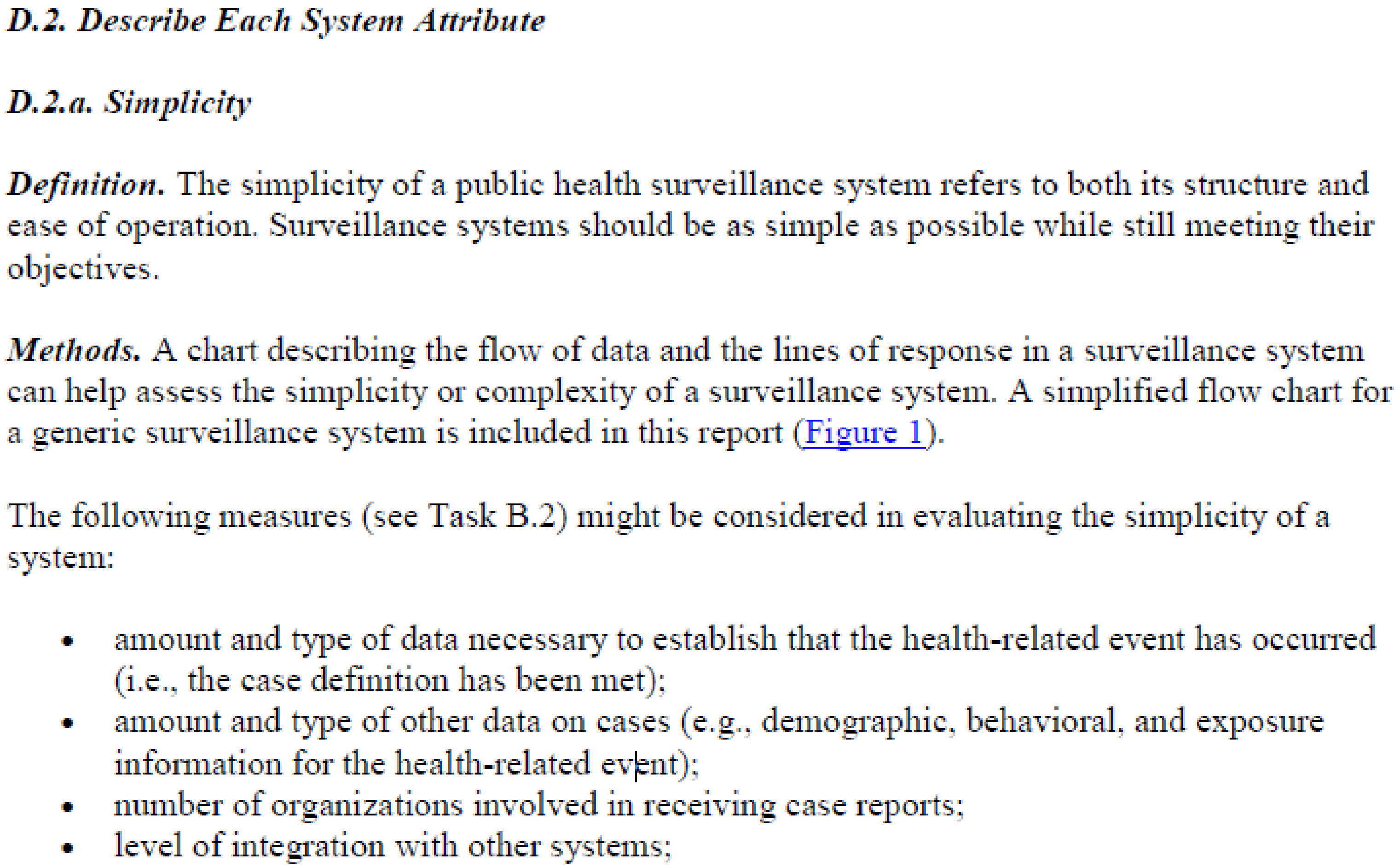
The following CDC staff members prepared this report:

System attributes:

- Simplicity
- Flexibility
- Data quality
- Acceptability
- Sensitivity
- Predictive value positive
- Representativeness
- Timeliness
- Stability



D.2. Describe Each System Attribute

D.2.a. Simplicity

Definition. The simplicity of a public health surveillance system refers to both its structure and ease of operation. Surveillance systems should be as simple as possible while still meeting their objectives.

Methods. A chart describing the flow of data and the lines of response in a surveillance system can help assess the simplicity or complexity of a surveillance system. A simplified flow chart for a generic surveillance system is included in this report (Figure 1).

The following measures (see Task B.2) might be considered in evaluating the simplicity of a system:

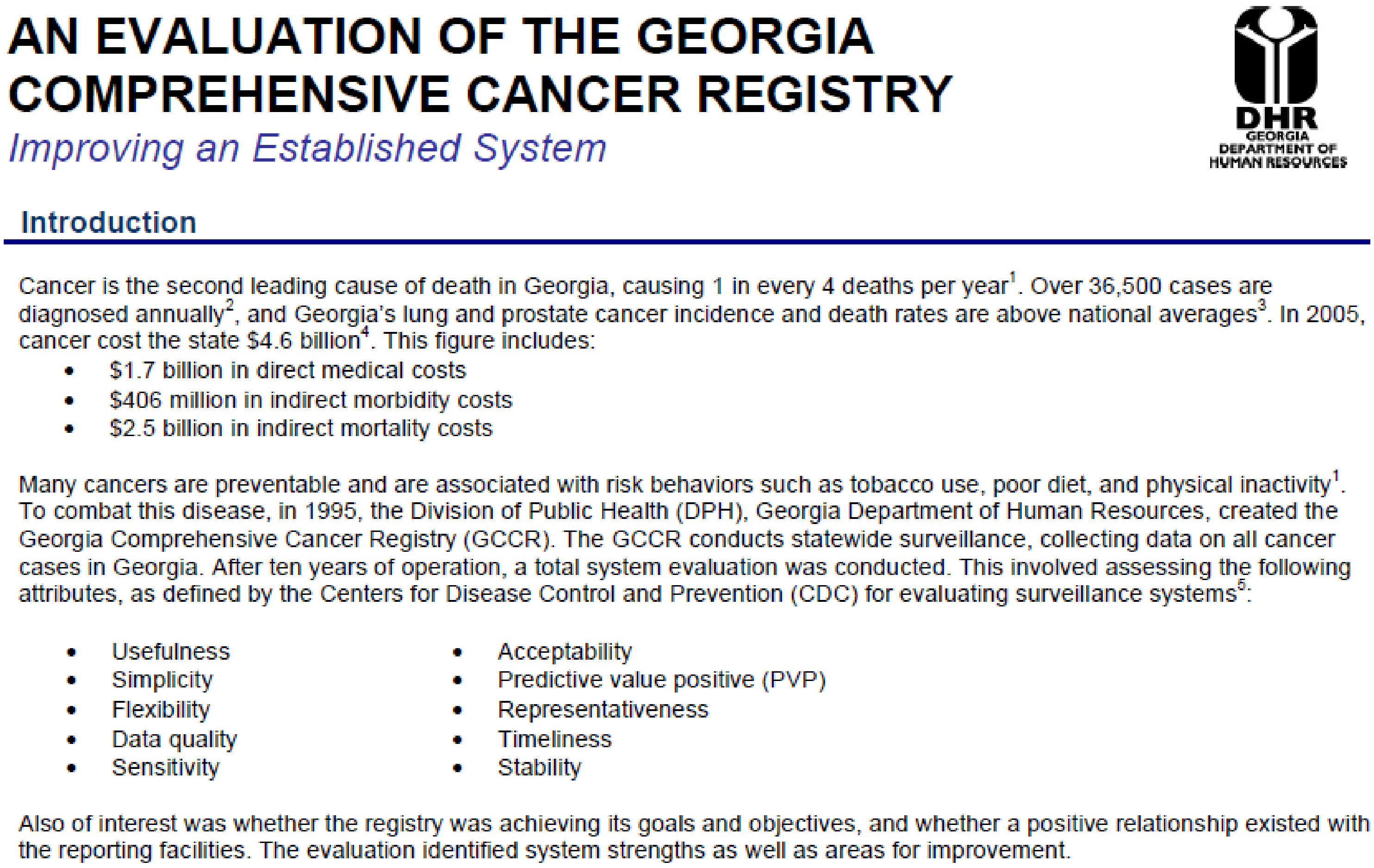
- amount and type of data necessary to establish that the health-related event has occurred (i.e., the case definition has been met);
- amount and type of other data on cases (e.g., demographic, behavioral, and exposure information for the health-related event);
- number of organizations involved in receiving case reports;
- level of integration with other systems;

- method of collecting the data, including number and types of reporting sources, and time spent on collecting data;
- amount of follow-up that is necessary to update data on the case;
- method of managing the data, including time spent on transferring, entering, editing, storing, and backing up data;
- methods for analyzing and disseminating the data, including time spent on preparing the data for dissemination;
- staff training requirements; and
- time spent on maintaining the system.

Discussion. Thinking of the simplicity of a public health surveillance system from the design perspective might be useful. An example of a system that is simple in design is one with a case definition that is easy to apply (i.e., the case is easily ascertained) and in which the person identifying the case will also be the one analyzing and using the information. A more complex system might involve some of the following:

- special or follow-up laboratory tests to confirm the case;
- investigation of the case, including telephone contact or a home visit by public health personnel to collect detailed information;
- multiple levels of reporting (e.g., with the National Notifiable Diseases Surveillance System, case reports might start with the health-care provider who makes the diagnosis and pass through county and state health departments before going to CDC [*29*]); and
- integration of related systems whereby special training is required to collect and/or interpret data.

Simplicity is closely related to acceptance and timeliness. Simplicity also affects the amount of resources required to operate the system.



