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Elderly/Disabled people care ecosystem and welfare technologies in Norway

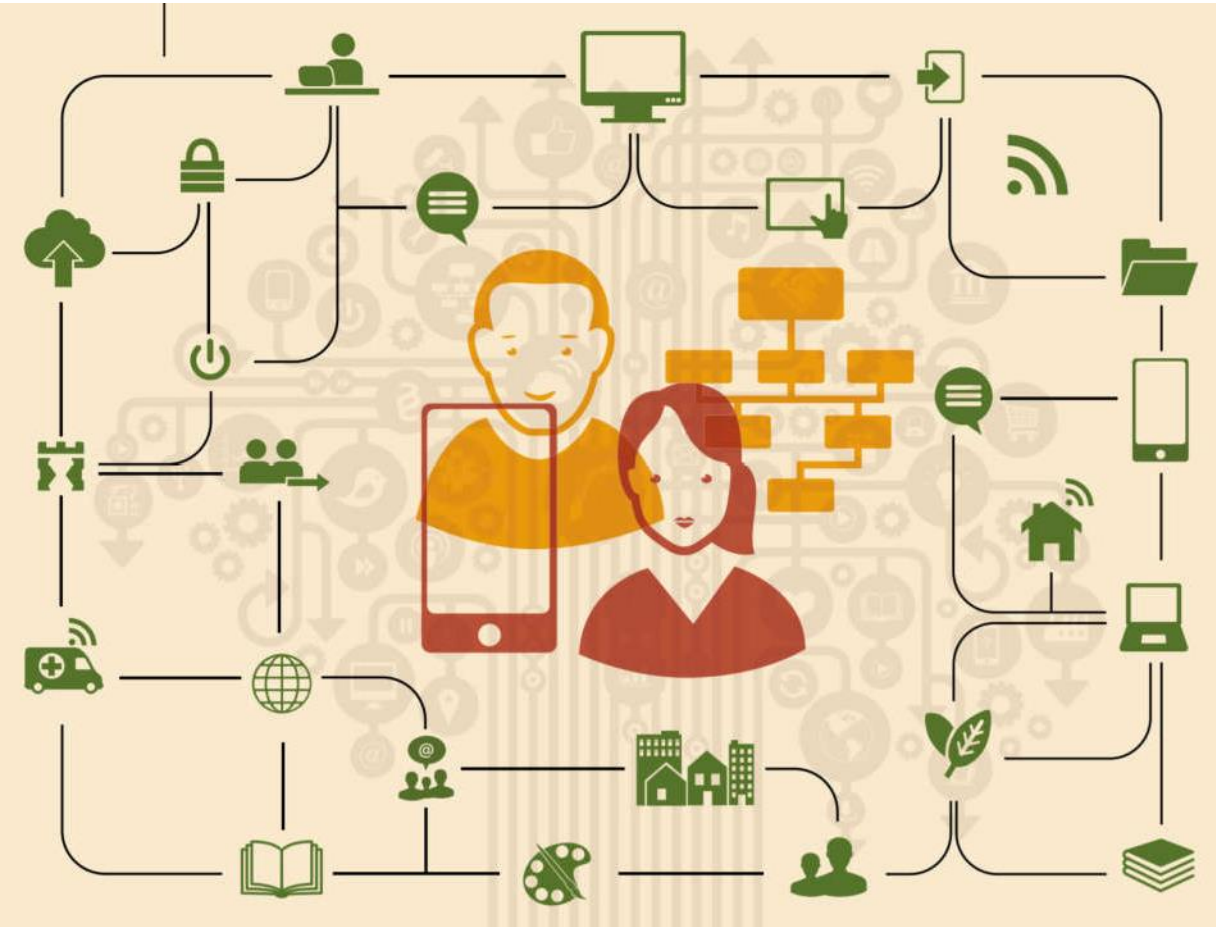
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Elderly/Disabled people care ecosystem and welfare technologies in Norway

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Part 1 – The Norwegian Health Care System with a focus on municipal health care for elderly sick

Introduction

While home-based care is increasingly developed in the municipalities, nursing homes play a more significant role in the care for the elderly sick in Norway than in any other European country (Statistics Norway 2007). Care for elderly sick in medically specialized hospital settings, though, is less pronounced in Norway than in the rest of Europe. Hence the care for elderly sick may be said to be less a part of high-tech medical surroundings and more decentralized in Norway than in the bulk of European countries, with most nursing homes close to the home communities of the patients. This is a challenge both economically and in terms of infrastructure with regard to the sparse and dispersed population of Norway. How this challenge is met, has been changing during the latest two decades. Before dealing with this issue and what it implies for the municipal elderly care sector, the various relevant contexts of the Norwegian welfare system will be discussed.

The NWS exemplify a version of the “Scandinavian” or “Nordic” welfare state model with a comprehensive social policy and social rights and legislation of a universal and relatively generous nature (Kuhnle 1994; Sørbye 2009). The Norwegian public welfare system includes a range of universal benefits, including not the least the right to free education, free health care, pension and economic support for unemployed. The system functions at four main levels: the state, the regions, the counties and the municipalities, of which the regions are of lesser importance³, and the municipalities of growing significance. The main responsibility for the health care sector rests at the national level, with the Ministry of Health and Care Services.

For various reasons our welfare state has been undergoing some important changes during the last decades, with some notable implication for the health and social services in general, and for the elderly care in particular. The changes have important consequences for how the financing and administration of the health care system function at each level and how political processes make the different levels link up with one another. While some of the changes have been justified by an expected new “elderly wave” around 2020, they seem to mimic reforms internationally both within the fields of health, education and other fields where public financing and control post-WWII have been strong in several of the welfare states.

The Norwegian elderly care in a historical and international welfare context

The municipal elderly care in Norway can be conceived of as an important part of one version of the so-called “social democratic” or “Scandinavian” welfare state model.⁴ Such a model could be contrasted to a “liberal” welfare state with quite limited universal coverage and social security (as in the USA and Australia), with a “conservative” welfare state to relatively higher extent maintaining differences of social class and being based on participation in working life (like in Germany, France and Austria), or to “rudimentary” welfare states (like Greece, Italy and Spain), keeping in mind that present Western states defy simple categorization, both historically and with regarding changes that they presently undergo (Kuhnle 1994; Kildal & Kuhnle 2005)⁵.

Regarding the Norwegian realization of the welfare state, the ideal of home ownership and the principle of being economically independent of close family, relatives and the local community lie behind the “Husbanken” (the house-bank), established in 1946, and the universal insurance (“Folketrygden”) introduced by the Norwegian government in 1967 (Sørbye 2009). As will be

commented on later, this ideal seems to influence how institution based elderly care in present-day Norway. For the elderly, the “Folketrygden” covers their pension and their home based or institution based care in case of frailty and sickness. In general, the following aims were pursued in a joint political program in 1945 by all Norwegian political parties: To ensure the right and the plight to employment for all, to render the special services redundant, to establish a decentralized and easily accessible health service for all citizens, to ensure affordable good and high quality food and other goods through developing standard types, to establish a plan for esthetic, spacious and suitable housing for all, and, to grant all citizens a proper education (Nagel 1991).

Together with political initiatives originating at the level of the municipalities, initiatives and demands from NGOs constitute an additional force behind the growth of the modern NWS. Moreover, both the state and the NGOs are also presently involved in the execution of state welfare, not the least within the health care system (ibid.). While the NGOs probably run no more than 5% of the health services today, the municipalities administers more health personnel presently than the specialized hospital care sector (Statistic Norway 2010).

This trend still continues, as the Norwegian government aim to strengthen the municipal health care system, including most of the elderly care sector, including increased economic support for researching the still poorly researched municipal health care system (Norwegian Ministry of Health and Care Services 2008). This development is complex, as financial and administrative reorganizing within the municipalities is taking place at the same time, a matter to which will be returned in this article.

Regarding the material base for the realization of the NWS, various stages in its industrial development could be stressed, like shipbuilding, industrialized fisheries, heavy metal industry fed by hydro-electric power, and later on, the oil industry starting from the early 1960ies, all contributing to developing Norway from one of the poorest countries of the world by the end of the 19th century to the relatively affluent Norwegian society of today. However, the coincidence of late industrialization and relatively early democratization of Norway is of uttermost importance for ensuring an economic basis for our welfare state, ensuring that industrial enterprises were immediately put under democratic and state control. As an example of this, the Norwegian state gets between around 90 % revenues from the petroleum resources through a combination of taxes and public ownership (Martinez 2007).

Like is the case for hospital care, in the latter decades public funding based on general taxation has been the main financial source of funding for the municipal health care. In theory, our health care system is based on obligatory insurance for all citizens, like the continental Europe and in contrast to the taxation based system in Great Britain. In practice, however, our health insurance has come to be gradually incorporated in the general taxation since its establishment as a universal coverage system in 1956 (Erichsen 1996)

How Norway presently compares in health care spending, financing and organization While the United States is the OECD country spending most of its GDP on health, 16.0% in 2006, Norway is number 15 down the list, with a spending the same year of 8.9% of its GDP, which is the same as the OECD average (OECD 2009). With regard to health expenditure pr. capita, though, Norway rank as the second among the OECD countries with a spending of 4,673 USD, following the United States with a spending of 7,290 USD (ibid.). A continuous critique is voiced among Norwegian politicians, especially of the conservative and the progressive (liberal) parties, of the Norwegian health care system being too expensive, and more generally, of the Norwegian welfare state suppressing private initiatives and keeping people out of work by creating dependency. Still, as

already mentioned, in an international comparative perspective it does not stand out as particularly costly. This fact is noteworthy, given the challenging topography and the sparse population of a large part of Norway. Moreover, the employment rate in Norway is presently around 10% above the EU average, and for women, 13% above the mean level in EU (Statistics Norway 2008).

In Norway, like all OECD countries except in the United States and Mexico, public funding is the main source of health funding. In Norway, 84.1% of health spending derived from public sources in 2007, which exceeds 10% more than the OECD average and more than the other Scandinavian countries, while the comparative figure for the United States is 45.4% and for Mexico 45.2% (OECD 2009). With regard to the funding outside public sources in Norway, an increased share of private and corporate insurance play a significant part (Kuhnle 1996; Kildal & Kuhnle 2005).

The financing system comprises the primary means of state control over the health care system in Norway. While, as we shall see, the administration of the Norwegian elderly care is quite fragmented with regard to the above mentioned four levels of public administration, and increasingly, pertaining to for-profit organization, the financing system enables quite much political control at the state level (Erichsen 1996). This does not mean that the system of financing is a unified system. Quite to the contrary, it seems to be the case that the state gains control through a certain type of fragmentation.

While the primary health care sector is financed through the already mentioned "Popular insurance" (Folketrygden), which in reality mainly is part of the general taxation like the rest of the public financing, and a yearly lump sum (rammetilskudd) is granted to the counties to cover the running of the hospitals, direct state contributions outside the ordinary state health budget are provided to the counties and the municipalities for "special needs", defined by the state government and often granted based on documented outcomes also identified by the state (ibid.). Like will be discussed, financial incitements provides the state with the means both to maintain previous policies and to introduce changes in the health care policies, as evidenced in the increasing result oriented financial support, partially at the expense of the politics of fair distribution and giving priority to the greatest health needs (Lian 1996, 2003).

