■ 職業別

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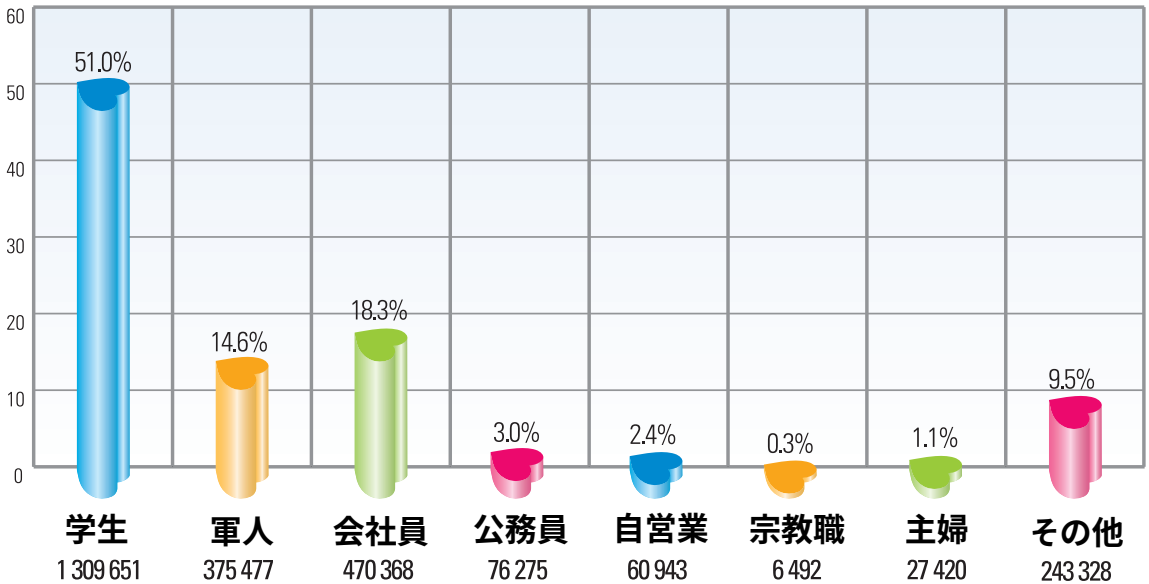

The aging population poses a global challenge for blood services

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BACKGROUND: The Finnish transfusion registry data suggest some alarming signals and future challenges that are likely to be faced by transfusion services as populations continue to age.

STUDY DESIGN AND METHODS: Computerized data collection was performed on all potentially transfused patients in Finland, thus covering ~70% of all blood usage. We simulated the red blood cell (RBC) usage according to the Finnish practice on different age groups but the population demographics from other countries.

RESULTS: The Finnish data demonstrate a marked increase in RBC consumption with increasing age among recipients, beginning at around 50 years of age. The 70- to 80-year-olds have an eightfold higher RBC consumption than 20- to 40-year-olds.

CONCLUSIONS: A large part of the variation in RBC use per capita can be explained by the age distribution of the different populations and not by the different national and regional treatment policies and protocols used. If current efforts are not enough to serve the changing population demographic and if increasing demands for blood products cannot be met, there is need to consider unprecedented measures such as reversing certain donor deferrals or even exporting blood from country to country.

Since 2002, the Finnish Red Cross Blood Service has had a permanent national database to study transfusion recipients and blood use in Finland. Analysis of this database and of the blood-dependency ratio (the number of donors vs. the number of transfusion recipients) suggests some alarming signals and future challenges that are likely to be faced by transfusion services all over the world as populations continue to age. It is apparent that judging the transfusion practices and success of blood conservation programs in different countries by simply calculating blood usage per capita may be an inadequate or even misleading practice when trying to plan for blood service requirements in aging populations.

MATERIALS AND METHODS

Data were collected from the Finnish Transfusion Registry ("Optimal Use of Blood"), which was established in 2002. Finnish Red Cross is the only blood supplier in Finland thus providing approximately 400,000 blood components annually to the Finnish hospitals. The data are collected on all potentially transfused patients using computer programs designed for data collection (VOK data extraction system, MediWare Corporation Oy, Helsinki, Finland; and Oulu data extraction system, Oulu, Finland). The validation of data has been described previously.[1] Currently 10 hospital districts provide data to the registry. Altogether these hospital districts transfuse approximately 63% to 70% of blood components produced in Finland. There are no general national transfusion guidelines in Finland. However, the international practice and guidelines are followed and usually implemented to local, hospital instructions. Also, benchmarking activities have been arranged for the participants of the optimal use of blood. The data collected constitute of all 1) patients for whom blood components were ordered (i.e., not necessarily transfused); 2) surgical patients (i.e., all patients visiting operating room; the Nomesco classification of surgical procedures [NCSP], 2003: Chapters A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, and Y, excluding small and diagnostic procedures in Sections T, U, X, and Z, which are usually used in combination with a code for the main procedure); and 3) patients with hospital visits with any malignant disorder, anemia of any cause, obstetric disorders, fetal or neonatal hemorrhagic and hematologic disorders, and burns and trauma (International Classification of Diseases [ICD-10], main diagnoses C81-C96, D45-D47, D50-D77, O00-O99·8, P50-P61, S00-S99·9, T00-T07, T20-T32, T79-T98, and Z99·9). Patient data are extracted from existing electronic medical registers and blood banking databases (Progesa, MAK-SYSTEM, Paris, France). Computer files provided information on hospital admissions, diagnoses, surgical

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