

**PART FOUR:
QUALITY CONTROL**

QUALITY CONTROL

The purpose of cancer data collection varies with the type and goals of the registry. The primary goal of hospital-based cancer registries is the improvement of patient care, and the primary goal of non-registry hospitals is to provide data to the central cancer registry. The primary objective of the central or population-based incidence registries is the determination of cancer rates and trends in the population. Whether data are reported to the Virginia Cancer Registry (VCR) or reported by the VCR, there is a universal need for the data collected in any type of registry to be of the highest quality.

Quality can be defined as fitness for use. To assure data are of sufficient quality for use in meeting registry goals, quality control must be an integral component of the data collection system. Quality control involves the systematic execution of a carefully planned set of activities to monitor data quality and take appropriate action to positively affect future quality.

Activities and procedures to assure data quality should focus on three areas: completeness, accuracy and timeliness. Completeness refers to both case ascertainment and data collection; completeness is achieved when all cases are found and all the necessary data are collected for each case. Accuracy refers to how well the abstracted data reflect the patient's diagnosis and treatment. Timeliness measures how the abstracting and reporting process are accomplished according to an expected schedule.

Evaluation of completeness, accuracy, and timeliness is the first step in quality control. To be effective, the registry's quality control plan must also involve a continuous loop of monitoring, communication, and feedback.

The following two sections describe various strategies used by reporting facilities and the VCR to assure data are as complete, accurate and timely as possible. The activities described for reporting facilities will enhance compliance with VCR reporting standards. Since communication and feedback are essential to the success of any quality control program, the major quality control procedures used by the VCR are described in order for hospital contacts to more fully understand the rationale for VCR requirements as well as verbal and written requests and questions made by the VCR.

QUALITY CONTROL: REPORTING FACILITIES

Reporting facilities must insure cancer data collected and submitted to the VCR are complete, accurate, and timely. Although some facilities may incorporate additional activities to assure quality, at a minimum, all facilities must include the following procedures to meet VCR reporting requirements and standards.

Completeness

1. Casefinding Sources - All areas where cancer patients are diagnosed or treated must be included in the casefinding system. This includes outpatient treatment areas, e.g., Radiation Therapy, Chemotherapy, Same Day Surgery Units, and the Emergency Room. Review of pathology reports, including private outpatient specimens and autopsy reports, must be included in casefinding.
2. Disease Index - Review of a Disease Index should be performed to verify all reportable cases are submitted to the VCR. If performed monthly, this review will simplify the annual reconciliation procedure (See *VCR Manual Part Four, Quality Control: VCR*) and aid in timeliness of reporting.
3. Transmission Verification - Facilities should check completeness of transmissions as follows:
 - a. Check Totals: Verify the number of cases transmitted equals the number received by the VCR as indicated on the report entitled, *Confirmation of Records Received by the Virginia Cancer Registry*, which is the report facilities receive back after the VCR has processed a shipment. Resolve the discrepancies or contact your VCR Field Representative.
 - b. Maintain Listings: : Keep in the facility's Policy and Procedure manual a copy of all *Confirmation of Records Received by the Virginia Cancer Registry* reports, as verification of records received by the VCR. Retention for at least five years is strongly recommended; however, if space is limited, maintaining copies until your facility has had a VCR Quality Assessment Review for that specific year would be an acceptable alternative.
 - c. Compare Listings: Compare the names on the *Accession List* report, a report periodically provided by the VCR in order to reconcile the accession year, against your transmitted list, generated based upon the same criterion. If there are differences in the lists, resolve the discrepancies or contact your VCR Field Representative. Submit any missed cases identified by this process.
4. Required Fields - All data items required by the VCR must be submitted for each record. For a listing of these items, refer to *VCR Manual Appendix K, Required Data Set for Reporting Facilities*. Entries for each required data item must include specific demographic, diagnostic and treatment information that accurately reflects what is documented in the health record.