The general coverage of physicians and registered nurses (RNs) is relatively high in Norway. Presently there are around 3.9 physician pr. 1000 inhabitants in Norway, with the comparative figures for USA and OECD being respectively 2.4 and 3.1. The coverage of RNs is particularly notable, with approx. 31.9 pr. 1000 inhabitants in Norway and respectively 10.6 and 9.6 for USA and OECD (OECD 2009). Registered nurses in Norway do not only have a strong position in terms of share number, they also represent a strong group in organizational terms, with around 95% of all nurses being members of the Norwegian Nurses' Association. Presently all students of nursing receive a bachelor degree in nursing, with master studies available at university colleges and universities, the latter also offering doctoral programs.

Municipal elderly care organization in Norway

Presently all people in Norway have the right to receive care in their home community (Norwegian Ministry of Health and Care Services 2008), either through home-based care or in institutions like nursing homes for elderly sick. This presents situation is the result of a new policy since 1984, with the introduction of the Law of municipal health care (kommunehelseloven), where a rather fragmented but still extensive primary health care sector received a unitary organization. As an increasingly more important part of this municipal organization, home-based care consists of everything from help with shopping to advanced respiratory treatment.

Providing people with health services in their local communities pose a certain challenge in Norway, a mountainous and geographically extensive country with regard to its relatively small population of around 4.7 million inhabitants. The municipalities vary very much in size, from 1000 to around 500,000 inhabitants. In Norway all healthcare except hospitals is municipal, a relatively costly sector due to the geography and for the reason of varying size and population density of the municipalities, organizationally challenging (Norwegian Ministry of Health and Care Services 2008). This includes the nursing homes, financed mainly through taxation, but where the patients also pay part of the cost, around 80% of their pension. This payment contributes to around 10% of the total budget for the nursing homes, which is comparatively low in regard to OECD countries like for example the Netherlands and Germany (Romøren 1994; OECD 2009).

A further decentralization process is presently strongly pronounced, although it has already been taking place during the latter decades from county and state to municipal level (e.g. nursing homes and home-based care) with an increasing number of tasks transferred to the municipalities (Statistics Norway 2008). As a result of this general development, presently more health care staff is employed in municipal care than in hospitals. At the same time, a development of deinstitutionalization has taken place, from institution to domiciliary care services (Norwegian Ministry of Health and Care Services 2008). Vocal social criticism of institution care, inspired amongst other things by seminal academic works like the book "Asylums" (Goffman 1961), "The birth of the clinic" (Foucault 1973) and other works by the French philosopher and historian Michel Foucault. This deinstitutionalization is strongly pronounced within psychiatry and the care for mentally disabled in Norway, while the elderly care sector still is very much institutionalized compared to the other Scandinavian countries.

Who cares and where in the elderly care sector in Norway

The percentage of skilled workers, mostly RNs and LVNs, in staff working in the elderly care sector increased from 65,5 in 2003 to 69,4 in 2006 (Statistics Norway 2008), providing a picture of a relatively highly formally qualified staff. A present acute concern in Norway is the future recruitment of competent staff to this sector, not the least with regard to nursing homes, where the patients are becoming increasingly sick and frail (Romøren 1994, 2008). The primary health care sector is a physically and psychologically demanding sector with a relatively high staff sick leave compared to other public sectors, especially in the nursing homes. While the sick leaves in the Norwegian health care in general is around 7.9%, the comparative sick leave in nursing homes is about 9.5%, in comparison with approx. 5.9% in the educational sector 5.9% (Statistics Norway 2008). The turnover rate is relatively low in comparison with for example the United States, in Norway estimated to be between 12.0-12.5%, as compared to around 70% in USA (American Health Care Association 2003).

Norway has the largest percentage of beds in nursing home facilities per capita in Europe, around 1% (Statistics Norway 2007)¹⁰, more than twice that of most European countries (who spend more money on hospitals). Caring for the elderly sick in Norway, more than in any OECD country, means caring in nursing homes (Romøren 1994, 2008). Beds in institutions for elderly and disabled in total, including a dwindling number of beds in retirement homes and combined institutions¹¹, was 68 pr. 1000 inhabitants of more than 67 years in 2005, where the institutions ranged in size from 20 to 140 beds (Statistics Norway 2007). The number of nursing homes is still slowly increasing, while old people's homes (retirement homes) and combined institutions are rapidly decreasing. Around 40% of the population dies in nursing homes (Statistics Norway 2005). While deinstitutionalization is, as already pointed to, the general trend in the present Norwegian health care, the elderly care sector continues to be heavily institutionalized. Norway in this regard contrasts quite sharply with

Denmark, where home-based care is by far more pronounced (Romøren 1994, 2008), despite increased investment in home-based care also in Norway (Sørbye 2009). This present Norwegian trend is frequently justified by politicians by pointing to population aging and the need for intensive care among an increasing number of elderly sick. The other European countries have averagely less than half of the nursing home coverage relative to population size than Norway, but largely for other reasons than Denmark, since more of their elderly sick population tends to be hospitalized at any point of time (OECD 2009).

The staff coverage in Norwegian nursing home facilities is more than double that of most other European countries. Data on the qualifications of the nursing staff is still insufficient, though. For the last two decades there has been a paradoxical development, with the employment of more a “cheap” labor force of so-called “care workers”, with minimal health education, and at the same time more full nurses (RNs) at a university college level who find it attractive to work in nursing homes. LVNs¹², traditionally the greatest work force in nursing homes in Norway, have been diminishing in number (Jacobsen 2005). After a period of heavy public and professional critique of this development, a reformed type of LVN education started about two years ago, aiming not the least at the elderly care sector. In near future the need for staff with higher education in the municipal elderly care sector is expected to increase, due to changes in tasks in the municipal services. Recently there has been a new development toward treatment of acute and severe sicknesses in nursing homes, with the establishment of specialized units for intensive care. Moreover, during the last couple of years rehabilitation institutions for elderly patients in the municipalities have been established, linked to a shortening of hospital stay for these patients. In addition, more and more homebased advanced treatment of elderly sick takes place. All this means that there is an increasing demand for highly educated health personnel in the Norwegian municipal elderly care.

The housing quality of the Norwegian nursing homes is relatively high, meaning that quite much of the public economic support in the elderly care sector has been used for improving building standards, an economic allocation not much publicly debated in Norway. Like already pointed to, home ownership and high quality housing has been pursued as an important goal by the Social Democrats in Norway after the WWII (Sørbye 2009). In contrast, a substantial proportion of the inhabitants of many other European countries like Germany and France rent their homes. Norwegians use a larger percentage of their income for housing than any other European country, including money for continuous refurbishing of their homes (Øye 2005). On this background, it may come as no surprise that the Norwegian government plan for a reorganized elderly care, put into force in 1998, amongst other things stressed the so-called “single occupancy reform” and building smaller units in nursing homes, leading to a rather costly process with regard to remodeling old nursing homes and building several new in order to meet this aim.

The professed goal has been to ensure dignity for the frailest elderly sick. In terms of the present number of single occupancies in Norwegian nursing homes, the new policy has been a success, where the percentage of single occupancies has increased from 78.2 in 2001 to 89.7 in 2005 (Statistics Norway 2007). Like in early post-war Norway, the public institution of the “House Bank” (Husbanken) has been a central actor in order to ensure that better housing remains an important part of our welfare policy. Whether a single occupancy is a blessing for every institutionalized frail elderly has not seriously been questioned nor been a focus of research, possible for cultural reasons, with regard to the importance of home ownership and control of one’s area of living, and political history, where good housing has always been a central issue in the modern Norwegian concept of welfare. Studies performed a while ago in the United States, where many nursing home patients

preferred open wards, may give some reasons for investigating possible negative consequences of this policy (KayserJones 1986, 1989). The cultural values attached to housing combined with a still strong Norwegian economy seemingly encourage very costly investment in nursing home buildings.

The new “elderly wave” as a welfare challenge

Presently Norway experiences a relatively high fertility rate, 1,84, compared to a OECD average of 1,63, and no recent increase of the percentage of the population aged 65 and more, a population which in fact slightly decreased from 15,4 % in 1999 to 14,8 in 2003 (OECD 2009; Norwegian social and health directorate 2007). Hence the country may be said to experience a golden opportunity to rethink its elderly care. In order to prepare for the expected new “elderly wave” around 2020, Otterstad & Otterstad (1992, in Romøren 1994), in an evaluation report for the Norwegian government, proposed four main measures: To transform places in retirement homes into places in nursing homes, to increase the number of short-term places, to coordinate the personnel resources in institutions and in home-based care, and, to develop an intermediate level between home-based care and institutional care. All these recommendations have been followed up on since then, adding to the list the development of medically advanced nursing homes, functioning as “mini-hospitals” for the elderly sick and specialized units providing intensive care and treatment within ordinary nursing homes.

Professionals and politicians defending the stress on nursing homes in Norwegian elderly care tend to maintain that they are always less cost intensive than hospitalization, also in the cases where wards of intensive care are developed within the nursing homes, and that they are not necessarily more expensive than home based care in all cases. Home-based care has frequently been based on a somewhat romantic idea about social resources in the neighborhood, a situation not necessarily rooted in reality (Alvsvåg & Tanche-Nilsen 1999). The weakest elderly and their relatives frequently see nursing homes as a better alternative than home-based care (ibid.).

Retirement homes, another available option, have mostly insufficient staff coverage and medical attention for the weakest elderly. Their availability is, as mentioned, steadily decreasing. The bulk of nursing homes may in some ways have improved, creating a better environment for demented and other frail elderly by improved overall architecture less based on traditional hospital architecture than before, a more familiar physical outline for the elderly, smaller wards, and more use of patients’ own furniture in their rooms (Jacobsen 2005).

The change in the architecture and physical outline of the Norwegian nursing homes is probably not the part of the recent trend of most importance to the nursing home patients and their staff. Recent administrative and legal changes are likely to have a more significant impact on how life is experienced for the frail elderly, both in nursing homes and in homebased care. Quite much of the changes pertain to the overall welfare state system of Norway, with special implications for elderly care, while others are aimed at the municipal health care specifically.

The changing welfare state and elderly care in Norway.

A number of publications during the 1980ies portrayed welfare states in crisis, like a OECD report of 1981 with precisely this title, without a question mark: “The welfare state in crisis”. Some of the publications even predicted the end of traditional welfare states. Still the welfare states exist today, even though the content of their welfare programs have changed. For some countries, like Italy and Spain, there seem to have been a process since the early 1990ies of including elements of a

traditional Scandinavian model, at least until recently. For the Scandinavian countries, however, changes have gradually taken place which have made them somewhat more similar to the “liberal” and to the “conservative” welfare states.

Before dealing more with such changes, let us briefly consider one important precondition for the continuation of the welfare state, namely its support in the general population. The welfare state itself does not seem to be losing support neither in the Norwegian population nor in most European populations. Quite to the contrary, it is supported and defended both by politicians and the population at large (Kuhnle 1996; Kildal & Kuhnle 2005). The recent public awareness of the emerging “elderly wave” and of a growing number of frail elderly seem to further fuel this general support.

