smaller geographic areas to ascertain cause of death. Methods used include follow-up investigations of deaths using verbal autopsy to ask family members, health-care providers and community members to explain circumstances of death. These systems are called sample vital registration with verbal autopsy systems. A no-blame policy, in which the respondents are not held liable for answers to survey questions, is pivotal to enlisting and retaining community support for these endeavours.

A number of factors influence maternal and newborn health outcomes, including biological factors such as nutritional status; socioeconomic determinants such as income and education; health-seeking behaviours and healthy practices; barriers to accessing health services; and behavioural risk factors such as domestic violence and smoking. Household surveys and studies are the primary methods used to assess the frequency of these types of determinants, which can then be analyzed to better understand the population for which health programmes are intended.

Important periodic cross-sectional household surveys include the Demographic and Health Surveys (United States Agency for International Development), Multiple Indicator Cluster Surveys (UNICEF) and Reproductive Health Surveys (Centers for Disease Control). These international surveys provide comprehensive quantitative data on a wide range of health topics. Since 1995, nearly 200 MICS have been conducted in 100 countries.

Facility- and community-based data collection
Data derived from health facilities across the wide range of public and private health-care providers are also useful in assessing the state of maternal and newborn health. The number of deaths in facilities can be readily monitored and provide opportunities to learn about improvements needed to avert further deaths, particularly those in institutional settings, in a process known as ‘maternal death review or audit’. This type of data can also provide insights into the ‘near-misses’ – life-threatening complications that heightened the risk of mortality but which ultimately did not result in death – that are important for improving service quality.

Governments, research institutions and other agencies also conduct health surveillance, defined by the Centers for Disease Control as “the ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event that is for use in public health action to reduce morbidity and mortality and improve health.” This method of data gathering can be combined with others to assess the

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**Figure 4.2**

Distribution of key data sources used to derive the 2005 maternal mortality estimates

Total number of countries: 171

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