AN EVALUATION OF THE GEORGIA COMPREHENSIVE CANCER REGISTRY

Improving an Established System

DHR
GEORGIA
DEPARTMENT OF
HUMAN RESOURCES

Introduction

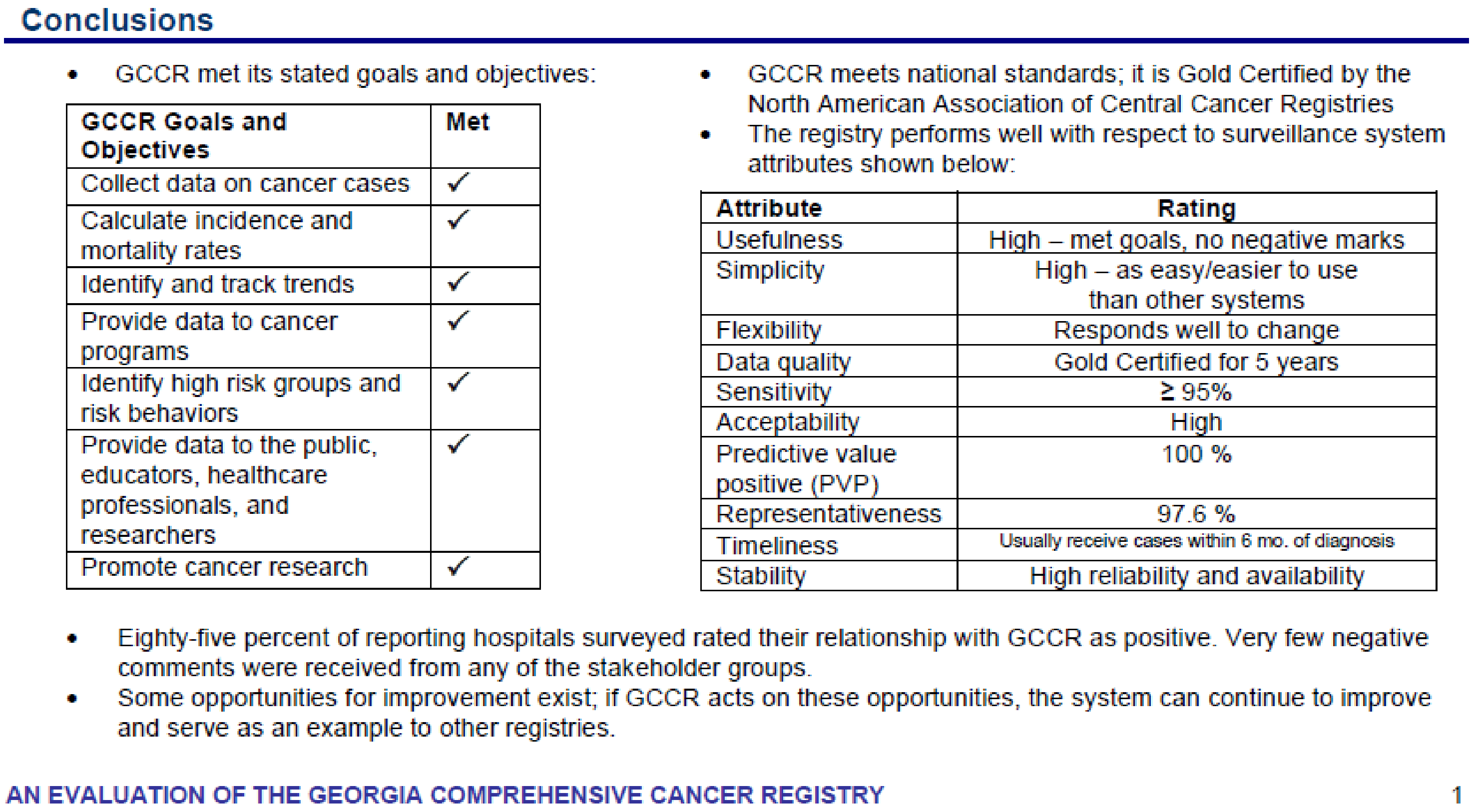
Cancer is the second leading cause of death in Georgia, causing 1 in every 4 deaths per year[1]. Over 36,500 cases are diagnosed annually[2], and Georgia's lung and prostate cancer incidence and death rates are above national averages[3]. In 2005, cancer cost the state $4.6 billion[4]. This figure includes:

- $1.7 billion in direct medical costs
- $406 million in indirect morbidity costs
- $2.5 billion in indirect mortality costs

Many cancers are preventable and are associated with risk behaviors such as tobacco use, poor diet, and physical inactivity[1]. To combat this disease, in 1995, the Division of Public Health (DPH), Georgia Department of Human Resources, created the Georgia Comprehensive Cancer Registry (GCCR). The GCCR conducts statewide surveillance, collecting data on all cancer cases in Georgia. After ten years of operation, a total system evaluation was conducted. This involved assessing the following attributes, as defined by the Centers for Disease Control and Prevention (CDC) for evaluating surveillance systems[5]:

- Usefulness
- Simplicity
- Flexibility
- Data quality
- Sensitivity
- Acceptability
- Predictive value positive (PVP)
- Representativeness
- Timeliness
- Stability

Also of interest was whether the registry was achieving its goals and objectives, and whether a positive relationship existed with the reporting facilities. The evaluation identified system strengths as well as areas for improvement.



Conclusions

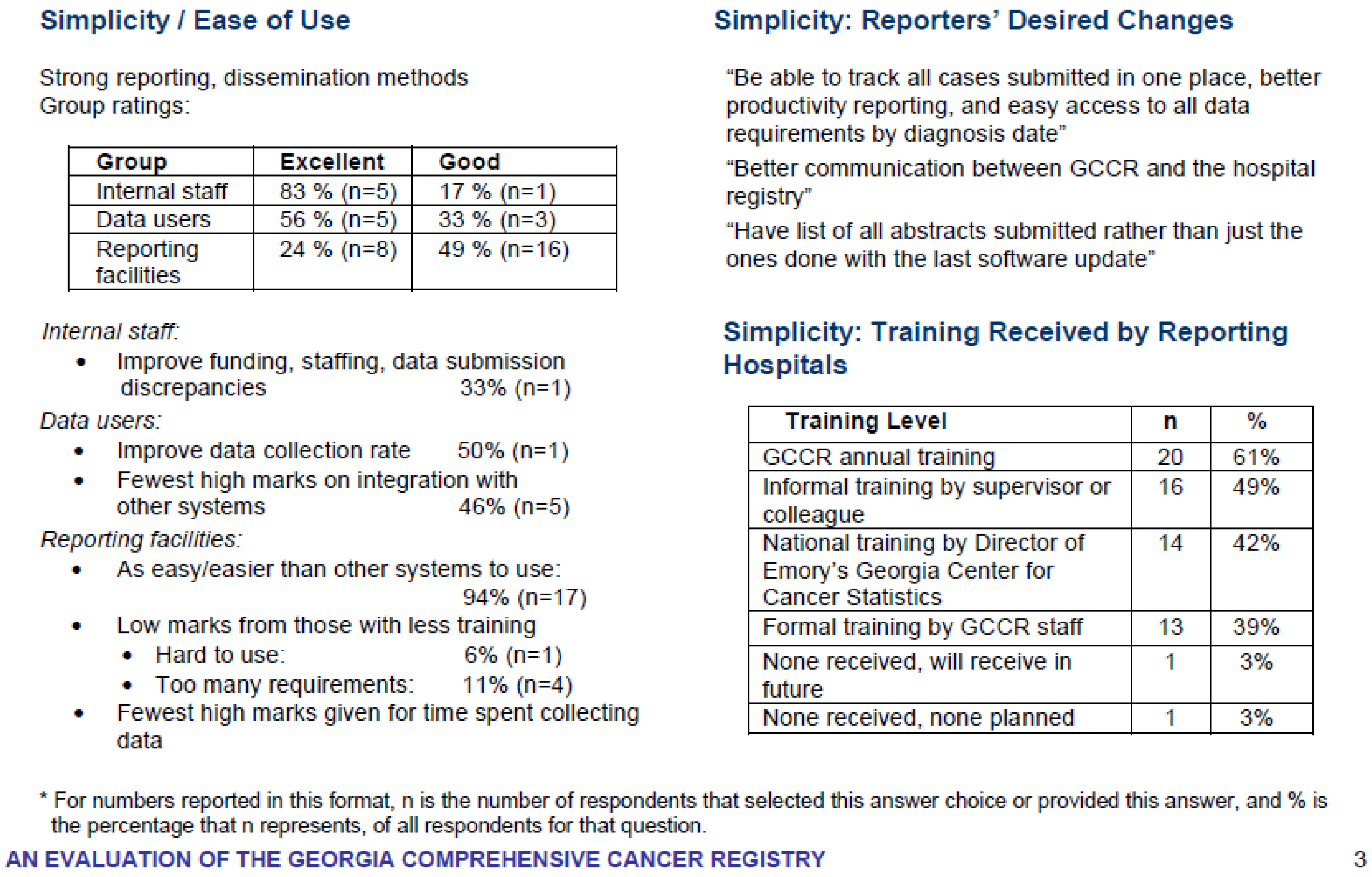
- GCCR met its stated goals and objectives:

GCCR Goals and Objectives	Met
Collect data on cancer cases	✓
Calculate incidence and mortality rates	✓
Identify and track trends	✓
Provide data to cancer programs	✓
Identify high risk groups and risk behaviors	✓
Provide data to the public, educators, healthcare professionals, and researchers	✓
Promote cancer research	✓

- GCCR meets national standards; it is Gold Certified by the North American Association of Central Cancer Registries
- The registry performs well with respect to surveillance system attributes shown below:

Attribute	Rating
Usefulness	High – met goals, no negative marks
Simplicity	High – as easy/easier to use than other systems
Flexibility	Responds well to change
Data quality	Gold Certified for 5 years
Sensitivity	≥ 95%
Acceptability	High
Predictive value positive (PVP)	100 %
Representativeness	97.6 %
Timeliness	Usually receive cases within 6 mo. of diagnosis
Stability	High reliability and availability

- Eighty-five percent of reporting hospitals surveyed rated their relationship with GCCR as positive. Very few negative comments were received from any of the stakeholder groups.
- Some opportunities for improvement exist; if GCCR acts on these opportunities, the system can continue to improve and serve as an example to other registries.



Simplicity / Ease of Use

Strong reporting, dissemination methods
Group ratings:

Group	Excellent	Good
Internal staff	83 % (n=5)	17 % (n=1)
Data users	56 % (n=5)	33 % (n=3)
Reporting facilities	24 % (n=8)	49 % (n=16)

Internal staff:

- Improve funding, staffing, data submission discrepancies 33% (n=1)

Data users:

- Improve data collection rate 50% (n=1)
- Fewest high marks on integration with other systems 46% (n=5)

Reporting facilities:

- As easy/easier than other systems to use: 94% (n=17)
- Low marks from those with less training
  - Hard to use: 6% (n=1)
  - Too many requirements: 11% (n=4)
- Fewest high marks given for time spent collecting data

Simplicity: Reporters' Desired Changes

"Be able to track all cases submitted in one place, better productivity reporting, and easy access to all data requirements by diagnosis date"

"Better communication between GCCR and the hospital registry"

"Have list of all abstracts submitted rather than just the ones done with the last software update"

Simplicity: Training Received by Reporting Hospitals

Training Level	n	%
GCCR annual training	20	61%
Informal training by supervisor or colleague	16	49%
National training by Director of Emory's Georgia Center for Cancer Statistics	14	42%
Formal training by GCCR staff	13	39%
None received, will receive in future	1	3%
None received, none planned	1	3%

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* For numbers reported in this format, n is the number of respondents that selected this answer choice or provided this answer, and % is the percentage that n represents, of all respondents for that question.

Flexibility

GCCR responds well to change

Reporting facilities:

- Policy & Procedures Manual update was:
  - Excellent: 26% (n=8)
  - Good: 55% (n=17)
- Georgia EDITS * update was:
  - Excellent: 52% (n=12)
  - Good: 35% (n=8)
- Somewhat quick response to change: 59% (n=19)

* EDITS is quality control software used by reporting facilities

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Acceptability

Internal staff:

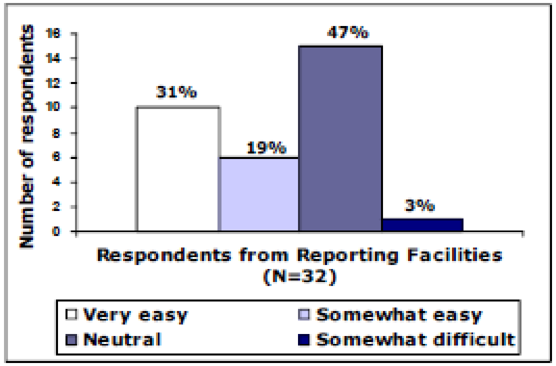
- Facilities are very willing to report: 50% (n=3)
- Facilities are willing to report: 50% (n=3)
- Usual completeness rate for facilities: 80%-90%
- Usual delay in reporting: 6-12 mo.

Reporting facilities perceived that:

- Their facility's completeness rate was between 90%-100% for the 2004 diagnosis year: 79% (n=26)
- Their completeness rate for 2004 was achieved within 6-12 mo. 60% (n=18)
- Their facility submits data in a timely manner: 94% (n=32)

Acceptability: Difficulty of Reporting

Reporting facilities' responses to the question, "How difficult is it for you or your facility to report cases?"