For the majority of the Norwegian population, increased critique of the welfare state does not mean that they want to see the end of it. Typical critique of the welfare state takes the form of allegations like there is too much bureaucracy involved, that people with most needs do not receive sufficient support, or that educational and health resources are not distributed in a fair and just way with regard to social class or to geographical distribution. People at large, like most politicians, rather voice in opinion polls a desire for a better function welfare state, and for more rather than less welfare (ibid.). Increasingly the general population cares much about which care they may receive as elderly sick, precisely for the reason that the high employment rate for both women and men necessitates an extensive public elderly care sector.

Another type of critique expressed by both leftist and rightist politicians alike, is that the people tend to get the same opportunities with regard to health and social services regardless of their need. More technically spoken, they speak in favor of more result equality than formal equality (Beteille 1986; Lian 1996). Leftist typically tend to focus on the group level, stressing that a socially inclusive society has to pay attention to special characteristics and needs of groups and not only individuals. Rightist and liberals, and increasingly several politicians within the Labor party, more characteristically employ a “democracy” argument, stressing the importance of freedom of choice at the individual level in order to secure the influence of individual citizens in predominantly public sectors like the health care sector, where competition resulting from freedom of choice will enhance the quality of the services (Lian 1996, 2003).

Following such a line of argument, the Norwegian Conservative party (Høyre) and the Progressive party (Fremskrittspartiet) handed in a proposal twice in the Parliament, in 1990 and 1991, in order to alter the financial basis for the public health care. The reforms were inspired by extensive restructuring of the Swedish and British health care systems from the beginning of the 1990ies (Erichsen 1996:80). The Swedish influence was probably the strongest, Sweden being the weightiest representative of the Scandinavian welfare model (Kuhnle 1994:105-106). In 1993 the Swedish government appointed Linbeck commission strongly recommended a reduction in public spending, where universal coverage is kept at a minimum and where individuals are encouraged to sign up for private insurance (ibid.). This was the beginning of a process of public deregulation and of increased for-profit organization of health and social services starting before Sweden became a member of the EU (ibid.)

In Norway, the plea for reforms was legitimized, not by efficiency, which was central in the political processes of Sweden and Great Britain, but as already mentioned by concepts like freedom of choice, user influence and quality. Several of their proposals fit well in with prominent values in the social democratic welfare state, such as participation and equality (Erichsen 1996). A reform process

has followed since this petition, “characterized by five main traits: *increased efficiency* as a goal, to be measured by

quantitative result indicators, and where the means of achieving the goals are *competition, economic incentives and decentralization of decision-making*” (Lian 1996: 105; au.transl.).

In such a process, confidence more and more seems to be traded in for so-called quality enhancement by ensuring minimal standards, a process which opens up for the increased power of economists and lawyers both as administrators and as suppliers of theoretical models, at the expense of health professionals in a welfare state which for a long time has been a strongly professionalized state, for good and for worse (Erichsen 1996; Jacobsen 2007; Lian 1996, 2003).

Part of the reform process implies opening up for for-profit organizations in education, health care and other traditional public domains in Norway. So far, the privatization in those domains has not proceeded very far, compared to most other OECD countries. Regarding the elderly care sector, the most pronounced privatization so far has taken place within the nursing homes, where there presently are around 5% of nursing homes administrated by for-profit organizations, while 90 % are public and 5 % are run by NGOs (AARP 2006).

With the present social democratic government in Norway, it seems like state initiatives for privatization of welfare has come to a halt. However, this does not mean that further privatization will not take place. Quite to the contrary, it presently looks like several municipalities opens up for more for-profit privatization, including the elderly care sector. Quite recently also the home-based care activities are in the process of becoming subject to competition from private companies, amongst other in Bergen, the second biggest town in Norway, where the private actors are actively encouraged by special arrangements like exempting the companies from having to care for patients during the night, a costly activity which is to remain a public responsibility.

This all relates to the administrative complexity of the public health care already mentioned, where four administrative levels are involved, and where the present stress on decentralization since the early 90ies means more and more health care administration at the lowest public level, that of the municipalities (Kuhnle 1994; Kildal & Kuhnle 2005; Lian 1996). This implies that changes at the state level may enter through “the back door”, like for example seems to have happened through repeated for-profit experiments taking place in the capital of Oslo (Lian 1996). As part of the increased freedom of political action for the Norwegian municipalities, the municipalities are free to contract private companies or whoever they want in order to fulfill overall quite general goals set by the Norwegian government, within economic limits set by the same government. Regardless of the political composition of the state government, municipalities governed by conservative and progressive parties increasingly tend to open up for pro-profit organizing of health care.

A further decentralization process which is not much commented on in public reports, inspired by international trends and inherent in the new public reforms in Norway, implies management and budgeting at the lowest possible level, both at the level of each individual health institution like specific nursing homes, and furthermore, at the level of departments and care units within the health institutions (Jacobsen 2005, 2007). This process creates certain challenges and dilemmas which are outside the scope of this article to describe, pertaining to possible mismatches between the best units of care for the elderly and the actual units of budgeting.

The situation of municipalities being powerful administrative and political units is not new. Rather, strengthening the role of the municipalities means returning to a situation before the establishment

of a more centralized and strongly professionalized Norwegian state from the beginning of the 1970ies (Erichsen 1996). At the same time, even if the municipalities in a sense have returned to power, the power they exercise and the wider administrative and legal framework of which they are part has changed through a process which several Norwegian academics have come to view as a new public management trend. One prominent part of new public management is the public choice theory, a theory which derives from the rational choice theory, a methodological individualistic theory where human actors are seen as maximizing value and acting in an instrumental way, and where all social phenomena can be derived from individual traits, motives and acts. Another important part is the principal agent theory, where an "agent" (for instance a health administrator or an administrative body) is supposed to act on behalf of another, a "principal" (in example the government), but where it is acknowledge that the goals of the two are rarely identical and where one can suppose that strong self-interest will guide the agent. Hence there is a need for economic incentives rewarding specific actions and punishing others. In both theories the idea of mutual trust has no place, while controlling and channeling self-interest and measuring the outcomes of various courses of actions gains prominence. Paradoxically, the control and evaluation part of the new forms of governance, in the midst of professed goal of decentralizing, seem to led to a strong centralization (ibid.; Hamran 1996; Jacobsen 2005, 2007).

An important question to ask is of course, to what extent is the description of a new model of public governance a description of the reality in Norway, particularly in the care sector? Do health personnel do as expected? Are the new incentives working? At least so far, there are reasons for doubting at least that the health staff acts primarily according to the theories inherent in the new reform. The physicians, for example, still seem to act more (or at least as much) on the basis of a professional ethics meeting the greatest needs first and delivering just health care services (Lian 1996, 2003). There also seem to be a significant degree of reluctance among nursing staff in nursing homes (Jacobsen 2005) and in hospitals (Bø 2007) with regard to following up on new reporting routines and new forms of work organization. This does not mean that the reform process do not show any significant results, to the contrary, an increased market for pro-profit organizations within the elderly care and public economic support of nursing homes based on results they can report (including so called "quality points" based on specific new measurements) are two of several clear signs that the new policy is in some sense also working. Looking to countries like New Zealand, who started a similar reform process of the public health care system prior to Norway and where most of the elderly care sector is presently managed by for-profit, and mostly international, organizations (Harding & Lerdal 2005), there may still be other changes to expect in Norway in the long run which are not pronounced in the short run (Kuhnle 1994; Kildal & Kuhnle 2003). The point here is that health professionals and semi-professionals do not seem to fit the new public management theories, since their trade is also government by a professional ethics and since they are continuously in close contact and hence influenced by their patients and their needs (Jacobsen 2008; Lian 1996).

Could the new policy still be good for most elderly sick? Part of the decentralization process has led to an increased development of local health care options, a process which still continues with the strengthening of the municipalities and the municipal health care system. In addition, in the health care sector as in the educational sector, there is an increased opportunity for choice. As a part of this picture, the growing introduction of for-profit organizations increases the choices of patients within the health care system, for a couple of decades within the specialized health care and since 2003 within the municipal elderly care sector. There are, however, some necessary questions to ask regarding the increased range of options, not the least within the health care sectors serving the patients being least able to participate in their own care and treatment process, like the patients in the nursing home sector, psychiatry and the services for the mentally disabled. Can result equality

be achieved by giving patients more choices? And, who are in the position to choose? The frail elderly? Although user participation in health care is an honorable aim in itself, this does not necessarily imply that all patients really want, or have the strength and means, to get involved in their own care.

A study of Bastiaens *et al.* (2007, in Sørbye 2009) asking elderly patients in 11 European countries about getting involved in their care, concluded that most people over 70 years wanted a quite limited involvement in their own care, like receiving information and having a good relationship to their care-givers. They did mostly not wish an active participation in decision making. Moreover, in Norway there is a tendency toward politicians investing more in good housing within and outside institutions, as a pronounced welfare aim, to the expense of ensuring sufficient staffing, which is not part of the quality measurements as part of the Norwegian health reforms (Jacobsen 2005; Sørbye 2009). This means that in choosing for example a nursing home, in itself a challenge for the patients since the majority of them have a dementia diagnosis, means choosing between institutions with a relatively high standard in terms of housing qualities but with insufficient staffing. Obviously, a stress on the democratic ideal of personal choice in the health care sector among most Norwegian politicians is taking place without a proper debate on who are in the position to choose, and what are the differences in quality between the available choices.

Concluding thoughts

The Scandinavian welfare state model has received quite much international attention, by some as a success story and by others as a passive client creating model hampering a sound economy. Even though it is extensive in terms of personnel involved in welfare tasks, it is not particularly expensive compared to the welfare sector in other OECD countries (Kuhnle 1994; Kildal & Kuhnle 2005; OECD 2008). The material basis for ensuring the realization of the NWS has been most fortunate, both due to rapid industrialization lifting the country from severe poverty during the last 100 years, and due to the late industrialization making it possible to ensure democratic and state control over the industrial companies and the natural resources exploited, like marine food resources, heavy metals and petroleum resources. A sound material basis for the Norwegian elderly care is likely to be the case still for some years to come, with still relatively few signs of an economic crisis.

In the last two decades, several traits of the Scandinavian welfare state model have been incorporated into EU countries, not the least the Southern European states (Kuhnle 1994; Kildal & Kuhnle 2005). At the same time, recent processes of change within the Scandinavian welfare states make them more similar to the so-called conservative continental welfare states, by increasingly introducing elements of corporate and private insurance and by opening up for commercial management in the elderly care sector, traits that are so far more pronounced in Sweden than in Norway (*ibid.*; Erichsen 1996). Another trend which has been discussed in this article is the new public management inspired trend of incorporating models from the commercial sector within public elderly care and other public enterprises. While countries like Great Britain, Australia and New Zealand seems to have reversed this trend the latest years, the opposite may be said with regard to Norway (Stamsø 2009).

As an important part of the development of the NWS, the municipal health and social services have been expanding since the 1970s, for a while in parallel to a centralization process where the state exercised quite much direct control through the integration of health staff (primarily physicians) into the central health bureaucracy and offices of government planning. Later on, administrative reforms in the 1980s and 1990s have, as have been described, increased the range of tasks assigned to those

services (Norwegian Ministry of Health and Care Services 2008), and in general, the political influence of the municipalities.