QUALITY CONTROL: REPORTING FACILITIES, continued**Accuracy**

1. **Text Fields** - The *Required Data Set for Reporting Facilities* includes text fields (See *VCR Manual Appendix K, Required Data Set for Reporting Facilities*). The reason for requiring text is to enhance data accuracy. These fields give hospitals the ability to convey information to validate data items, document clarifications, reconcile data item discrepancies, support unusual site/histology combinations, provide history of previous cancers/reportable tumors, and explain any unusual or potentially questionable entry on the abstract. Required text information must be recorded in the designated text fields. (See also *VCR Manual Part Three, Data Item Instructions, Guidelines for Reporting Text*).
2. **Computer Edits** - Computer edits should be an integral component of any electronic abstracting system. These edits should check for completion of all required fields, allowable values and ranges, and interfield consistency. Edit checks should be performed on each completed abstract. Abstracts should be re-edited if any changes are made.
3. **Visual Editing** - The completed abstract should be visually reviewed to identify errors not detectable by the computer. Inconsistencies among data items could be identified when comparing text to coded items, e.g., stage coded to local with text indicating lymph node involvement.
4. **Physician Input** - Physicians should serve as resources to the abstractor. They should be consulted when questions arise during abstracting. Physician input may assist in identifying a primary site or provide clarification of conflicting statements or reports in the health record. Documentation of the physician input should be included in the text to support abstracted data.

QUALITY CONTROL: REPORTING FACILITIES, continued

Timeliness

1. 180 Days - 90% of the records must be received by the VCR within 180 days from *Date of Inpatient Disch* if an inpatient or *Date of 1st Contact* if an outpatient.
2. VCR Deadline - The first working day in July is the deadline for submitting all reportable cases seen at the reporting facility during the previous year.
3. VCR Reporting Schedule - This schedule should be followed to assure abstracts are received by the VCR within the required 180 days.

Cases with a Date of Inpatient Disch/Date of 1st Contact in:	Mail on or before the 5th of:
January	June of same year
February	July of same year
March	August of same year
April	September of same year
May	October of same year
June	November of same year
July	December of same year
August	January of following year
September	February of following year
October	March of following year
November	April of following year
December	May** of following year

Example 1: All cases with a Date of Inpatient Disch/Date of 1st Contact on or between January 1 and January 31, 2007 must be received on or before June 5, 2007.

Example 2: All cases with a Date of Inpatient Disch/Date of 1st Contact on or between December 1 and December 31, 2007 should be received on or before May 5, 2008

** The VCR deadline has not changed. The weeks between May 5th and July 5th should be used to perform Quality Assurance procedures to ensure all cases for the year have been identified and reported. These cases may fall into the 10% over 180 days. This is expected and acceptable.

Note: This schedule should be used by reporting facilities as a guideline to assess timeliness of reporting but will not be used by the VCR to determine exact timeliness rates for reporting facilities. Reports provided by the VCR will show specific timeliness rates based on the number of days from *Date of Inpatient Disch* or *Date of 1st Contact* and the date the abstract was received by the VCR.

QUALITY CONTROL: REPORTING FACILITIES, continued

4. Incomplete and Suspense Cases - At a registry hospital, after identifying a potential case for the registry from a casefinding source, cases unable to be completely abstracted may be placed in an electronic suspense file. A system should be in place to monitor these cases so they are completed and reported to the VCR in a timely manner. A case will not export out of AbstractPlus if it is incomplete.
5. Method to Assure Timeliness - Review the Disease Index monthly using the reporting schedule as a guide to verify all reportable cases have been submitted within the 180-day timeframe.

QUALITY CONTROL: VCR

Quality control activities are conducted by the VCR to assure data in the central registry are complete, accurate, and timely. These activities fall into three categories: 1) internal procedures as data are processed, 2) on-site quality assessment reviews, and 3) trainings conducted by VCR staff or in conjunction with other organizations. These three major aspects of the VCR quality control program are described below.

Internal Quality Control Procedures

The quality control procedures described below are performed by the VCR routinely to enhance the quality of cancer data in the central cancer registry.

1. Completeness
 - a. VCR Reporting Sources - The VCR establishes reporting from sources required to report and reporting through state data exchange agreements to assure all reportable cases are received. The VCR reporting sources (See *VCR Manual Part One, Reporting Requirements, VCR Reporting Sources*) include the following:
 - Acute Care Hospitals
 - Laboratories
 - Non Hospital Sources
 - States with Data Exchange Agreements
 - b. Non-Reporting - All hospitals are required to submit on or before the 5th of every month or the last working day before the 5th if the 5th falls on a weekend or holiday. A listing of hospitals that have not submitted for two consecutive months is generated monthly at the VCR. A VCR Cancer Surveillance Specialist contacts hospitals appearing on this list and appropriate action is taken.