ارتقاء کیفی فعالیت‌های ثبت سرطان در ایران
بت‌های ثبت سرطان در کشور

و[1]، دکتر آذین نحوی‌جو[1]

میولوژی و آمار پزشکی، انستیتو کارولینسکا، سوئد
کز تحقیقات سرطان دانشگاه علوم پزشکی تهران، کد پستی: ١٤١٩٧٣٣١٤١
kzendeh@

پذیرش: ٨٨/١٠/٢٢

، جزء مهم‌ترین الویت‌های بهداشتی در ایران می‌باشد. در دهه
ت ثبت سرطان صورت گرفته و گزارش‌های متعددی منتشر شده
رد ارزیابی قرار دادیم.

الی ١٣٨٥ میزان‌های بروز استاندارد شده سنی سرطان (ASRs)
سپس نتایج ثبت پاتولوژی و ثبت جمعیتی مربوط به ٦ سرطان
ستان، و سمنان مورد مقایسه قرار دادیم.

ز ١٣٨٣ الی١٣٨٥ افزایش یافته است. البته بررسی استانی نشان
تان‌ها روند افزایشی مشاهده نشد. ثبت پاتولوژی در مردان ٦٣ –
در سرطان‌های کشنده مثل معده (٤٤٪ در مردان و ٤٨٪ در زنان)

طمینانی را ارایه نمی‌دهد و ASRs بسیار کمتر از میزان واقعی
اری و رفع نیازهای تحقیقاتی برنامه ملی ثبت سرطان نیاز به

یران

Basic & Clinical Cancer Research

ORIGINAL ARTICLE

Audit of a nationwide pathology-based cancer registry in Iran

Kazem Zendehde [1,2,*], Zahra Sedigh [1], Jaleh Hassanloo [1], Azin Nahvijou [1]

ABSTRACT

Background: Cancer registries are important infrastructure for cancer control programs. However most developing countries lack population based cancer registry. In Iran there cancer incidence is estimated based on pathology-based cancer registry. In this study we evaluated results of the nationwide pathology-based cancer registry in Iran.

Materials and Methods: We compared age-standardized incidence rate (ASRs) of all cancers combined among male and female from 2004 to 2006 for the entire country and stratified by 30 provinces. In addition, we compared ASRs of all cancer combined and six common cancers from pathology-based cancer registry with the results of population-based cancer registry conducted in five provinces including Tehran, Aradbil, Kerman, Golestan, and Semnan provinces. Ratio of pathology-based to population-based cancer registries in these provinces perceived as the completeness of pathology-based cancer registry.

Results: We found that ASRs among men and women increased from 2004 to 2006. However, the increasing trend was not consistent for all 30 provinces; ASRs increased, decreased on remained stable in different provinces. Completeness of pathology-based cancer registry was about 58% and 64% for men and women, respectively. Among the other, the completeness was extremely low for lung (26%) and esophageal (53%), and stomach (54%) cancers among male and for stomach (54%) and ovary (0.68%) among female.

Conclusion: Pathology-based cancer registry underestimates the cancer incidence and cannot be a reliable source for policy making and research. Inclusion of other sources such as death registry and establishment of population-based cancer registry is necessary. We suggest promoting regional population-based registries using standard methods in Iran and other developing countries.

Keywords: *cancer registry, pathology-based, population-based, Iran.*

1. Cancer Research Center, Tehran University of Medical Sciences, Iran.
2.Department of Medical Epidemiology and Biostatistics, Karolinska Institute, Sweden.

Completeness and underestimation of cancer mortality rate in I.R of Iran: a report from the Fars Province in southern Iran

Maryam Marzban[1], Ali-Akbar Haghdoost[2,3], Eshagh Dortaj[2,3], Abbas Bahrampour[2,3],Kazem Zendehdel

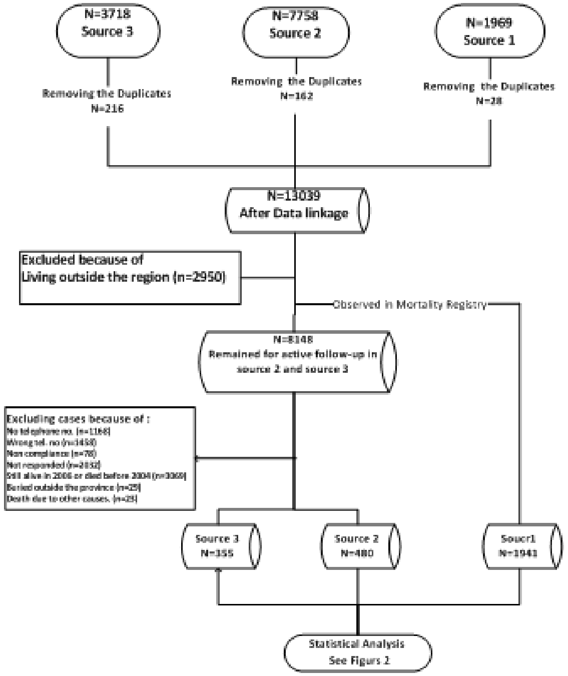


Figure1: Flowchart of the record linkage from the three data sources for using capture-recapture method and evaluate true mortality rate of cancer in Fars Province in the southern Iran in 2004-2006. **Source 1:** Mortality Registry. **Source 2:** Follow-up of Pathology Based Cancer Registry; **Source 3:** Follow-up of Hospital data