The NWS in general and the health care system in particular are undergoing administrative changes similar to changes introduced in EU and the OECD countries, several of which can be subsumed under the umbrella “new public management”. Although those changes may be, for the time being, less pronounced in Norway than in most of the other countries, new reforms within this same new tradition is continuously introduced in Norway, not the least influenced by reforms in Sweden and Great Britain. Their effects on the Norwegian health care system are complex and difficult to assess. Imported from the realm of the private business sector, they do not necessarily fit easily into a “production process” where the “customers” are also part of the product and the production process. However, for sure the reforms do not affect all groups of patients in an equal manner. Particularly within the elderly care sector, where the aims of what to achieve is challenging to formulate, the “customers” are frail and in a weak bargaining position, results are difficult to measure and the work itself does not lend itself easily to quantification (Hamran 1996), the reform may possibly have the least success, and to the extent that it is successful, have many unintended consequences.

So far the municipal elderly care sector, like the health care sector in Norway, is staffed with a formally highly qualified staff in comparison with several other OECD countries. The general coverage of medical doctors, and even more so, of nurses, is far above the EU and OECD average both in specialized health care and within the elderly care sector, a sector which is likely to pose an increasing demand for high formal competence in near future. Still the position of nursing homes as part of the municipal elderly care sector is, for good and for worse, stronger than in any other OECD country and may continue to constitute an important part of this sector for foreseeable future. Running nursing homes is a particularly expensive venture in Norway, due to the national development toward single occupancies and smaller wards, an investment which possibly may be at the expense of other investments which might benefit the elderly sick more.

Whether declined formal competence and level of staffing will result from an increased “liberalization” and for-profit privatization of the Norwegian elderly care sector, like documented for the nursing homes in the United States where for-profit organization is correlated with less staff, less formal competence and decreased quality of care (see e.g. Harrington et al. 2002; O’Neill et al. 2003), remains to be researched. Another possible scenario could be that the publicly managed elderly care remains as dominant as today for years to come, while the content of this management become more and more influenced by management models imported from the private sector.

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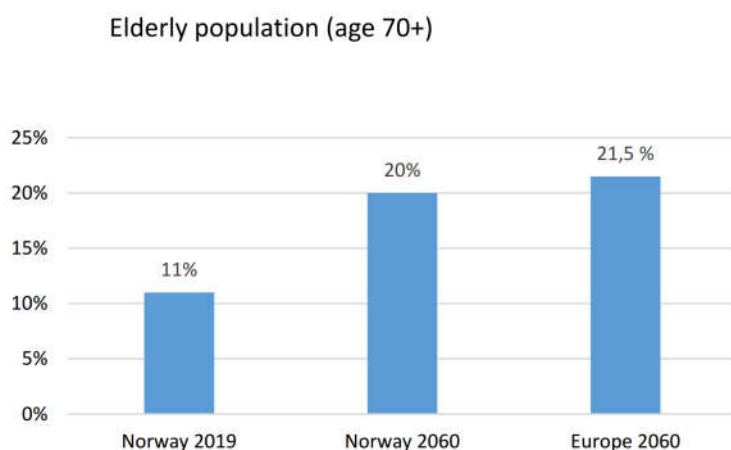
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Part 2 - Technologies in care for older people in Norway

Elderly population

Facts and Figures

Today, every ninth Norwegian is 70 years of age or older, in 2060 this number will be every fifth. Hence, relatively fewer people will have to look after relatively more people. Without a reorganisation of the health and care services, Norway will need to double the number employees in the health sector over the next 40 years.² The use of technology is therefore seen as essential.



Digital maturity

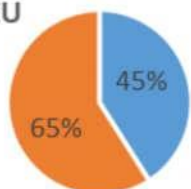
Norway is ranked among the top European countries both when it comes to the use of digital technologies, and online public services.³ 91 percent of citizens own a smartphone and 90 percent use the Internet daily.⁴ 96 percent of those between 80-100 years have a PC, tablet, smartphone or phone without internet.

Current status of care technology and political ambitions

The use of technology in elderly care has been on the policy agenda in Norway for at least a decade. In 2009, the Norwegian Board of Technology (NBT) published the report “the Future of ageing”, which was followed by a government green paper in 2017 and a white paper on future care in 2013. Policy makers have focused on safer homes, a national care program, a new technology hub and a national program for an age friendly society.

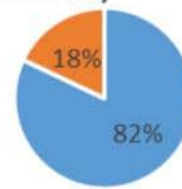
Weekly Internet use by the elderly (age 65-74) in the EU

- Weekly Internet use
- No weekly Internet use



Weekly Internet use by the elderly (age 65-74) in Norway

- Weekly Internet use
- No weekly Internet use



Safety care packages

To enable people to live at home as long as possible the government proposed a right to a safety care package (fall sensor, smoke detector, electronic door opener, mobile phone, tracking solution (GPS) etc.) for elderly. The package received broad political support, but also lead to a debate about

GPS tracking people with dementia. GPS tracking entails surveillance but can also provide safety and freedom of movement for the person with dementia.

In 2013 new legislation allowed the use of location technologies, including GPS to improve and facilitate the municipal health and care for people with dementia⁹. The number of people with dementia who have been offered a GPS alarm at home, has increased from 65 in 2015 to 1,141 in 2018. However, this is still a low number compared with the 77 000 people with dementia.

The care technology programme

With a total budget of around € 1 billion, the goal is for care technology to be an integral part of the municipalities' care services by 2020. User-friendly care technology, training for both users, next-of-kin and employees, and innovation have been the top priorities.



The first part of the programme has focused on implementing current safety and care technologies, such as safety alarms, electronic door locks and tools for better scheduling of home nursing services. In total, projects have been funded in 320 municipalities.

The government provides guidance, tools and networks to encourage and support these projects. The programme is now focusing on innovations, particularly medical remote monitoring. One of the major projects funded is the VIS project (Welfare technology in the city) which has tested four solutions on 822 patients:

- Automatic pill dispenser
- Mobile safety alarm
- Remote Chronic obstructive pulmonary disease (COPD) monitoring
- Personalized health check-ups

The evaluation showed a 34% reduction of visits from home care services, 19% reduction in hospitalizations, and overnight hospital admissions were reduced by 33%. Both users and their next of kin reported feeling safer and with a higher sense of mastery.

These results have been questioned due to the lack of a control group. A new, randomized control trial is therefore under way and is focusing on the role of the GP and how to establish continuity in patient care.

Care technology hub

Results from the first care technology projects in the municipalities, showed that there was a need for better data flow between the welfare technology solutions and the municipalities' electronic

patient records. Following the Government's ambition "One citizen – One health record" a care technology hub has been established in order to enable exchange of data.

An age friendly society

Currently, more attention is directed towards the growing number of older people in good health. In 2018 Norway got its first minister for the Elderly and a new Council for an age-friendly society. The new trial has 600 participants with 300 of them in a control group.

The reform "Live Your Whole Life" published in 2018¹⁴ deals with what matters the most in life: community, activity, good food and healthcare services. The reform also initiated a "national programme for an age-friendly Norway" that focuses on how demographic change affects all areas of society, markets and sectors; Encouraging organisations and businesses to create more age friendly institutions and companies, see older persons as a resource for the local communities and encourage seniors to adapt their home.

Implications for the elderly, staff and work places

The ABC training programme for employees

In order to provide a better understanding of the challenges ahead, including why changes should happen now, and what roles the employees should play in the various change processes, an interdisciplinary training programme for employees in municipal health- and care services was developed by the authorities.

The training programme covers different topics such as legislation and ethics, methods for mapping user needs, and introductions to technological solutions that are being used in municipalities today.

Including seniors in a digital world

The Directorate of Health, in collaboration with different NGOs, organized courses and training for older technology users. The results show that the participants experienced better mastery of relevant technological tools. At the same time, the training strengthened and maintained the participants' social networks and reduced loneliness.

Seniornett is a voluntary, politically neutral member organization and has worked to include seniors in the digital world since 1997. The organization has around 9000 members and is continuously updating and supporting seniors through its 235 Senior Network Associations. These serve as meeting places, where anyone can come and try out internet for free, get guidance, exchange experiences and keep each other updated. Seniornett also has a telephone service providing help for seniors with IT problems.

Gaming and VR for better physical and mental health

Physical activity is a key component for healthy ageing and in treating numerous diseases and chronic conditions. However, physical activity levels among the elderly are generally low, and rehabilitation typically requires supervision from health care personnel.

The city of Bergen is now testing virtual reality glasses in several nursing homes to make the everyday lives of people with dementia and other residents better. Using VR, the elderly can return to the neighbourhood they grew up in and relive memories they otherwise would have trouble remembering or visit an art exhibition without the supervision from the personnel. Another example is the project Senior Gamer, where seniors are invited for bowling using the Wii game console. According to an evaluation of the project, "computer games not only contribute to increased physical and mental activity, but also to creating good moments, good meetings and much joy".

Future perspectives and reflections

Artificial intelligence (AI) has made a powerful leap forward in recent years. Machines can now learn to interpret text, speech and images, and do advanced tasks that so far have been reserved for humans. This technology might profoundly impact the nature of elderly care in the years to come.

A prominent example is dementia, which is considered one of the greatest challenges for health and care in the 21st century. Around 50 million people worldwide have dementia today, a number that is predicted to triple by 2050.

While the cognitive abilities of people with dementia are decreasing in the course of the illness, the cognitive faculties of care technologies are steadily increasing with machine learning. Tools that use artificial intelligence (e.g. digital assistants) can help people with dementia to remember, reason and organise their daily lives. Furthermore, health workers and next of kin can get access to decision support, medical advice, and predictions for the development of the condition. However, the introduction of AI in care also calls for a wider ethical assessment and public debate.

A number of aspects needs to be considered:

Privacy: Machines learn from huge amounts of data, from patient journals as well as from sensors in our environment and on our bodies. This can reveal very personal and intimate knowledge about individuals, while at the same time enabling personalised assistance and decision support.

Power: The health and care sector is beginning to resemble the Internet economy. Data has enormous value and platforms, such as Apple's App Store, Google Play, Amazon and Facebook, will be used by many care technology providers as channels of distribution.

The platform companies also have access to a huge variety and volume of data from their own services, and thus have significant insight into the condition of individual citizens as well as different populations. Needless to say, internet companies will have significant power when they decide to enter the market for care.

Responsibility: As the condition of people with dementia varies constantly, it becomes important to continually fine-tune the tools so that they are always in harmony with the patient. AI tools can learn to adapt to the condition of the patient, so can nurses and next of kin. What kind of decisions should be left to the AI system, different health professionals, next of kin, and the patient respectively, and who is ultimately responsible? Moreover, the algorithms may be slightly opaque and difficult to understand, which makes it difficult both to anchor responsibility for decisions and to appeal the decisions.

Autonomy and integrity: Machine learning can make predictions of the individual's behaviour and preferences more accurately and inexpensively than before and it becomes possible to influence and manipulate actions and attitudes as well. An AI-assistant can, in theory, be so clever that people trust its advice more than their own judgement, and the boundaries between person and machine might be blurred. This also involves the person's relationship with others: Does it matter if the patient knows whether she is in contact with a machine or a human?

Participation: To further autonomy, integrity and safety for the patients, care technology should be developed and used with and for the potential users, and not on them. Thus, there is a need to develop methods that include the elderly in the development of technologies. An example is the Assisted Living Project, which aims at engaging persons with mild cognitive impairment and dementia (MCI/D) in developing technological solutions. In five dialogue cafes, the participants have

addressed their challenges, discussed solutions, tested alternative assistive technologies, and given their feedback.

