(The following text is the summary and background analysis of the plan for growth. The full version of the plan is available in Danish at www.evm.dk)

DENMARK AT WORK
PLAN FOR GROWTH IN HEALTH AND CARE SOLUTIONS

The Danish Government
June 2013

SUMMARY

The global market for health and care solutions is growing rapidly as a result of ageing populations, the rising number of people with chronic diseases, lifestyle diseases and the increasing expectations of citizens with regard to treatment and care. This upward trend will continue, driven to a significant extent by growth in the OECD countries, but also increasingly by developments in age and improvements in life expectancy and prosperity in the new growth economies in Asia and Latin America.

Denmark holds a strong position for exploiting this trend for the benefit of growth and job creation in coming years. In Denmark, health and care businesses account for 3.6 per cent of the value creation in the Danish economy and employ around 35,000 people full time, corresponding to 1.7 per cent of the total employment and accounting for an impressive 12 per cent of exports.

Especially within pharmaceuticals and medical equipment, Denmark has a business cluster with a strong international reputation that already contributes significantly to current domestic growth. In fact, the ten largest companies within pharmaceuticals and medical equipment account for 66 per cent of the jobs and 81 per cent of the growth in value within the health and care sector, and in 2011 pharmaceuticals and medical equipment accounted for 9.5 per cent of Danish commodity exports. The positive growth in pharmaceuticals and medical equipment is attributable to, among other things, a long tradition for strong public-private collaboration on research and education, good conditions for clinical research, a strong patent system and fast access to the market for new drugs.

However, Denmark's strong position within pharmaceuticals and medical equipment does not necessarily mean that growth in this business area will occur automatically in coming years. Many other countries are, like Denmark, also focusing on developing and manufacturing new health and care solutions to exploit the growth potential in the area. As a result, they invest sizeable amounts in R&D, innovation and education and generally work to create attractive conditions for manufacturing and R&D activities within the field. This is also the case in the new growth countries. The result is intensified competition to attract and retain investments within pharmaceuticals and medical equipment. This is why there continues to be a need to maintain and strengthen the conditions for growth in Denmark.

There are also other areas within the health and care sector where Denmark also has opportunities to create growth and jobs in other areas within the health and care sector. There is huge untapped business potential within assistive technology, service and operational solutions, consulting and health IT. However, far fewer businesses within these areas have successfully converted competencies developed in the Danish market into globally oriented growth companies. This is due to the fact that many tasks related to planning, supply and follow-up on social and health services are carried out in the public sector. Therefore, in order to fully exploit the growth potential of these business areas, companies need to have better opportunities for benefitting from the knowledge and competencies in the public sector in order to develop specific products and services that can be marketed internationally as well as for acting as service operators within more areas relating to, e.g., logistics, assistive technology solutions etc.

The Danish government wants to improve conditions for public-private collaboration on market development so that a wider range of Danish health and care solutions can be exported. The new growth markets, which are facing the task of building up and expanding their care systems in coming years, are showing particular interest in Danish care solutions.

With this plan for growth in health and care solutions the government thus seeks to create competitive conditions in areas where we have established positions of strength, including pharmaceuticals and medical equipment, so that businesses within these areas continue to have good opportunities to develop in Denmark. At the same time, the government wants to improve conditions for public-private collaboration and market development in the health and care sector, where we do not at the moment fully exploit our business potentials.

Good conditions for businesses in this area will also contribute to the development of the healthcare system and other areas in the health and care sector through new and improved treatments, care technology solutions and services that benefit the people of Denmark.