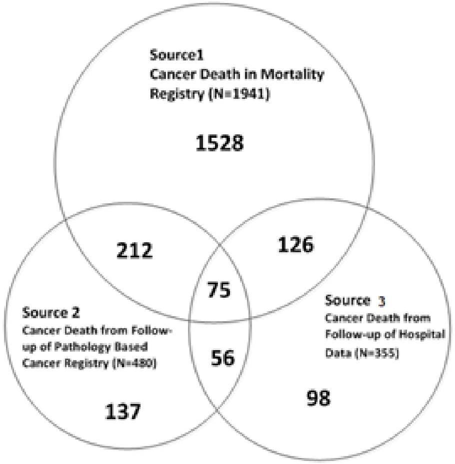
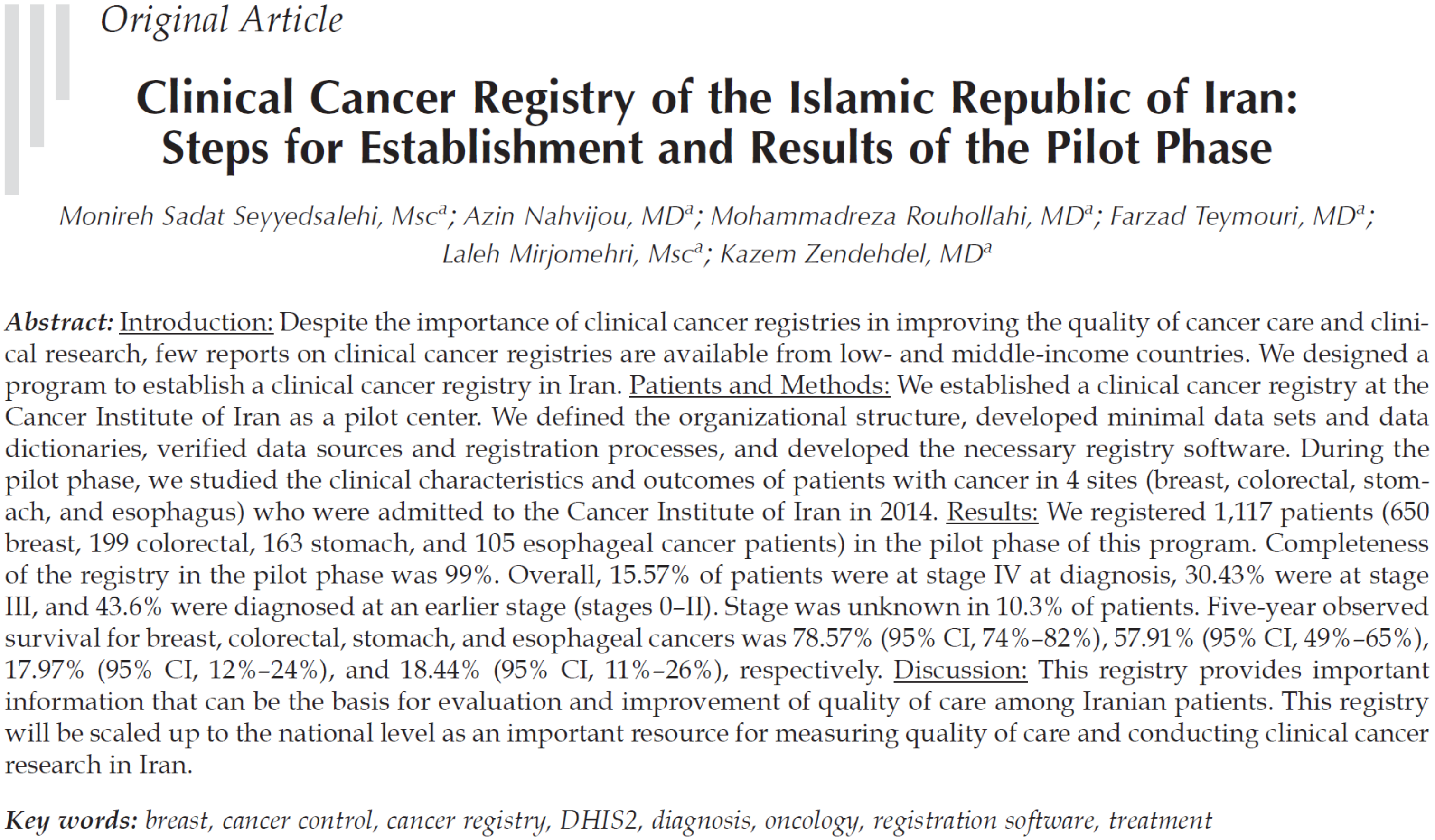


Figure2: Venn diagram, presenting number of cancer death observed in the three data sources independently and in common with the other in Fars Province in the southern Iran in 2004-2006.

کم شماری موارد مرگ ناشی از سرطان در ثبت مرگ استان فارس
در سالهای ۱۳۸۴ الی ۱۳۸۶ (مطالعه صید باز صید)

Cancer Type	**Underestimation rate (%)**
All Cancer	**42**
Bladder Cancer	**60**
Colon Cancer	**35**
Esophageal Cancer	**44**
Lung Cancer	**48**
Stomach Cancer	**30**
Ovarian Cancer**	**42**
Breast Cancer**	**27**
Endometrial Cancer**	**50**
Prostate Cancer**	**32**



Original Article

Clinical Cancer Registry of the Islamic Republic of Iran: Steps for Establishment and Results of the Pilot Phase

Monireh Sadat Seyyedsalehi, Msc[a]; Azin Nahvijou, MD[a]; Mohammadreza Rouhollahi, MD[a]; Farzad Teymouri, MD[a]; Laleh Mirjomehri, Msc[a]; Kazem Zendehdel, MD[a]