Annex 1 - Member Norwegian Health Tech Cluster

Organisation	Sector	Description NOR	Email	URL
Abilia AS	HumanLifeSciences	Abilia utvikler, produserer og selger moderne hjelpemidler for mennesker med funksjonsnedsettelse innen områdene Kommunikasjon, Kognisjon, Varsling og Omgivelseskontroll. Våre produkter er lette å tilpasse, og lette å bruke. Vi har eksisterte i over 40 år, og blant våre mer enn 100 medarbeidere finnes en bred kompetanse som dekker alle hjelpemiddelområder, alt fra ingeniører og teknikere til spesialpedagoger, ergoterapeuter, vernepleiere og logoped. Vi samarbeider med brukere, hjelpemiddelsentraler, brukerorganisasjoner og kompetansemiljøer. Gjennom vår tilstedeværelse i hele Skandinavia og gjennom våre utenlandske distributører, samler vi opp verdifull kompetanse som brukes på tvers av landegrensene.	info@abilia.no	http://www.abilia.no
Ably AS	Medicaldevice	Inspired by the human spine, Ably presents a bed that learns, knows, mobilizes and collaborates.	ka@ablymed.com	http://ablymed.com
Acando	eHealth(ICT)	Acando is a consultancy that assists enterprises in the public and private sector with their transition to the use of digital technologies. Acando combines business knowledge and market knowledge with solid expertise in technology to assist its customers with a broad set of services. Acando offers services in strategic consulting, design of products and services, streamlining work processes and the creation and implementation of system solutions.	francis.dsilva@acando.no	https://www.acando.no/

Accenture	ConnectedCare/DigitalHealth	From the back office to the doctor's office, we help clients deliver more effective, efficient and affordable healthcare with Insight Driven Health.	geir.prestegard@accenture.com	https://www.accenture.com/no-en/health-industry-index
Advanced Assistanse	Serviceprovider	Advanced Medical Support comprises specialized nurses, doctors and project managers with backgrounds from public and private sectors within healthcare, assistance services and insurance.	tove@amedsup.no	https://advancedmedicalsupport.no/
Advokatfirma et Selmer DA	LawandIPR		nke@selmer.no	http://www.selmer.no
Amesto Consulting	Serviceprovider	Access to the entire consultancy market from one place.	Alexander.nordkvell@amesto.no	https://amestoconsulting.no/
Amra	ConnectedCare/DigitalHealth	AMRA is an international digital health company and the first in the world to transform images from a rapid, 6-minute whole body MRI scan into precise, 3D-volumetric fat and muscle measurements. Our cloud-based analysis service – AMRA® Profiler Research – offers precise, automated insights that have far-reaching implications for the pharmaceutical industry, academic R&D and, soon, clinical practice. Our Mission is to confront our global health challenges by establishing the foundation for body composition measurement and providing the knowledge needed to predict and prevent diseases. For more information, visit www.amra.se or contact Chief Business Development Officer, Chelsea Ranger, at chelsea.ranger@amra.se	chelsea.ranger@amra.se	https://www.amra.se/
APPetitus as	ConnectedCare/DigitalHealth, eHealth(ICT)	APPetitus as is a startup, set up to maintain and further develop the nutrition app APPetitus. APPetitus is a solution for prevention, early intervention and sound management that aim to mitigate health and	anne.moen@appetitus.no	http://www.appetitus.no

		wellness challenges from malnutrition; ranging under-nutrition to obesity. Our mission is to stimulate appetite, and stimulate variation in food choices to support personal dignity and thrive in everyday living. The product is useful for all; citizens, their significant others as well as health care professionals, in their home or as part of the organized care offerings.		
AppSens AS	Medicaldevice	AppSens is Norwegian based start-up company developing wireless medical sensors and devices for the mobile patient. The company was founded by people with experience from MedTech and Cardiology. The company cooperates with local Partners, Hospital and University having unique competence and knowledge within eHealth.	tord@appsens.no	http://www.appsens.no
Arcid	eHealth(ICT)	Arcid is the result of a merge between RisCo AS and IRX AS. Our history goes back to year 2000. After nearly 2 decades of experience in development, roll-out and maintenance of software for the health sector, we now have customers in both public and private market. Most of them in Norway, but we also have installations in Sweden, Denmark and Germany.	shu@risco.no	http:// www.arcid.no
Argentum	Investor	Argentum is an asset manager investing exclusively in private equity funds, including both venture and buyout. The company has a total of EUR 2.2 bn in committed capital invested on behalf of the Norwegian Government and private investors.	imm@argentum.no	http://www.argentum.no
Aristeia AS	Medicaldevice	Aristeia develops a new emergency tourniquet for military and civilian trauma care. We seek to empower both professional first responders and bystanders through simple solutions.	gard.moe@aristeia.no	http://www.aristeia.no

Artekno Oy	<p>Diagnostics, Findprojects, InnovationCompany</p> <p>, Marketswefocuson, Medicaldevice, Serviceprovider</p>	<p>Artekno Oy is working deeply within the HealthTech- and Medical-industry in Finland and Sweden, we are a subcontractor of components to Health and Medical technology equipment.</p>	<p>matti.salo@artekno.fi</p>	<p>http://www.artekno.fi</p>
ASAP-Norway	<p>Medicaldevice</p>	<p>ASAP-Norway is a norwegian company, who together with the healthcare professionals, has developed protective covers for the next generation; for beds, tables, and stretchers, where liquid waste, and spills are a problem.</p>	<p>astrid@asap-norway.no</p>	<p>http://www.asap-norway.no/</p>
Assitech AS	<p>InnovationCompany , Medicaldevice, Sales</p>	<p>Assitech AS is a technology company that develops and produce innovative, activating and high value mobility aids for an international market.</p>	<p>halvor@assistep.no</p>	<p>https://assistep.com</p>
Attensi		<p>Attensi is a world leading provider of gamified simulations across a large variety of business sectors and industries. Within the health sector Attensi's 3D gamified simulations help to optimize their procedures to create the healthcare of tomorrow, today! Through training with the simulations, you develop best practice skills in communication and interactions with people and technology. Together with our partners we have developed 3D simulations for "fall prevention", "treatment of adolescents with psychiatric conditions", the communication methodology "Motivational Interview", implementing procedures and best practice when moving into a new hospital, and several more are in development.</p>	<p>bjarne.johnson@attensi.com</p>	<p>http://new.attensi.com/</p>

Augere Medical AS	Diagnostics, eHealth(ICT), Medicaldevice	Augere Medical AS utvikler systemer for AI-drevet automatisk analyse av bilde og video til beslutningsstøtte for medisinske formål. Vårt hovedfokus er systemer for automatisk analyse av video fra mage-tarmkanalen.	andreas@augeremical.com	http://www.augeremical.com
Avalia AS	IT/Saas	Avalia AS was created in 2014 and has since grown in number of people and solutions. Avalia AS is a Norwegian IT company premises at Eidsvoll Verk, with the Norwegian constitution building as a neighbor.	kent@avalia.no	http://www.avalia.no
BB Visual Solutions AS	InnovationCompany , IT/Saas	We are a Tech Company founded in 2006. We have many years of experience in Data Integration, Visualization and Collaborative where we have developed Tolls for interactive work. Our expertise is in ITC and IT application development. Even though a lot of our engagements have been in the Oil and Gas Industry we consider our self as a ITC Tech Company with dedication to our spesialiced fields.	magne.brekke@bbvisuals.no	http://www.bbvisuals.no
Bestfør AS	IT/Saas	Bestfør AS leverer Bestfør.no, et system for oppfølging av produkter med begrenset holdbarhet.	post@bestfor.no	http://www.bestfor.no
Bio-Me AS	Diagnostics	Bio-Me AS is a Norwegian-based biotech company, and the culmination of 20 years research on best ways to detect various bacteria in communities. This research has led to novel, patented technologies and new approaches in bacterial analysis that significantly reduces the cost, while increasing speed and throughput.	m.isaksen@bio-me.no	https://www.bio-me.no/
BIOVOTEC	Medicaldevice	Wound treatment is a major healthcare cost for all developed countries. Ideally, wounds at-risk of becoming chronic in high-risk patients should be treated from the outset with the most effective	ralf@biovotec.com	http://www.biovotec.com/

		products (such as collagen based dressings), however, due to cost considerations, this is not the case.		
Bitvis AS	R&D/Educational facility, Serviceprovider	Bitvis is a wholly owned subsidiary of Acando since October 1, 2017 and operate as a separate company in the Acando Group.		http://www.bitvis.no
BRAIVE (tidl Tankeboksen)	eHealth(ICT)	Braive develop and distribute evidence-based information and tools to help our users develop their mental skills through step by step programs that are personalized, affordable and effective. Our programs are in constant development through ongoing research collaborations with academia and the health sector, and feedback from our users. Users can complete the programs on their own and/or in conjunction with other treatment.	contact@braive.com	
Bull & Co	Serviceprovider	Bull & Co is a modern, full-service business law firm. We are driven by profoundly understanding our clients' business, cooperation and sharing our knowledge both during and between assignments.	kmt@bull.no	http://www.bull.no/
Calpro AS	ConnectedCare/DigitalHealth, Diagnostics	Calpro AS was founded by the inventors of the technology behind the ELISA kits for determination of calprotectin in stools and other biological materials. The company is based in Oslo and has the benefit of close professional links with many of the major clinical research departments and medical establishments in Norway, Europe and the USA.	Ingvild@calpro.no	https://calpro.no/
Capgemini	eHealth(ICT)	With more than 190,000 people, Capgemini is present in over 40 countries and celebrates its 50th Anniversary year in 2017. A global leader in consulting, technology and outsourcing services, the Group reported 2016 global revenues of EUR 12.5 billion.	atle.bergfjord@capgemini.com	https://www.no.capgemini.com/

Cardiacs	Medicaldevice	Cardiacs AS is developing a disruptive medical device for monitoring in patients undergoing cardiac surgery. Our product is based on a miniaturized accelerometer embedded into a single-use, temporary pacemaker electrode, providing continuous cardiac monitoring and rapid detection of complications such as reduced pumping capacity and limited bloodflow.	jonas.tysso@cardiaccs.com	http://www.cardiacs.com/
Cardinor	Diagnostics		dag.chr@cardinor.com	http://www.cardinor.com/
CardioMech	Medicaldevice	•CardioMech is a Norwegian based company initiated in 2012	Rick.Nehm@cardiomech.com	http://www.cardiomech.com
Carving5	ConnectedCare/DigitalHealth	Carving Five is preventing blindness among diabetes patients by deploying an AI-camera for automated retinal disease diagnostics.	anders@carving5.com	http://www.carving5.com
Celio AS	Serviceprovider	Celio supports small and medium sized companies which need competent financial and administrative resources on a temporary or long-term basis. We adapt our services to our customers' needs in a practical and cost-efficient manner, working partly on-site at the customer's premises or off-site, following up via phone and e-mail.	hpt@celio.no	http://www.celio.no/
Cellmover AS	Biotech, InnovationCompany	Cellmover AS is a newly established company with a goal to develop immunotherapeutic products directed at treatment of cancer. We specifically design products to enhance survival, activity, and targeting of immune cells used for cell therapy.	inngjerdingen@mail.com	http://www.cellmover.com
Cerner Norge AS	eHealth(ICT)	Strategic innovation in health care, for today and tomorrow.	hans.moe@cerner.com	http://cerner.com