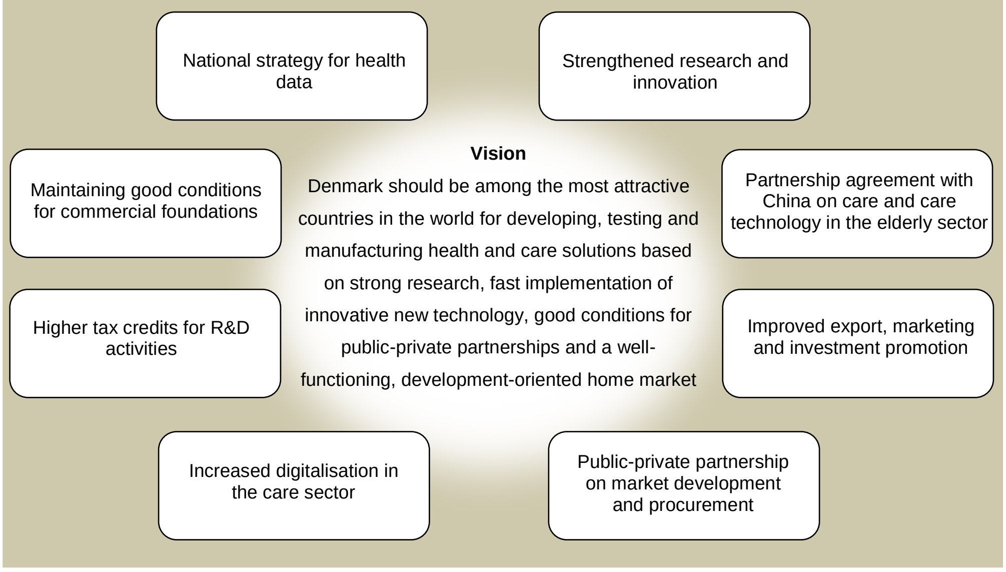
It is the government's vision that *Denmark should be among the most attractive countries in the world for developing, testing and manufacturing health and care solutions based on strong research, fast implementation of innovative new technology, good conditions for public-private collaboration and a well-functioning, development-oriented home market*.

Growth plan action areas:

- Better conditions for R&D
- Improved efforts vis-à-vis growth companies and the commercialisation of research
- A well-functioning and development-oriented domestic market
- Offensive exploitation of the international market potential

The government's growth plan for health and care solutions has been drawn up based on the recommendations of the growth team for health and care solutions and with contributions by a large number of stakeholders within the health and care sector, and should be viewed within the context of the government's health policy initiative.

Growth plan vision and selected initiatives:



Better conditions for R&D

It is crucial for competitiveness and growth of businesses that they have access to competent workers and new knowledge that can be converted into new solutions and products. This is especially true for businesses in the health and care sector.

In the international competition to attract and retain investments and develop partnerships with strong research environments, the conditions for clinical research also play a key role. The Danish health data represents a significant competitive parameter for attracting investments and for the quality of R&D and the documentation of new products.

Denmark has a strong tradition for research in the health sector and is known internationally for conducting top-class research at universities, at other research institutions and within the healthcare system. Health research is the single largest field of research in Denmark, and both public sector enterprises and private businesses invest significant amounts in R&D in the area. Major investments are also made in the education sector. More than 61,000 students were accepted to university programmes in 2012, corresponding to an increase in university intake of approx. 20,000 in just five years. During the same period, the number of students in health profession and health science study programmes increased steadily, and efforts have been made to increase PhD intake specifically. In order to continue to maintain and develop the strong foundation for R&D, it is necessary to prioritise health research and studies in the fields of health and care.

Collaboration between research environments, educational institutions and the business community also needs to be strengthened. Good conditions for public-private collaboration on research, innovation and education are vital for ensuring access to the right competencies and opportunities for regularly converting research into new solutions and products.

The growth plan addresses the following areas:

1. Strong health research and research in care technology
2. Improved conditions for public-private collaboration on clinical research
3. Strengthened Danish participation in European research and innovation collaboration
4. Strengthened collaboration on PhD programmes between universities and the private sector
5. National strategy for access to Danish health data and the establishment of one efficient access point for national health data
6. Social partnerships in the health and care sector

Improved efforts vis-à-vis growth companies and the commercialisation of research

In order for Denmark to retain and further develop its position of strength in the health and care sector, more successful new growth companies are needed. Entrepreneurs and new businesses create growth, innovation and jobs. At the same time, new specialised and research-based businesses play a vital role in the pipeline to the more established health and care sector, for instance in the form of promising research projects and technologies that can be purchased as sub-suppliers of know-how and services or as an "undergrowth" of talent from which the more established companies can recruit future workers.