QUALITY CONTROL: VCR continued

- c. Reconciliation - An annual comparison is made of each hospital's Disease Index with the VCR database to assure all cases have been reported. Each hospital receives a listing of cases identified as not being reported to the VCR with instructions to review each record to determine if the case is reportable. Cases missed, but now identified, must be reported. Cases that are not reportable must have justification documented on the listing explaining why the case is not reportable. Missed cases and listings must be returned to the VCR by the specified deadline.
- d. Death Clearance - The VCR conducts a Death Clearance procedure annually. This process involves identifying Virginia Death Certificates with a reportable cause of death and matching them to the VCR files. Non-matched death certificates are potentially missed cases. Hospital contacts receive a listing of non-matched patients who expired at their hospital to determine if they were reportable. Missed cases must be reported. Cases that were not reportable must have justification documented on the listing. Missed cases and listings must be returned to the VCR by a specified deadline. At the conclusion of this process, the remaining non-matched cases are reviewed and may be abstracted at the VCR from the death certificates and defined as Death Certificate Only (DCO) cases. A DCO percentage (the number of DCO cases divided by the total number of incidence cases for that year) is computed. The VCR DCO percentage is measured against the North American Association of Central Cancer Registries (NAACCR) DCO standard, which states a registry should have fewer than 5% DCO's in a given year of incidence cases.

2. Accuracy

- a. Computer Edits - Computer edits are performed on 100% of abstracts and consolidated records. The VCR utilizes a combination of North American Association of Central Cancer Registries (NAACCR), Surveillance, Epidemiology and End Results Reporting Program (SEER), National Program of Cancer Registries (NPCR), and Commission on Cancer (COC) edits from the NAACCR metafile with VCR-developed edits added. These edits check for completion of all required fields, allowable ranges, allowable values, and interfield consistency. They check for invalid entries such as impossible site/histology combinations or flag unusual entries for review. VCR Cancer Surveillance Specialists follow-up with hospital contacts and provide feedback on errors found.
- b. Visual Editing - Records are reviewed for consistency between coded data items and text documentation. This type of review is performed to detect discrepancies not detectable by the computer. VCR Cancer Surveillance Specialists provide hospital contacts with feedback on these reviews.
- c. Electronic Reporting Approvals - An approval process is required for facilities newly reporting electronically, new contacts, hospital software changes, and updated North American Association of Central Cancer Registries (NAACCR) formats. (See *VCR Manual Appendix C, Electronic Reporting* for detailed instructions.) Hospital shipments are monitored and VCR Cancer Surveillance Specialists provide feedback to hospital contacts until acceptable accuracy is achieved.
- d. Unknown Values - The frequency of "unknown" or code for unknown in data items, such as age at diagnosis, sex, race, state, and county is monitored and follow-up is performed to eliminate as many unknowns as possible. Virginia cancer reporting regulations that the Virginia Board of Health establishes requires personally identifying information.

QUALITY CONTROL: VCR, continued

- e. Resolution of Duplicates - To assure accuracy of incidence statistics, an incidence file containing all cases for a specified time period is created and a report is generated listing all cases alphabetically by last name. Cases with the same name are identified. Those determined to be the same person are then reviewed manually to determine whether they represent multiple primaries or duplications. While cases determined to be duplicates are deleted from the file, source records are retained and attached to the appropriate tumor in the VCR database.
3. Timeliness
 - a. VCR Timeliness Standard - At least 90% of the records must be received by the VCR within 180 days from *Date of Inpatient Disch* if an inpatient or *Date of 1st Contact* if an outpatient.
 - b. Closeout Deadline -The first working day closest to July 5th is the deadline for submitting all reportable cases diagnosed/treated in the prior year.
 - c. Closeout Notification - Hospitals are notified annually of the closeout deadline and requested to notify the VCR when they anticipate closing out. Failure to meet the July deadline results in referral of the hospital to the Department of Health, Bureau of Facility Licensure and Certification.

On-Site Quality Assessment Review

Quality Assessment Reviews are routinely conducted at hospitals. Hospitals are scheduled for a review when certain criteria are met, such as unsatisfactory results from previous review, inability to perform annual reconciliation, reporting problems, and time lapse since last review. The reviews are designed to determine the quality of reporting to the VCR. During the review, casefinding completeness, data quality and timeliness of reporting are evaluated by VCR Cancer Surveillance Specialists.

1. Notification of Quality Assessment Review- Hospitals receive a scheduling letter one month prior to the date of review. The scheduling letter includes:
 - a. Date and time of the review
 - b. *Hospital Index Verification* list of patients included on the hospital's Disease Index not reported to the VCR (Index from previous year's reconciliation is used)
 - c. Request to have autopsy reports from the year being reviewed available the day of the review
 - d. *Data Quality Evaluation* list of randomly selected cases reported to the VCR within the last twelve months that will be reabstracted by a VCR Cancer Surveillance Specialist
 - e. Request for private area with adequate work space for the VCR Cancer Surveillance Specialist

Note: If a hospital did not submit a Disease Index during the reconciliation procedure, it will receive the scheduling letter two months prior to the review. The hospital has three weeks from the date of the letter to submit a Disease Index to the VCR.