CFOFORHIRE	Serviceprovider	Experienced, operational and efficient CFO with more than 20 years in pharma industry. Broad CFO experience from international organisations including listed and PE-owned companies like Nycomed, Alpharma, Xellia Pharmaceuticals, Codon AG and Affitech. We offer high quality CFO services for small and medium sized companies on a part time basis. Particular focus on R&D and growth companies with demanding investors and Board. We ensure reliable and precise financial information for decision makers. We adapt our services to our customers' needs in a practical and cost efficient manner. Owner and CFO-consultant is Stig Jarle Pettersen. We have cooperation with Celio AS and Finance Resources AS.	stigjp@gmail.com	https://www.cfoforhire.no/
CheckWare	eHealth(ICT)	CheckWare is made specifically for healthcare organisations and clinical studies that use psychometric measures and want to provide digital self-reporting and self-management to their patients.	info@checkware.com	http://checkware.com/
Computas	ConnectedCare/DigitalHealth, Digitalhealth, eHealth(ICT)	Computas is an IT solutions provider based in Norway. We deliver services and solutions for work processes and collaboration. Our core competence is systems development, architecture and integration, project management and consulting. We have unique experience, deliver high quality in all projects and work closely with customers to make the best solutions.	pvk@computas.com	http://www.computas.com
ConceptoMed AS	Medicaldevice	ConceptoMed AS is a ISO 13485 certified, ambitious medtech company serving the global market with innovative product categories and unique proprietary technology.	christian.mide@conceptomed.no	http://conceptomed.com/
CondAlign	Medicaldevice	Based on our inventive technology, CondAlign (CA) develops materials and processes for the next generation ECG-electrodes, as	morten@condalign.no	http://www.condalign.no/

		well as numerous other products within the anisotropic conductive film area.		
Confrere	ConnectedCare/DigitalHealth	Confrere is a video calling solution that is tailored for video calls between professionals and their customers. In the health sector, we are often used for calls between patients and health care professionals.	svein@confrere.com	http://confrere.com
Cubist IT AB	ConnectedCare/DigitalHealth, Serviceprovider	With an understanding of the challenges in today's healthcare together with our tech experience, we work with novel solutions that make a difference for people and society. This way, we help making use of healthcare resources in a more efficient and cost-effective way.	leonard.lorentzen@cubist.eu	http://www.cubist.eu
Decon-X International AS	Medicaldevice	Decon-X is a Norwegian manufacturer and supplier of automated disinfection solutions. The company launched the first version of its automated disinfection machine, DX1 in late 2014. Development and tests started in 2006 with the mission to develop an advanced disinfection machine with process monitoring capabilities for automated disinfection of hospitals and nursing homes. The target of Decon-X is to always ensure at least a removal of 99.9999% of all microbes—a 6 log reduction. Today's technology and solutions are based on tests in the company's own laboratory and by partners under a research program financed under the BIA program by The Research Council of Norway. Removal of microorganisms are verified at Statens Serum Institute in Denmark, Karolinska Institutet in Stockholm and Oslo University Hospital Ullevål in Norway.	bplatou@deconx.com	http://deconx.com/

Dehns Patent & Trade Mark Attorneys	LawandIPR	Dehns is one of the leading European firms of specialist patent and trademark attorneys, with 7 offices and more than 200 staff. Despite being based in the UK, Dehns is one of the best known and most highly regarded firms of patent attorneys in Norway, with a long and proud history of working with Norwegian innovators dating back more than 40 years.	dowen@dehns.com	http://www.dehns.com
Deloitte AS	eHealth(ICT), LawandIPR, Serviceprovider	A world in rapid change creates both significant opportunities and new challenges for the health sector. By the use of unique tools and innovation methodology, Deloitte provides insight into the latest trends and assists participants in the health sector to continuously adapt to a changing market. We assist our clients within the different strands of innovation in order to be able to facilitate for innovation; from insight and understanding of trends, development of innovation- and digital strategies, and establishment of internal innovation organizations to implementation of innovation- and pilot projects. We are experts in catching new market trends and are a well-established link between creative firms, such as start-ups, and organizations that are willing to change.	cflatum@deloitte.no	http://www.deloitte.no
Depict AS	eHealth(ICT)	Depict AS conveys important information about medicines, in a way that is easy for EVERYONE to understand. The goal is to avoid injuries related to the incorrect use of medicines. We offer the service Depicto™, which provides health care professionals with access to patient-centric information, and a way for them to convey it to the patient. The service is used by pharmacists, doctors, nurses, and others to ensure that the patient receives all of the information he or she needs when using a medicine. We ensure that the information is easy for the patient to understand, by presenting it with short texts	eirik@depict.no	https://depict.no/

		in his or her own language, and supporting it with simple figures known as pictograms.		
Diatec Monoclonals AS	Diagnostics	Diatec Monoclonals are reliable experts in services regarding your cell lines:	bjorn.pedersen@diatic.com	http://diatec.no/
Diffia	eHealth(ICT)	Diffia is a Norwegian digital health tech company with a unique understanding of healthcare, modern technologies and clinical user experience design. They are the makers of Nimble – a mobile clinical solution designed for hospital doctors and nurses – providing them with a tool that saves time and needless effort, so they can focus on what’s really important – treating patients and saving lives.	petter.risoe@diffia.no	https://www.diffia.no
Dignio AS	ConnectedCare/DigitalHealth	Dignio is Norway’s leading supplier of connected care for the chronically ill. Our award-winning platform enables healthcare providers to monitor and follow up an increased number of patients in a safe and innovative way. Our technical solutions give patients flexibility in everyday life and an overall increased quality of life.	lars@dignio.com	https://www.dignio.com
Dinamismo AS	Serviceprovider	We contribute to results and positive customer experiences by increasing the strategic focus on the most important asset in your organization – the people	anne@dinamismo.no	http://www.dinamismo.no
DIPS AS	eHealth(ICT)	DIPS ASA is the leading supplier of eHealth systems to Norwegian hospitals. The company has contracts with three of Norway’s four regional health trusts, including five of the six university hospitals in Norway. The DIPS solutions has more than 80,000 daily users and is thus one of Norway’s most used computer systems. Our solutions	post@dips.no	https://www.dips.com/no

		enable health care personnel to significantly rationalize their work, improve the quality of patient care and increase patient safety.		
DNB		DNB is the Nordic Healthcare Bank and a top 10 healthcare bank in the US. Our client list include global pharma, biotech and medical device companies headquartered in the US and Europe. Our clients are serviced by experienced bankers together with industry experts located in New York, Oslo and Stockholm.	Terje.straume@dnb.no	https://www.dnb.no/konsern/bransje/healthcare.html
DNV GL	HumanLifeSciences	Driven by our purpose of safeguarding life, property and the environment, DNV GL enables organizations to advance the safety and sustainability of their business. We provide classification, technical assurance, software and independent expert advisory services to the maritime, oil & gas and energy industries. We also provide certification services to customers across a wide range of industries. Combining leading technical and operational expertise, risk methodology and in-depth industry knowledge, we empower our customers' decisions and actions with trust and confidence. We continuously invest in research and collaborative innovation to provide customers and society with operational and technological foresight. Operating in more than 100 countries, our professionals are dedicated to helping customers make the world safer, smarter and greener. As a trusted partner, we work with healthcare providers, national and regional health authorities and key stakeholders around the world to improve healthcare quality and facilitate the provision of patient-centered, safe care.	Bobbie.nicole.ray-sannerud@dnvgl.com	https://www.dnvgl.com/
Dossier Solutions	IT/Saas		geir.arnhoff@dossier.no	http://dossiersolutions.com/

Drowzee	Medicaldevice	On a global basis, approximately 1 out of 10 adults suffer from chronic insomnia. Drowzee develops the first commercially available, research grade sleep onset reduction device.	admin@drowzee.com	http://www.drowzee.com
Egde Consulting AS	Digitalhealth, eHealth(ICT), IT/Saas, Marketswefocuson, Medicaldevice		annl@egdeconsulting.no	http://www.egdeconsulting.no
Epigram Medtech	R&D/Educationalfacility	We are a community specializing in helping healthtech companies do machine learning and big data analysis. Alongside having projects with both large commercial actors and smaller startups, we also have a tight bond with groups at both UiO and OsloMet, cooperating on both research projects and initiatives targeting students.	esten@epimed.ai	http://epimed.ai
EpiGuard AS	Medicaldevice	EpiGuard is an innovative Norwegian Med-Tech company established in 2015 by doctors at the Oslo University Hospital together with Inven2, Eker Group and Hansen Protection. EpiGuard has evolved into a highly skilled knowledge-based company within the development and manufacturing of high-end medical equipment for safe transport of contagious patients.	henrik.aase@epiguard.com	http://epiguard.com/
Evondos		Evondos is an international healthcare service company experiencing strong growth. Our first service offering is a medicine dispensing robot for professional home care; our robot guides the home care client into taking the right medication, at right dosage and in correct time. Our service increases patient safety as well as generates significant direct and indirect cost savings to home care service providers and professionals. Evondos Ltd headquarters and	sven.seljom@evondos.com	https://evondos.no/

		production are located in, Finland. The company has currently about 60 employees working in Finland, Sweden, Norway and Denmark.		
Exceller	InnovationCompany , Investor	EXCELLER is a business development company focusing on health tech and life science. We are developing the 37 °C – Life Science Business Conference & Exhibition with our partners.	arne@exceller.no	http://www.exceller.no
Gardermoen Campus	Cluster	At Gardermoen Campus we gather innovative businesses to find future health- and welfare solutions.	maa@aspelinramm.no	http://www.gardermoenencampus.no
Geelmuyden Kiese	eHealth(ICT)	Geelmuyden Kiese is Scandinavia's largest communications agency, with offices in Copenhagen, Oslo, Stockholm, Brussel and Bergen. The company was established in 1989, and today we are more than 150 employees.	geiro@gknordic.com	http://gknordic.com/no/
Genetic Analysis	Diagnostics	Genetic Analysis has developed and launched the first gene-based routine test for the mapping and aide in diagnosis of diseases related to dysbiosis and imbalances in the bacteria in the digestive system. A standardized and robust technology makes it possible to compare bacteria profiles in patients to bacteria profiles of control populations as well as in patient groups before and after treatment. A standardized reproducible method is critical in order to discover links between the microbiota, clinical conditions and treatment. The company markets the CE marked GA-map™ technology to three market segments: commercial routine testing, pharma companies and the research market. Genetic Analysis was established in 2008 and is based on research done by Professor Knut Rudi at Norwegian University of Life Sciences.	service@genetic-analysis.com	http://www.genetic-analysis.com/