New businesses in the health and care sector can develop as spin-offs from existing companies or via the commercialisation of public-sector research or other know-how and experience. However, only relatively few businesses in the health and care sector, regardless of how they started out, actually enter into a solid growth process.

Consequently there is a need to improve the conditions for starting up and establishing new growth companies in the health and care sector. This requires, among other things, better access to capital, good tax-incentive structures, focus at an early stage on commercialisation of research findings and, not least, access to the necessary competencies to develop the companies.

The growth plan addresses the following areas:

7. Tax credits for R&D activities
8. Maintaining good conditions for commercial foundations, including opportunities for tax-related succession
9. Fewer and stronger innovation environments and promotion of growth entrepreneurs within health and care technology
10. Strengthened regional collaboration on tech transfer units
11. Management-related focus on the commercialisation of research at hospitals and universities

A well-functioning and development-oriented domestic market

A well-functioning and development-oriented domestic market is crucial for the growth opportunities of health and care businesses.

In Denmark, the domestic market is characterised by the public sector providing a high share of the production of health and care services. The majority of the knowledge and competencies pertaining to health services, social services and elderly care planning, supply and follow-up are thus embedded in municipalities and regions. Therefore, in order to fully exploit the growth potential of these business areas, companies need to have better opportunities for benefitting from the knowledge and competencies in the public sector in order to develop specific products and services that can be marketed internationally as well as acting as service operators within more areas relating to, e.g., logistics, assistive technology solutions etc.

Private-sector businesses are often sub-suppliers of products to the public health and care sector, e.g. within pharmaceuticals, assistive technology, the transport of patients and IT. It is therefore vital that we include growth opportunities for these businesses in the prioritisation and development of the healthcare system and the rest of the health and care sector. This requires, among other things, good conditions for public-private collaboration on the development and testing of new products and solutions as well as innovative procurement, e.g. when building the planned new hospitals in Denmark. In this connection, both tender regulations and public-sector procurement habits are important framework conditions. New opportunities for businesses are also created by good conditions for the dissemination of digital solutions.

The growth plan addresses the following areas:

12. Simpler and more flexible tender legislation
13. Intelligent public demand
14. Public-private collaboration on market development
15. Generating greater value from development projects
16. Clear political targets, specific initiatives and strategic benchmarks in the forthcoming digital care strategy
17. Expansion of Denmark as a testing ground for telemedicine and mobile solutions
18. Promotion of the use of international standards
19. Increased focus on standardisation in the area of medical equipment and apparatus as well as health IT

Offensive exploitation of the international market potential

Global demand for health and care solutions is increasing rapidly. And we have excellent opportunities for converting this trend into growth and jobs in Denmark through increased exports and by attracting investments.

However, international competition in the health and care sector has become fiercer in recent years. Many countries are investing significantly in the development of health and care solutions with a view to cashing in on the significant and rapidly growing international market.

We therefore need to ensure good overall framework conditions that support companies' opportunities for exploiting the international market potential as well as underpinning Denmark as an attractive country for investments and the development and production of health and care solutions.

The government's "Growth Plan DK" takes a crucial step towards ensuring the competitiveness of Danish businesses through relaxation of specific taxes and duties as well as through initiatives aiming to improve opportunities for simply and quickly bringing foreign workers to Denmark.

In addition, we need to strengthen the trade policy framework conditions, improve conditions for attracting foreign companies and investments to Denmark and enter into collaborative agreements intended to help boost Denmark's competencies and business opportunities within the health and care sector.

The government will therefore improve marketing, export and investment promotion initiatives in the area. The initiatives within exports, investment promotion and marketing build on the significant amount of work that has already been done to increase opportunities for trade and exports as well as to attract investments, including in the health and care sector.