Abstract: Introduction: Despite the importance of clinical cancer registries in improving the quality of cancer care and clinical research, few reports on clinical cancer registries are available from low- and middle-income countries. We designed a program to establish a clinical cancer registry in Iran. Patients and Methods: We established a clinical cancer registry at the Cancer Institute of Iran as a pilot center. We defined the organizational structure, developed minimal data sets and data dictionaries, verified data sources and registration processes, and developed the necessary registry software. During the pilot phase, we studied the clinical characteristics and outcomes of patients with cancer in 4 sites (breast, colorectal, stomach, and esophagus) who were admitted to the Cancer Institute of Iran in 2014. Results: We registered 1,117 patients (650 breast, 199 colorectal, 163 stomach, and 105 esophageal cancer patients) in the pilot phase of this program. Completeness of the registry in the pilot phase was 99%. Overall, 15.57% of patients were at stage IV at diagnosis, 30.43% were at stage III, and 43.6% were diagnosed at an earlier stage (stages 0–II). Stage was unknown in 10.3% of patients. Five-year observed survival for breast, colorectal, stomach, and esophageal cancers was 78.57% (95% CI, 74%–82%), 57.91% (95% CI, 49%–65%), 17.97% (95% CI, 12%–24%), and 18.44% (95% CI, 11%–26%), respectively. Discussion: This registry provides important information that can be the basis for evaluation and improvement of quality of care among Iranian patients. This registry will be scaled up to the national level as an important resource for measuring quality of care and conducting clinical cancer research in Iran.

Key words: *breast, cancer control, cancer registry, DHIS2, diagnosis, oncology, registration software, treatment*

Journal of Registry Management 2020 Volume 47 Number 4

Table 2. Completeness of Treatment Information of 4 Cancers (1,117 Cases) in the Clinical Cancer Registry (2014) by Active Data Collection

Treatments	*Hospital records*	*After active data collection*
Target therapy*		
Yes	122 (14.36%)	126 (14.84%)
No		528 (62.19%)
Unknown/nonresponse	727 (85.63%)	195 (22.96%)
Hormonotherapy**		
Yes	74 (11.38%)	245 (37.67%)
No		225 (34.61%)
Unknown/nonresponse	576 (88.61%)	180 (27.69%)
Surgery		
Yes	729 (65.26%)	838 (75.02%)
No		193 (17.27%)
Unknown/nonresponse	388 (34.73%)	86 (7.69%)
Chemotherapy		
Yes	470 (42.07%)	742 (66.42%)
No		214 (19.15%)
Unknown/nonresponse	647 (57.92%)	161 (14.41%)
Radiotherapy		
Yes	536 (47.98%)	701 (62.75%)
No		302 (27.03%)
Unknown/nonresponse	581 (52.01%)	114 (10.20%)
Total (yes/no)	1,931 (39.81%)	4,114 (84.82%)
Total (unknown/ nonresponse)	2,919 (60.19%)	736 (15.18%)
Total treatments	4,850	4,850

*Target therapy for 849 colorectal and breast cancer cases.

**Hormonotherapy for 650 breast cancer cases.

Table 3. Completeness of Immunochemistry Receptor Status of Breast Cancer (650 Cases) in the Clinical Cancer Registry (2014) by Data Linkage

Immunochemistry receptors	*Hospital records*	*After data linkage*
Human epidermal growth factor receptor (HER2)		
Positive	108 (16.61%)	157 (24.15%)
Negative	224 (34.46%)	333 (51.23%)
Borderline	28 (4.3%)	32 (4.92%)
Unknown	290 (44.61%)	128 (19.69%)
Total	650	650
Progesterone receptor (PR)		
Positive	266 (40.92%)	365 (56.15%)
Negative	107 (16.46%)	158 (24.30%)
Unknown	277 (42.61%)	127 (19.53%)
Total	650	650
Estrogen receptor (ER)		
Positive	276 (42.46%)	387 (59.53%)
Negative	96 (14.76 %)	138 (21.23%)
Unknown	278 (42.76%)	125 (19.23%)
Total	650	650

colorectal, esophageal, and stomach cancers was 78.57%, 57.91%, 18.44%, and 17.97%, respectively (Table 1).

TNM staging of cancer is crucial for estimating prognosis, guiding the selection of primary or adjuvant treatment and evaluating treatment results. The fact that a high proportion of patients were diagnosed in the advanced stages reflects lack of awareness and delay in diagnosis.[23-25] We used available data in patient documents to abstract stage information and managed to stage more than 89.7% of cases. However, we were unable to find information on disease stage in 10.3% of the patients. According to the previous study, age, comorbidities, resistance of patients

