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# Expenditure on health research and development in Australia

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# Executive summary

This report uses data from the Australian Bureau of Statistics (ABS), the Department of Industry Science and Technology (DIST), and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to identify trends in expenditure on research and experimental development (R&D) concerned with health. In addition, it discusses the historical background to health R&D, different types of government interventions, existing agencies and programs, and the situation in other OECD countries.

R&D is 'creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this knowledge to devise new applications'. References to 'health R&D' in this report relate to the 'socioeconomic objective of health' as described by the Australian Standard Research Classification (ASRC) (Appendix 8). This socioeconomic objective is a narrow one which does not cover all health-related R&D activities. Some health-related R&D activities are classified under 'manufacturing' and 'advancement of knowledge', but these are not considered in this report except where the contrary is indicated.

It is estimated that \$484 million was spent on health R&D in 1990-91. This was 1.6% of total health expenditure. However, it is recognised that some readers will want data on all health-related R&D and not just R&D concerned with the socioeconomic objective of health. Consequently, a summary table has been produced which gives details of total R&D expenditure on health, human pharmaceuticals, medical instrumentation, and pure basic research in the medical and health sciences that has been classified under advancement of knowledge (Table 12). This table indicates that a total of \$639 million, or 2.1% of national health expenditure, was expended on health and health-related R&D in 1990-91.

The focus of this report is on health research expenditure over the period 1981-82 to 1990-91 by three of the four sectors of the economy: the general government sector, the higher education sector, and the private non-profit sector. The business enterprise (i.e., private for-profit) sector is covered in a more limited way because of a lack of data.

The key findings of this report are:

- Expenditure on health R&D activities undertaken by the non-business sectors has risen in recent years both as a proportion of total health expenditure and as a proportion of GDP. By 1990-91, expenditure on health R&D by these sectors accounted for 8.5% of total R&D expenditure, 1.4% of total health expenditure, and 0.1% of Gross Domestic Product (GDP).
- The number of person years devoted to health R&D in the non-business sectors rose 63.1% from 4,734 to 7,722 between 1981-82 and 1990-91. In each of these years, about 60% of person years were provided by researchers; about 30% by technicians; and about 10% by other supporting staff.
- Non-business sector health R&D expenditure per person rose in real terms from \$15.10 in 1981-82 to \$24.40 in 1990-91. In 1990-91, it ranged from \$81.50 in the ACT to \$10.93 in Tasmania.
- Basic research (including pure basic research and strategic basic research) remained the dominant type of activity, but accounted for a falling

proportion of total expenditure on health R&D. During the second half of the 1980s a rising proportion of total expenditure on health R&D by the non-business sectors was directed to applied research.

Of the \$432 million that was expended in 1990-91 on health R&D carried out by the non-business sectors:

- universities and colleges of advanced education were the source of funds for \$138 million (32.0%)\* ; the Commonwealth for \$130 million (30.1%); State governments for \$81 million (18.6%); and private non-profit organisations for \$61 million (14.2%);
- \$254 million (58.6%) was expended by universities and colleges of advanced education; \$98 million (22.8%) by State governments; \$55 million (12.8%) by private non-profit organisations; and \$25 million (5.8%) by the Commonwealth.

Between 1984-85 and 1990-91, the proportion of total expenditure on non-business health R&D funded by the Commonwealth decreased from 33.2% to 30.1%, while the proportion funded by State government agencies increased from 5.4% to 18.6%.

Tables 1 and 2 give summary data on total R&D and health R&D in Australia in 1990-91.

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\* The funds provided by universities and CAEs include general government funds, donations and earnings.