The growth plan addresses the following areas:

20. Prioritised and targeted export promotion initiatives
21. Better trade policy framework conditions
22. Making Denmark even more attractive for foreign investments
23. Marketing of Danish positions of strength
24. Collaboration with the Danish social housing organisation LB – "Danmarks Almene Boliger" on marketing social housing for the elderly
25. Denmark as an attractive country for education, research and work
26. Improved collaboration between Japan and Denmark on care and robotic technology
27. Partnership agreement with China on care and care technology in the elderly sector

POTENTIALS AND CHALLENGES TO GROWTH IN THE HEALTH AND CARE SECTOR

There are signs of significant growth potentials within the health and care sector over the next few years. These future growth opportunities should be viewed in the light of growing prosperity, demographic trends, increasing prevalence of lifestyle diseases and more patients with chronic diseases, the development of new technology and treatments etc.

Projections from the OECD suggest long-term global growth averaging 3 per cent a year, while the annual long-term growth in the OECD countries is expected to be around 2 per cent.[1] However, the growth potential within the health and care sector is likely to be higher than the global economic growth because demand for health services tends to increase faster than the gross domestic product (GDP).[2] Consequently, healthcare expenditure tends to make up a growing share of the GDP. There are several reasons for this. Consumer demand for health products and services increases in line with their disposable income. The growing global middle class thus has a significant influence on the health and care sector. Increased prosperity brings with it a higher prevalence of lifestyle diseases etc. Furthermore, higher prosperity contributes to the development of new treatments and technical breakthroughs within medical science. Demographic trends with a growing share of elderly in many countries also forecast an increasing global demand for health and care services. In many countries the prospect of rising healthcare costs will increase pressure on public coffers. This can heighten demand for more innovative solutions in the health and care sector, which can contribute to more efficient utilisation of public expenditure.

Future demand in the health and care sector is not expected to continue to be driven primarily by developments in the OECD countries, but to a greater extent also by age and prosperity trends in the new growth economies in Asia and Latin America.

Overall, Danish businesses within the health and care sector are well-geared for creating growth and increasing exports over the next few years. This is especially true for pharmaceuticals and medical equipment, where Danish companies already hold strong positions when it comes to productivity, market shares, R&D investments, patent quality etc. At the same time, companies in these areas are generally large enough to be able to handle the substantial complexity associated with global expansion in the form of different healthcare systems, payment mechanisms, documentation requirements in connection with market access etc. This applies to a lesser extent to companies within assistive technology, health IT and automation as well as service and operational solutions, where there are relatively few Danish companies which have successfully converted competencies developed in Denmark into global commercial success.

The health and care sector in Denmark

Looking back at the past twenty years, private-sector companies within the health and care sector have played an increasingly important role in the Danish economy. This is especially true for the pharmaceutical industry, which represents a growing share of both employment and value creation in Denmark.

The private health and care sector is dominated by the pharmaceutical industry; however, companies producing medical equipment and apparatus as well as assistive technology also make a significant contribution to value creation. Furthermore, there are a number of smaller companies within

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[1]OECD, “Looking to 2060: Long-term global growth prospects”, OECD Economic Policy Papers, No. 03, November 2012.
[2] OECD, “Health at a Glance”, 2011.

health IT and automation as well as service and operational solutions, cf. Box 1. In this way, the health and care sector covers manufacturing companies, including companies with R&D, as well as service businesses.

Box 1. The health and care sector

- *Pharmaceuticals*. Pharmaceutical and biotech products and technologies that help prevent, treat or relieve diseases. Including insulin, vaccines, antibiotics, antidepressants etc.
- *Medical equipment and apparatus*. Medical treatment techniques, equipment and apparatus that help prevent, diagnose, treat, monitor or relieve diseases. Includes insulin pens, catheters, ostomy bags, anaesthesia equipment, scanning apparatus etc.
- *Assistive technologies*. Products or services that help with care, rehabilitation or assist the motorically or sensorially impaired. Includes hearing aids, wheelchairs, hoisting and lifting systems for use in the elderly and care sector etc.
- *Health IT and automation*. Telecom, digitalisation and automation technology which is part of solutions within health and care provision. Includes IT systems for clinical and administrative support, such as electronic medical records, care records, telemedicine etc.
- *Service and operational solutions*. Processes and physical facilities that support access to health promotion and care, such as hospital admission, discharge and service provision. Includes health-oriented treatment centres, pre-hospital services, private hospitals etc.