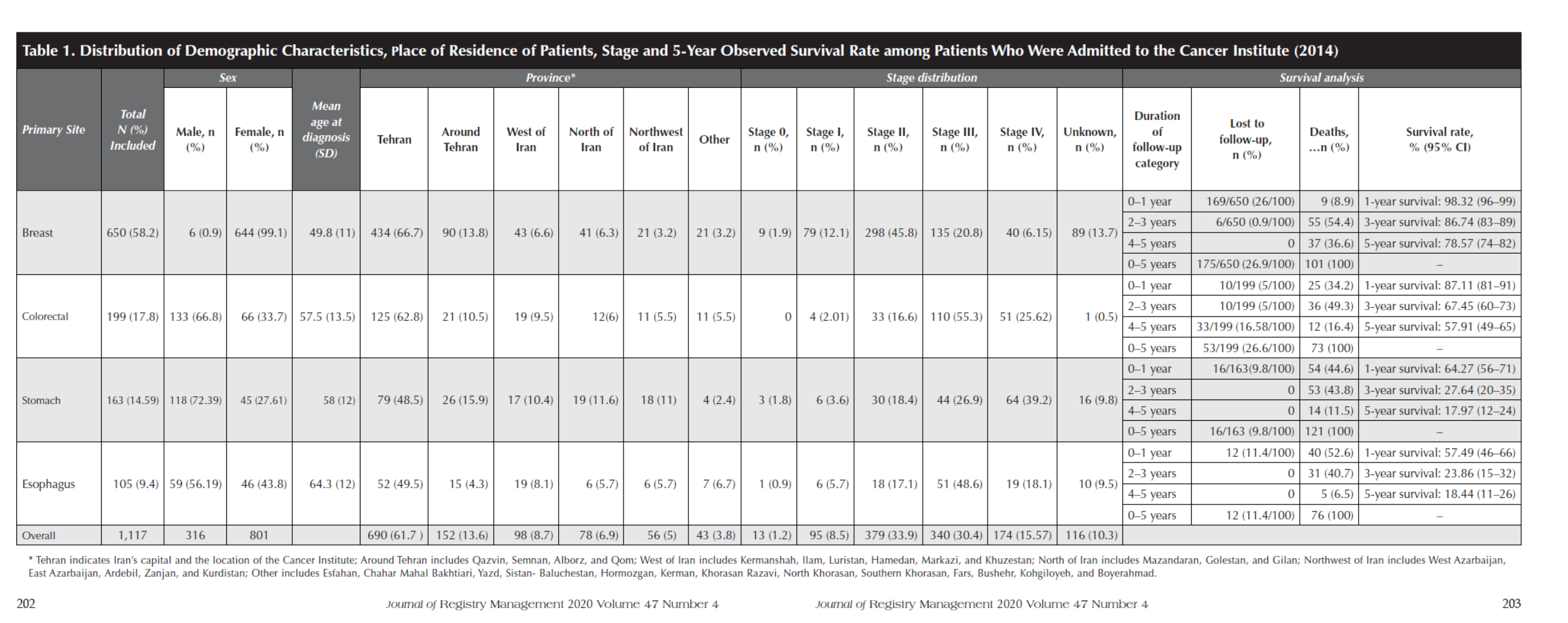


Table 1. Distribution of Demographic Characteristics, Place of Residence of Patients, Stage and 5-Year Observed Survival Rate among Patients Who Were Admitted to the Cancer Institute (2014)

Primary Site	*Total N (%) Included*	*Sex*		*Mean age at diagnosis (SD)*	*Province**						*Stage distribution*						*Survival analysis*			
		Male, n (%)	Female, n (%)		Tehran	Around Tehran	West of Iran	North of Iran	Northwest of Iran	Other	Stage 0, n (%)	Stage I, n (%)	Stage II, n (%)	Stage III, n (%)	Stage IV, n (%)	Unknown, n (%)	Duration of follow-up category	Lost to follow-up, n (%)	Deaths, …n (%)	Survival rate, % (95% CI)
Breast	650 (58.2)	6 (0.9)	644 (99.1)	49.8 (11)	434 (66.7)	90 (13.8)	43 (6.6)	41 (6.3)	21 (3.2)	21 (3.2)	9 (1.9)	79 (12.1)	298 (45.8)	135 (20.8)	40 (6.15)	89 (13.7)	0–1 year	169/650 (26/100)	9 (8.9)	1-year survival: 98.32 (96–99)
																	2–3 years	6/650 (0.9/100)	55 (54.4)	3-year survival: 86.74 (83–89)
																	4–5 years	0	37 (36.6)	5-year survival: 78.57 (74–82)
																	0–5 years	175/650 (26.9/100)	101 (100)	–
Colorectal	199 (17.8)	133 (66.8)	66 (33.7)	57.5 (13.5)	125 (62.8)	21 (10.5)	19 (9.5)	12(6)	11 (5.5)	11 (5.5)	0	4 (2.01)	33 (16.6)	110 (55.3)	51 (25.62)	1 (0.5)	0–1 year	10/199 (5/100)	25 (34.2)	1-year survival: 87.11 (81–91)
																	2–3 years	10/199 (5/100)	36 (49.3)	3-year survival: 67.45 (60–73)
																	4–5 years	33/199 (16.58/100)	12 (16.4)	5-year survival: 57.91 (49–65)
																	0–5 years	53/199 (26.6/100)	73 (100)	–
Stomach	163 (14.59)	118 (72.39)	45 (27.61)	58 (12)	79 (48.5)	26 (15.9)	17 (10.4)	19 (11.6)	18 (11)	4 (2.4)	3 (1.8)	6 (3.6)	30 (18.4)	44 (26.9)	64 (39.2)	16 (9.8)	0–1 year	16/163(9.8/100)	54 (44.6)	1-year survival: 64.27 (56–71)
																	2–3 years	0	53 (43.8)	3-year survival: 27.64 (20–35)
																	4–5 years	0	14 (11.5)	5-year survival: 17.97 (12–24)
																	0–5 years	16/163 (9.8/100)	121 (100)	–
Esophagus	105 (9.4)	59 (56.19)	46 (43.8)	64.3 (12)	52 (49.5)	15 (4.3)	19 (8.1)	6 (5.7)	6 (5.7)	7 (6.7)	1 (0.9)	6 (5.7)	18 (17.1)	51 (48.6)	19 (18.1)	10 (9.5)	0–1 year	12 (11.4/100)	40 (52.6)	1-year survival: 57.49 (46–66)
																	2–3 years	0	31 (40.7)	3-year survival: 23.86 (15–32)
																	4–5 years	0	5 (6.5)	5-year survival: 18.44 (11–26)
																	0–5 years	12 (11.4/100)	76 (100)	–
Overall	1,117	316	801		690 (61.7)	152 (13.6)	98 (8.7)	78 (6.9)	56 (5)	43 (3.8)	13 (1.2)	95 (8.5)	379 (33.9)	340 (30.4)	174 (15.57)	116 (10.3)				

* Tehran indicates Iran's capital and the location of the Cancer Institute; Around Tehran includes Qazvin, Semnan, Alborz, and Qom; West of Iran includes Kermanshah, Ilam, Luristan, Hamedan, Markazi, and Khuzestan; North of Iran includes Mazandaran, Golestan, and Gilan; Northwest of Iran includes West Azarbaijan, East Azarbaijan, Ardebil, Zanjan, and Kurdistan; Other includes Esfahan, Chahar Mahal Bakhtiari, Yazd, Sistan- Baluchestan, Hormozgan, Kerman, Khorasan Razavi, North Khorasan, Southern Khorasan, Fars, Bushehr, Kohgiloyeh, and Boyerahmad.

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