APPENDIX A
Definitions and Formulae

Average Length of Stay (ALOS): The arithmetic mean days of stay in hospital for the selected group of discharges:

$$\text{Avg. Length of Stay} = \frac{\text{Total Number of Patient Days in the Selected Group}}{\text{Total Number of Discharges in the Selected Group}}$$

Charges: Charges in this report are defined as hospital "facility" charges that are calculated by subtracting professional fees and patient convenience items charges from the total charge. However, facility charge data are not always reported according to the strict definition and some hospitals may have included salaried and contracted physician fees in their facility charges.

Clinical Classifications Software (CCS) Grouper: CCS was developed at the Agency for Healthcare Research and Quality (AHRQ) and is available at the website: http://www.ahrq.gov/data/hcup/ccs.htm . CCS collapses principal diagnosis and procedure codes into meaningful categories. The single-level diagnosis CCS aggregates illnesses and conditions into more than 260 categories. Similarly, the single-level procedure CCS aggregates procedures into 231 categories, most representing single types of procedures. High level CCS groups further collapse single-level CCS into broad groups based on body systems or condition categories. See Appendices D, E, and F for lists of high-level and single-level diagnosis and procedure groups.

Diagnosis: The condition, determined after study, which occasioned the patient's admission to the hospital. The accuracy or reliability of the diagnosis depends on several factors including the physician's understanding of the problem and the recorder's ability to fit this to established coding conventions. For those cases with multiple problems, the primary diagnosis may not be the reason for surgery or cause of death.

Diagnosis Related Group (DRG): A classification system that groups patient discharges into more than 500 categories according to diagnosis, type of treatment, age, and other relevant criteria. Under the prospective payment system, hospitals are paid a set fee for treating Medicare beneficiaries in a single DRG category, regardless of the actual cost of care for the individual. See Appendix C for a complete listing of DRGs.

Discharge: The equivalent of a hospital admission, except that for a specified time period, only those cases discharged are counted. Note that discharges do not necessarily reflect disease incidence or prevalence, just the fact of utilization of the hospital resource. Maternal records are included, but newborn records are excluded from the inpatient dataset, to avoid duplicate counts. However, newborn records are retained in the Vermont Uniform Hospital Discharge Dataset.

Emergency Department (ED) Dataset: Consists of all records that had an associated revenue code beginning 45 (Emergency Room). For most analyses, these data include patients who were admitted to the hospital as well as those who were not admitted. Among those who were not admitted, some records may have been recoded as other outpatient types, such as observation bed, ambulatory surgery, or series patient. In the tables comparing data across hospital settings, only those who were not admitted as inpatients are included in the ED column. See the User's Guide to Emergency Department Tables for details on recent changes in the definition of ED visits.

Hospital Service Area (HSA): A group of Vermont ZipTowns (see definition of ZipTown below) based on each ZipTown's use of hospital resources. Starting with the 2002 Monograph, HSAs are based on inpatient discharges, where the diagnosis indicated the need for immediate care, for the years 1997-2001. In this fourth version of HSAs, ZipTowns were assigned to HSAs based on a plurality rule. Prior definitions of HSAs have been based on all inpatient stays (except for newborns) and have used a strict decision rule for inclusion of Zip

Towns in a hospital's service area. Use of a strict inclusion rule meant that there were always towns that were not assigned to any HSA and were labeled "contested." In this fourth version of HSAs, no towns are considered contested. See the Introduction for a map of HSAs and the User's Guide to Inpatient Monograph Tables for an in-depth discussion of ZipTowns and HSAs.

Two HSAs contain more than one hospital: White River Junction (Dartmouth Hitchcock Medical Center, Mt. Ascutney Hospital, and the Veterans Administration Hospital) and Brattleboro (Brattleboro Memorial Hospital and Grace Cottage Hospital).

Inpatient Dataset: Consists of discharge records that were billed as an inpatient stay. Maternal records are included, but newborns are excluded, to avoid duplicate counts. However, newborn records are retained in the Vermont Uniform Hospital Discharge Dataset.

Major Diagnostic Category (MDC): The aggregation of DRGs into 25 groups that define major body systems. See Appendices B and C for a list of MDCs and related DRGs.

Market Share: An individual hospital's share of the total hospital utilization of a given area, expressed as a percentage.

Outpatient Procedures Dataset: Consists of outpatient records with a procedure in the ICD-9-CM code range of 00.0-86.00 that were performed in an operating room, ambulatory surgery area, or other outpatient setting. For most analyses in this Monograph, records originating in the ED are excluded. See the User's Guide to Outpatient Procedure Tables for details on recent changes in the definition of outpatient procedures.

Patient Day: A stay in hospital for all or part of a day.

Population-based Rate: The rate of a population's use of hospital inpatient services. Rates in this Monograph represent hospital discharges or days per 1,000 population for the selected group.

The ***crude rate*** is calculated as follows:

$$\text{Crude Rate per 1,000 People} = \frac{\text{Number of Discharges or Patient Days For the Selected Group}}{\text{Total Population for the Selected Group}} \times 1{,}000$$

These rates depend upon the accuracy of both the numerator and the denominator population. Data on population-at-risk (the denominator in these rates) are based on estimates. Rates for small areas or for groups with small numerators should be used with caution.

Age adjusted rates are particularly important for comparisons across areas because service areas have different population age mixes and age is a strong factor influencing hospitalization patterns. The age-adjusted rate for a given hospital service area is calculated by multiplying the area's age specific rate for each age group by the state population in that age group, summing across age groups, and dividing the result by the total state population. This result is then multiplied by 1,000. The following age groups are used in this volume for the computation of age-adjusted rates: 0-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-69, 70-74, 75-79, and 80+. In other publications such as the Monograph Companion, different standards, such as the projected year 2000 U.S. population, are used for age adjusting and different age groupings may also be used in the age adjusting process.

Principal Payer: The anticipated principal source of payment of the patient's hospital bill recorded by the hospital on each discharge record.

ZipTown Grouping: The combination of towns into groups with compatible town and Zip code boundaries to reconcile discrepancies between mailing address and town of residence. Towns are also grouped to achieve a minimum population of 1000 persons in each Zip Town group. ZipTowns were updated in 1996, with minor adjustments in 2004. This volume reflects these changes.