According to a separate survey of health and care businesses conducted by the growth team for health and care solutions, around 800 private-sector businesses in the health and care sector supplied solutions for the promotion of health or care in 2012.[3] However, the sector is characterised by significant size differences, with many small and medium-sized enterprises and a few very large companies. This applies in particular to the pharmaceutical industry, where there are few, but large, companies. The ten largest companies within the health and care sector thus account for 66 per cent of the employment within the business area and 81 per cent of the value creation.

Health and care businesses account for 3.6 per cent of the value creation in the Danish economy and employ around 35,000 people full time, corresponding to 1.7 per cent of the total employment. The health and care sector is dominated by companies in the pharmaceutical industry, which employ approximately 21,000 people full time. Companies that produce medical equipment and apparatus and assistive technology are responsible for a fourth of the employment and value creation in the private health and care sector. In contrast, companies within health IT and private-sector service and operational solutions have significantly less influence on employment rates and the economy.

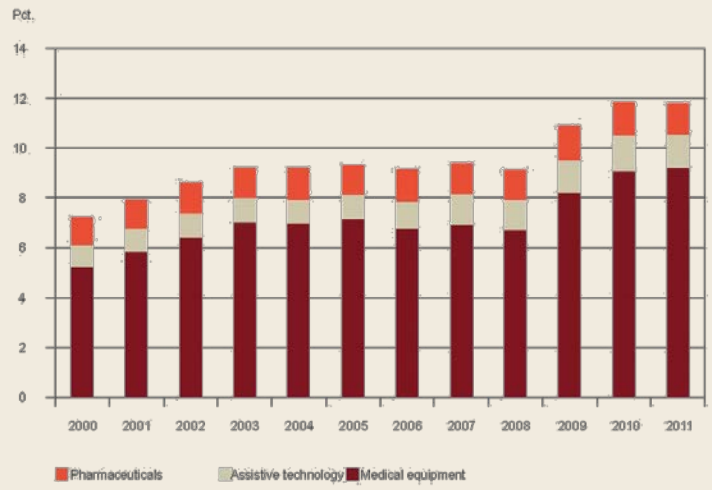
In 2011, Denmark exported pharmaceuticals, medical equipment and apparatus as well as assistive technology in the order of approximately DKK 71 billion, corresponding to nearly 12 per cent of Denmark's total commodity exports. In addition, pharmaceuticals, medical equipment and apparatus and assistive technology represent an increasing share of Danish exports, cf.

[3] Growth team for health and care solutions. Recommendations, January 2013.

Figure 1. The largest product category is pharmaceuticals, which accounted for 9.5 per cent. In comparison, exports of pharmaceuticals made up 3.5 per cent of Danish commodity exports in 1990. The growth in exports is a reflection of the fact that Denmark holds clear positions of strength in relation to other western countries. Exports represent a significant share of the revenue of companies that produce pharmaceuticals, medical equipment and assistive technology. Companies within health IT and service and operational solutions, on the other hand, are geared more towards the domestic market. Foreign investments in the area also confirm this pattern, where the majority of the investments are made in the pharmaceutical industry.

Approximately 19 per cent of exports of pharmaceuticals, medical equipment and apparatus and assistive technology are exported to the USA, which is the single largest export market in these areas. In comparison, the EU15 countries combined receive around 40 per cent, with Germany, Sweden, the UK and France as the largest recipients. The BRIK countries receive approximately 8 per cent of Danish commodity exports of pharmaceuticals, medical equipment and apparatus and assistive technology. Pharmaceuticals are also the primary driver in this commodity export area.