Gentian	Diagnostics	Om selskapet: Gentian er et internasjonalt team som utvikler globale løsninger for å forbedre klinisk nøyaktighet. Teamet er basert i Moss og har i tillegg kontorer i Sverige (Stockholm) og Kina (Beijing). Med produksjon, R&D og markedsavdeling på samme sted betjener vi det globale markedet for medisinske tester med sensitive biokjemiske produkter, basert på vår proprietære antistoff- og nanopartikkelbaserte teknologi vi kaller Nanosense. Vår produktlinje av laborietester gjør en forskjell for human og veterinær medisinsk behandling innenfor nyre- og inflammasjonsrelaterte sykdommer. Vår pipeline av produkter som lanseres de neste årene består også av tester innenfor kardiovaskulære sykdommer, virusinfeksjoner og kreftdiagnostikk.	ole.benny.ostby@gentian.no	https://www.gentian.no
Gjensidige	Serviceprovider	Gjensidige is a Nordic general insurer. The Group safeguards life, health and assets for private and commercial customers in Norway, Denmark, Sweden, Lithuania, Latvia and Estonia. In Norway, products within banking, pension and savings are also offered.	kao@gjensidige.no	http://www.gjensidige.no
Globus AI	Digitalhealth, IT/SaaS	Globus AI (www.globus.ai) develops cloud based software (AlaaS) that simplifies everyday life for planners and health care professionals. By analyzing large (and small) amounts of data in real time, in combination with advanced algorithms and artificial intelligence, we reduce the uncertainty in daily operations. Recommended actions and plans related to staffing levels, right competence at the right time, and rapid plan iterations are provided. An active learning-based recommendation system ensures continuous learning from user interaction. Solutions can be delivered as standalone products or as integration into existing system (so-called AI as a service).	tor@globus.ai	http://www.globus.ai

Glucoset	Medicaldevice	GlucoSet develops sensors for continuous monitoring of glucose in critically ill patients. The innovation reduces costs for hospitals and improves outcomes for patients.	contact@glucoset.com	http://www.glucoset.com/
Gyldendal Norsk Forlag AS	Serviceprovider	Gyldendal Norsk Forlag AS is a major Norwegian publishing house, with proud traditions of publishing in all genres and areas. Today our output is divided between four main publishing units: Gyldendal Litteratur, Gyldendal Undervisning, Gyldendal Akademisk and Gyldendal Rettsdata. Gyldendal has also two smaller imprints: Kolon Forlag and Tiden Forlag. Digital products and services constitute more than 20 % of our turnover as of 2016.	arne-magnus@gyldendal.no	http://www.gyldendal.no
Halodi Robotics	ConnectedCare/DigitalHealth	Robots for everyone – We believe the time for mass producing affordable robots is here, and we are going to start this revolution. Designed from the bottom up to be safe for humans to work with, and with the same strength as a human being, our full sized humanoid robot will be able to actually help people. Due to its' natural compliance, applications such as assisted living and rehabilitation are ideal initial uses for our robot.	steinerik@halodi.com	http://www.halodi.com
Hedmark Kunnskapspar k As	TTO- Incubators and clusters	Hedmark Knowledge Park (HKP) is a competence environment that promote knowledge-based business development in Hedmark County. Our 23 employees work actively with networking and advice companies with goals for growth and innovation. HKP operates an incubation service where selected companies receive additional follow-up for two years. There are focus on business development and financing. HKP has biotechnology, ICT and games as well as food and experiences as strategic focus areas, but wishing all those who	frank@hkp.no	http://www.hkp.no/

		have ambitions welcome. Regional development is also being implemented through the K + conversion program.		
Helse Sør-Øst Rhf	PublicHealthService Provider	South-Eastern Norway Regional Health Authority is one of four Regional Health Authorities in Norway and is the strategic unit that owns the hospital trusts in the region.	Kjetil.storvik@helse-sorost.no	https://www.helse-sorost.no/
Helseklyngen	Cluster	Health Cluster is an ideal association and a formalized cluster for providers of specialized health and rehabilitation services. The cluster forms an arena for exchange of expertise, R&D and testing. One important focus is application of mobile health solutions.	post@helseklyngen.net	http://www.helseklyngen.net/
Hemispherian	Biotech	Hemispherian is an Oslo-based company founded in 2015. Our highly experienced team of biochemists, biologists, and software engineers provide elegant solutions to bioinformatic and recombinant DNA technologies.	info@hemispherian.com	https://hemispherian.com
Holberg Eeg AS	Digitalhealth	Holberg EEG AS is a Norwegian based eHealth company with products for standardised structural interpretation, reporting and sharing of advanced diagnostic data, and is currently focused in the field of Electroencephalography (EEG).	oyvind.gulbrandsen@holbergeeg.com	http://www.holbergeeg.com
Hotswap Norden	Medicaldevice	At Hotswap engineering consultants we have a strong passion for life science technology and medical device development, from connectivity to brain surgery. We offer all services needed for conception, development and design transfer to production in close cooperation with our customers. Turn-key or on-site. And we are certified according to SS-EN ISO 13485:2012. Working together as a team with software, mechanics, electronics and regulatory, bringing	leonard.lorentzen@hotswap.eu	http://www.hotswap.eu/

		the maximum benefit to our customers. Medical Device Development – that’s what we do every day. Hotswap offers services for the whole life cycle of your product. Including mechanics, electronics, software and the combination – mechatronics!		
HØR		What we do		https://xn--hr-lka.no/
Hugg AS	Serviceprovider	Hugg is a mechanical design and engineering company based in Oslo. We design and build innovative mechanical solutions for clients who require accurate and reliable engineering. With broad experience from the subsea- and other branches, we deliver high-end enclosures for electronics and instruments. Deliveries range from one-off prototypes to streamlined serial production. With our focus on high quality design and high-end products, medical technology and -care have become a natural arena for Hugg. Hugg is certified according to ISO 9001:2015. Do not hesitate to contact us if you’d like to discuss opportunities or have a challenge.		http://www.hugg.no
Hy5	Medicaldevice	Hy5 is a Norwegian prosthetic limb company; bringing to market the world’s first hydraulic actuated, mind controlled, hand prosthesis. Many years of passion driven innovation has been invested in creating a hand prosthetic with optimal functionality – at a reasonable price.	cf@hy5.no	http://hy5.no/
Hygiene Teknikk AS	InnovationCompany	According to an EU/EEA-wide study published in October 2016 by the European Centre for Disease Prevention and Control (ECDC), an agency of the European Union, 3.5 million Europeans contract an infection while in hospital and 2.5 million die or are seriously debilitated as a result.	morten.lohre@i2open.com	http://www.i2open.com

IBM Norge	eHealth(ICT)	<p>IBM, with operations in over 170 countries, operates at the intersection of technology, business and society, and wishes to help streamline and digitize companies and industries in Norway. IBM has the innovation and development of new solutions that understand, evaluate and learn based on data analysis as an important part of its strategy, delivering industry-driven, cloud-based and cognitive solutions within Big Data, Analytics, Security, Mobility, and Collaborative Tools. The IT industry is changing radically and we will continue to lead and adapt. Today, IBM is much more than a 'hardware, software, services' company. IBM has developed a strategy that involves developing new solutions that understand, evaluate and learn based on data analytics. These cognitive solutions are to be delivered on our cloud platform. We continually challenge the framework for what is technologically possible to achieve.</p> <p>Therefore, IBM is the technology company in the world that achieves the most new patents related to technology every year. Here we move the limits of what technology can accomplish – and helps to change the world.</p>	hege.stokke@no.ibm.com	https://www.ibm.com/no
Imatis AS	eHealth(ICT)	<p>Imatis is a leading provider of digital healthcare solutions to any type of healthcare organization. We endeavor to bring our customers and partners into the future of digital healthcare. Our solutions help bridge the gap between the silo-based, heavyweight clinical and administrative ICT systems and today's lightweight technological reality, where mobility and accessibility are vital.</p>	Bjorn.Olav.Nygaard@imatis.com	http://www.imatis.com
Improve Performance International	Digitalhealth	<p>Improve Performance International is a Software Start Up Company as far as it was a buy-out process from ResultatPartner (ResultPartner) in 2017. Before then; our Software has been gradually evolved and developed since 1995 as part of Trainings</p>	ronny@resultatpartner.no	https://resultatpartner.no

		towards clients within Business, Sports and Health. It is a unique digital Software platform to Plan, Execute and Follow Up projects regarding improvements.		
Independence Gear AS	Medicaldevice	In 2015, Tord Are Meisterplass crashed on skis and the accident paralyzed him from his chest and down. The hardest challenge for him to overcome as a spinal cord injury patient was incontinence and the lack of bowel control. Basically this means he couldn't use the toilet by himself any more.	carl@dignum.no	http://dignum.no
Indre Østfold Medisinske Kompetansesenter IKS	PublicHealthService Provider	Helsehuset – Indre Østfold Medisinske Kompetansesenter IKS er et interkommunalt selskap for 7 kommuner i Indre Østfold. Befolkningsgrunnlaget er ca. 51.000 innbyggere og selskapet er lokalisert på tidligere Askim Sykehus. Selskapet består i dag av Enhet for Legevakt, Samfunnsmedisin og Enhet for Døgnopphold. I tillegg utføres et større prosjektarbeid for utvikling av rehabiliteringstilbud i kommunene; Innovativ rehabilitering i Indre Østfold.	kristian.devold@iomk.no	http://www.iomk.no
Infiniwell	ConnectedCare/DigitalHealth, Digitalhealth	Getting healthcare up to speed	odd@infiniwell.ai	http://www.infiniwell.ai
InformaMedica		InformaMedica are visually based programs made for health personal and the general population.		
Innokas Medical Ltd.	Medicaldevice, Serviceprovider	Innokas Medical is your co-creation partner in medical technology. Together with our customers, we transform their ideas into a high quality medical products.	elina.rautiola@innokasmedical.fi	http://www.innokasmedical.fi

Innoventus Sør AS	InnovationCompany , TTO-Incubatorsandclusters	Innoventus Sør is a regional innovation company, incubator and TTO representing the south part of Norway. We focus on innovation, to secure growth in the region. The company is actively working with entrepreneurs, businesses, public agencies, academic and research institutions, to create sustainable solutions for the future. Our mission is to contribute to the commercialization of innovative ideas that provide growth and employment.	Kamilla.Sharma@innoventussor.no	http://www.innoventussor.no
Inonit AS	eHealth(ICT)	Inonit is an Oslo-based IT company founded in 2013. We are about 10 employees as of May 2017, most of which are developers and solution architects. We work with a diverse set of customers, in many different industries, but have a particular interest in entrepreneurs/start-up companies and healthcare technology.	jan.haagensen@inonit.no	http://www.inonit.no/
Intervensjons senteret	HealthResearchInstitute, PublicHealthService Provider	The Intervention Centre is a clinical and technological research and development department for minimally invasive and image guided diagnostics and therapy. The Intervention Centre is a common toolbox for all departments at Oslo University Hospital, and also for other hospitals. The Centre collaborates with regional, nation and international partners. The Centre has seven sections; Section for Clinical Research, Section for Radiology Research, Section for Anaesthesia Research, Section for Medical Cybernetics and Image Processing, Section for Information and Communication Technology, Section for Method Development and Industry Collaboration, and Section for Patient Treatment. Section for Method Development and Industry Collaboration leads a test facility at The Intervention Centre.	koyri@ous-hf.no	http://www.ivs.no/