QUALITY CONTROL: VCR, continued

2. Hospital Preparation for a Quality Assessment Review- Hospitals must have the following available the day of the review:
 - a. Health records for the patients on the *Hospital Index Verification* list. The patient's complete health record must be pulled including all inpatient and outpatient records.
 - b. Autopsy reports for the year being reviewed.
 - c. Health records and copies of corresponding abstracts for all the cases on the *Data Quality Evaluation* list. All admissions used to abstract the case must be pulled. *Note:* Additional health records may be requested on the day of review.

3. On Site Review Process- The VCR Cancer Surveillance Specialists will evaluate the following during their visit:

- a. Casefinding Completeness- The first component of the quality assessment review is the casefinding audit. The audit is a review and evaluation of the effectiveness of a facility's casefinding mechanisms used in submitting reportable cases to the VCR. The objective of the audit is to determine whether all reportable records are being identified and submitted to the VCR to insure VCR data accurately reflect cancer incidence in Virginia.

The VCR Cancer Surveillance Specialist reviews the health records (and/or cancer registry files, if applicable) from the *Hospital Index Verification* list to determine if these records are reportable and to identify any weaknesses or trends in a hospital's casefinding procedures. The autopsy reports are reviewed to insure all autopsy reports with a reportable condition have been reported to the VCR, including incidental findings.

If not included in the Disease Index, pathology, cytology, autopsy, chemotherapy, radiation therapy, and other outpatient clinic information and related health records are reviewed to insure the reporting of eligible records from these sources.

The results of the casefinding audit are defined in terms of a completeness rate. The completeness rate indicates the percentage of reportable records submitted by the hospital to the VCR. The VCR acceptable completeness rate is 97 to 100%.

- b. Data Quality- The second component of the quality assessment review is a reabstracting study to evaluate data quality. Reabstracting compares the information in the health record to the previously abstracted data to determine the accuracy and completeness of the data. The VCR Cancer Surveillance Specialist reabstracts the cases on the *Data Quality Evaluation* list to identify any inaccurate information or misunderstandings of reporting guidelines.

The results of the reabstracting study are defined in terms of an accuracy rate. The accuracy rate indicates the percentage of data items reported correctly. The VCR standard for data quality is an accuracy rate of 97 to 100%.

QUALITY CONTROL: VCR, continued

- c. Timeliness- The third component of the quality assessment review is timeliness of reporting. For the VCR to provide timely statistics and reports, facilities must submit data in a timely manner.

The timeliness standard established by the VCR to monitor hospital reporting requires at least 90% of the hospital's records be received by the VCR within 180 days from *Date of Inpatient Disch* if an inpatient or *Date of 1st Contact* if an outpatient. To evaluate timeliness, the VCR Cancer Surveillance Specialist uses reports generated by the VCR and assessment of cases currently being abstracted based on the reporting schedule (See *VCR Manual, Quality Control, VCR Reporting Schedule*).

- d. Summation- At the conclusion of the review, the VCR Cancer Surveillance Specialist discusses findings and recommendations with appropriate hospital personnel during a summation conference. This provides the VCR Cancer Surveillance Specialist the opportunity to provide feedback relative to areas of compliance and concern. It also enables hospital personnel to be aware of the results of the review and ask questions regarding the findings and recommendations.
- e. Quality Assessment Review Report-The VCR sends a written report documenting findings, problems, recommendations, and rates to the hospital. A listing of missed records identified as reportable to the VCR and a listing of data items requiring correction are included in the report.
- f. Reporting Review Deficiencies- Hospital staff must submit the missed records and corrections to the VCR within 30 days of when they receive the report.
- g. Tracking Results- Upon completion of the Quality Assessment Review Report, completeness and accuracy rates by year review performed are entered into a tracking system at the VCR. This information provides a concise summary of review results for use in determining a hospital's performance over time and in identifying hospitals requiring more intense follow up.

Trainings

Education is an important part of quality control. In addition to providing feedback to contacts regarding quality assessment reviews, visual reviews and edit checks, the VCR offers trainings throughout the year. These trainings provide specific information on state reporting requirements and cancer data collection. For more information about training opportunities currently being offered, contact your VCR Cancer Surveillance Specialist.

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