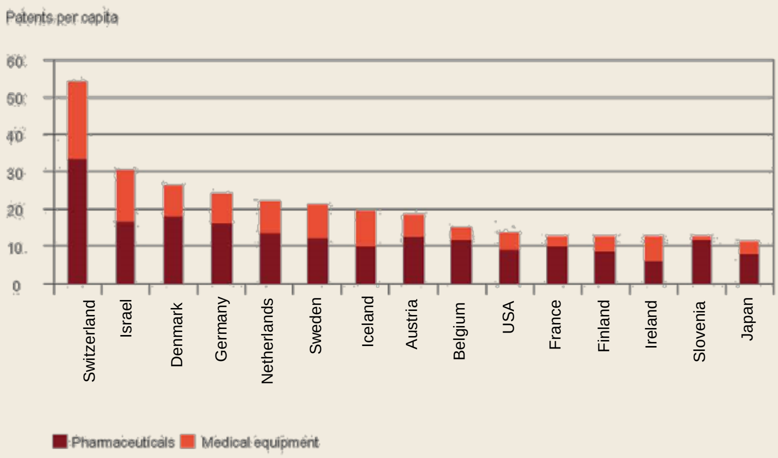
Figure 1: Exports of pharmaceuticals, medical equipment and apparatus and assistive technology in percentage of total Danish commodity exports



Source: Eurostat and own calculations.

Denmark is in the top 3 when it comes to patent activity per capita within pharmaceuticals and medical equipment and apparatus, cf. Figure 2. High patent activity can play an important role in the exploitation of future growth opportunities. However, it is vital that companies, in addition to having high patent activity, also convert their patents into actual products that can be sold in the domestic and/or export markets.

Figure 2: Patent applications submitted to the European Patent Office within pharmaceuticals and medical equipment, 2009

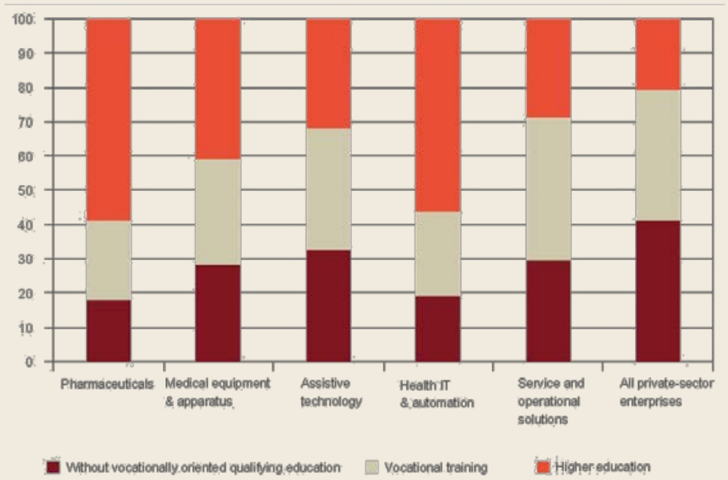


Source: Eurostat.

Companies within the health and care sector have a relatively high productivity rate compared to other companies in the private sector. This applies to all five business areas within the health and care sector. The pharmaceutical industry is, however, the most productive, followed by companies that manufacture medical equipment and apparatus as well as assistive technology companies. This is attributable in part to the fact that these companies are relatively capital intensive and subject to international competition.

The education and competency levels of a company's employees also contribute to value creation and productivity. The level of education is generally relatively high in businesses in the health and care sector compared to other businesses in the private sector. Thus a relatively large number of employees at health and care businesses have a higher education. This is especially true for pharmaceuticals and health IT, where upwards of 60 per cent of the employees hold a university degree, cf. Figure 3.

Figure 3: Educational composition of Danish enterprises within health and care solutions



Note: Incl. employees in quasi-public-sector service and operational enterprises. Without vocationally oriented qualifying education includes basic school, upper secondary school and unspecified educational level.
Source: Own calculations based on the company database of the Ministry of Business and Growth. The stated employee educational levels are based on Statistics Denmark's Register-based Labour Force Statistics.