IntSpo AS	InnovationCompany	Med intelligent sporing mener vi blant annet løsninger for asset management, der utnyttelsesgrad for utstyret eller tingene kan være en viktig parameter.	hanserik@intspo.no	http://www.intspo.no
Inven2	Biotech, ComputationalLifeSciences, ConnectedCare/DigitalHealth, Diagnostics, eHealth(ICT), HumanLifeSciences, Medicaldevice, Pharma	Research and knowledge are the key to addressing global challenges relating to health, climate and the environment. Highly capable researchers and clinicians from all over Norway report ideas and discoveries to us. We develop and manage these ideas, and proceed with the ones that can be transformed into products and services that benefit society.	post@inven2.com	http://www.inven2.com/no
Inventas	Medicaldevice, R&D/Educationalfacility, Serviceprovider	Inventas is a Norwegian design and innovation company with offices in Trondheim, Molde, Bergen, Stavanger, Kristiansand and Oslo.	info@inventas.no	http://inventas.no/
Itera	eHealth(ICT)	Itera is a communication and technology company. We deliver consulting and strategy, design and development, operations and management.	Bjorn.Myrvold@itera.no	http://www.itera.no/
JodaCare	eHealth(ICT)	JodaCare is a digital communication solution that connects the health personnel with the family members of people with dementia or mental disabilities. JodaCare is used in home services, in nursing homes and assisted living facilities.	kristil@jodacare.com	http://www.jodacare.no/

K. Lerøy Metallindustri AS	Medicaldevice	After many years as a supplier of fine mechanics to several different industries, K. Lerøy Metallindustri AS has gained a lot of experience in this area. Strict tolerance requirements and difficult materials obviously require advanced machines and measuring equipment, but also the right competence. Skilled employees who meets new challenges head-on has pushed the limits for what they themselves thought was possible to produce. It is not just pressing "start" when you want to machine parts to Subsea in challenging material or to make tiny parts for a heart pump.	kiell.leroy@leroymetall.no	http://www.leroymetall.no/
Kodemaker Systemutvikling AS	Serviceprovider	At Kodemaker our aim is to deliver higher quality software, in less time, with fewer people. We only hire experienced consultants who enjoy tackling difficult problems. We are a tight knit gang of enthusiastic and passionate developers who help each other solve problems across projects.	kolbjorn@kodemaker.no	http://www.kodemaker.no
KPMG	ConnectedCare/DigitalHealth, Digitalhealth, Serviceprovider	KPMG er et internasjonalt nettverk av revisjons- og rådgivningsselskaper med mer enn 189.000 medarbeidere over hele verden i 152 land.		https://home.kpmg.com/no/nb/home.html
Kreftforeningen	Patientorganization	The Norwegian Cancer Society is one of the largest user and special interest organisations in Norway. By the end of 2015, the organisation had 113,500 members, 25,000 volunteers and 190 employees, all highly competent individuals who are committed to advocating for the cancer cause. The objectives of the Norwegian Cancer Society include preventing and fighting against cancer, and to improve the quality of life for patients and their families. The Norwegian Cancer Society makes an important contribution to society by fighting cancer on a national and a global level, through	liveli.lundeby@kreftforeningen.no	http://Kreftforeningen.no

		research, prevention, information, support, advisory services, and political advocacy. The Norwegian Cancer Society has its headquarters in Oslo, and district offices in Tromsø, Trondheim, Bergen, Stavanger, Kristiansand, Hamar, Tønsberg and Oslo.		
Kunnskapsforlaget	eHealth(ICT)	Kunnskapsforlaget ANS is the leading Norwegian publishing house specializing in dictionaries and digital language tools. Kunnskapsforlaget ANS possess, and is constantly enhancing and developing, language technologies able to automatically identify and display correct terms and definitions, a technology well suited for use in all fields where comprehension (within the field of medicine: diagnosis and recommended treatment) must stem from correct comprehension of texts – both natural and structured.	thomas.nygaard@kunnskapsforlaget.no	https://kunnskapsforlaget.no/
Labrida	Medicaldevice	Labrida is a Norwegian biotech company developing and marketing innovative and regulatory approved products for maintenance of dental implants. This focus is motivated by the strong demand for better and more user-friendly instruments addressing peri-implant disease, affecting more than 50 million patients world wide.	tbgrunfeld@gmail.com	https://www.labrida.no/
Landsforeningen for hjerte- og lungesyke, LHL		The National Association for Heart and Lung Disorders (LHL) is a member-based, ideal health organization with over 52,000 members. We provide treatment and health services based on the patient's medical and human needs.		https://www.lhl.no/
Lauritzen AS		Lauritzen AS er et investeringselskap med fokus på vekst-selskaper. Helse er et av investeringsområdene, og vi ser på mulighet for en kombinert rolle som investor og aktiv eier.	bhl@lauritzen.no	

Leogriff	Law and IPR, Service provider	EXPERIENCED IP MANAGERS	ad@leogriff.com	http://leogriff.com/
Letsip AS	Computational Life Sciences, Connected Care/Digital Health	Letsip AS er et firma som utvikler produkter for barn og voksne som av ulike grunner har lammelser, skeiv utviklinger eller sensorisk nedsatt funksjon av tale, kommunikasjon, sikling, spising eller drikking.	post@letsip.no	http://www.letsip.no
Lifecare AS	Medical device	The main objective of the Sencell Implantable Miniaturized Osmotic Sensor Device is to provide a convenient, efficient, reliable, painless, accurate and durable continuous glucose measurement (CGM) solution at a low cost for daily use to diabetics. The unique and advanced technology of Sencell offers a novel technology for the global market.	rune.frisvold@lifecare.no	http://www.lifecare.no
Lilleeng Helsepark	Private Health Service Provider	Lilleeng Health and Wellbeing Centre is located in Moss, approx. one hour south of Oslo. Lilleeng provides unique services in its top modern premises. With more than 35 different clinics and close to 100 health workers, Lilleeng is the biggest health centre in the region. With a focus on interdisciplinary collaboration, Lilleeng provides the customer what (s)he needs in one location.	finn@lilleenghelsepark.no	http://www.lilleenghelsepark.no
LINK Medical Research	Service provider	Do you need assistance with the regulatory process to obtain CE Marking in Europe or FDA 510K Clearance in the US for your medical device?	lars@linkmedical.no	http://linkmedical.no/
Lion Healthcare AS	Biotech	Lion Healthcare is a Norwegian biotech company developing next generation solutions for prevention and treatment support of type 2 diabetes.	zy.kristoffersen@lionhealthcare.no	http://www.lionhealthcare.no

Listen AS	ConnectedCare/DigitalHealth	Listen is a Norway based startup developing new solutions to provide hearing care everywhere, for everyone, in all kinds of environments through its easy to use mobile app called MobileEars. With MobileEars, Listen wants to lower cost and access related barriers of standard medical hearing aids.		http://listenas.com/
Mecsense AS	Medicaldevice	Mecsense AS located at Oslo Innovation Centre is developing a continuous and non-invasive glucose indicator for diabetics based on a newly discovered principle for density and viscosity measurements in cooperation with Mid Sweden University, Emzense AB and ShortLink AB in Sweden and Noliac AS in Denmark. The density of the body liquids and viscosity caused by variations of the glucose level are measured by a novel physical principle protected by two patent applications.	ind-o@online.no	http://mecsense.net/
MedCare AS	Medicaldevice	Medcare AS represents Chromaviso and Chordate Medical in Norway.		http://www.medcare.no
Medistim	Medicaldevice	Medistim is a Norwegian company that develops, sells, and distributes medical devices that measure blood flow and visualize atherosclerosis, which helps improve the quality and outcome of cardiac and vascular surgery. Being an innovator and market leader within intra-operative transit time flow measurement (TTFM) and ultrasound imaging, Medistim is serving the global market with the devices VeriQ™, VeriQ C™ and the latest generation, MiraQ™. These systems enable medical professionals to reduce the risk of death and stroke, providing clinically relevant information that empowers surgeons to make better-informed decisions in the operating room. Our TTFM technology became part of the ESC/EACTS guidelines on myocardial revascularization in 2010 and reissued in 2014. In 2011,	kari.krogstad@medistim.com	https://medistim.com/

		<p>the National Institute for Health and Clinical Excellence (NICE) recommended our VeriQ™ system for routine use within the UK national health system (NHS). In 2016, Medistim's technology achieved reimbursement in Japan for the routine use of blood flow measurement and intraoperative ultrasound imaging during coronary bypass surgery procedures. Medistim has wholly owned subsidiaries with marketing and sales organizations in the USA, Germany, the United Kingdom, Spain, Denmark, and Norway, in addition to a global distributor network representing the company in more than 50 countries in Asia, Europe, America and Africa.</p>		
Memoria	ConnectedCare/DigitalHealth	<p>Memoria is a digital platform that enables better individual care based on each person's own story and memories.</p>	elise@minmemoria.no	http://www.minmemoria.no/
Mentis Cura		<p>Mentis Cura AS is an innovative company developing biomarkers based on electroencephalography (EEG). Mentis Cura's technology is positioned to dramatically improve access to affordable brain diagnostics. For individuals with dementia, early and accurate diagnosis ensures they get the most appropriate care as soon as possible and helps them and their families understand the disease better before it progresses. From a health care system perspective, early and accurate diagnosis promotes better use of limited resources and accelerates and reduces cost of clinical trials for new drugs.</p>	info@mentiscura.com	http://mentiscura.com/
Merck AS	HumanLifeSciences, Medicaldevice, Pharma, Sales	<p>Merck is a leading science and technology company in healthcare, life science and performance materials.</p>	lone.skipping@merckgroup.com	http://www.merckgroup.com

Metronor AS	Medicaldevice	For more than 25 years, Metronor AS has been developing precision measurement systems for geometry. These systems are based on electro-optics and can be industrial, military or medical.	oeyvind.roetvold@metronor.com	http://www.metronor.com
Mode Sensors AS	ConnectedCare/DigitalHealth	Mode is developing a novel method of doing hydration and nutrition screening for patients receiving home care.	martin@modesensors.com	http://www.modesensors.com
Mossregionens Næringsutvalg	Digitalhealth	Mossregionens Næringsutvikling AS (MNU) is an operational business development company with the following focus areas:	post@mnu-as.no	http://mnu-as.no/
Motitech AS	ConnectedCare/DigitalHealth, InnovationCompany	In 2012, we were involved in a project with the municipality of Bergen, where the purpose was to motivate the elderly and people with dementia to become more physically active. The results of the project were so good that we wanted to start a company to offer the concept throughout the Nordic region.	jon.ingar.kjenes@motitech.no	http://motitech.no
Nasjonalt senter for e-helseforskning	R&D/Educationalfacility	The Norwegian Centre for E-health Research was established January 1st, 2016. This new research and analysis centre will gather, produce and disseminate knowledge the authorities need to develop a knowledge-based e-health policy.	stein.olav.skrovseth@ehealthresearch.no	http://www.ehealthresearch.no
Nemko	Serviceprovider			https://www.nemko.com/
Netlife Design	Digitalhealth	We in Netlife Design can help you with:	irmelin.bergh@netlife.com	http://netlife.com

Nisonic AS	Medicaldevice	Nisonic is developing an advanced ultrasound technology to measure the pressure in the brain (intracranial pressure) in a harmless and cost-effective way. Several indications can affect the intracranial pressure, including head trauma, stroke, meningitis and other central nervous system infections, brain tumours, etc. Today the only accurate measurement method is by invasive insertion of a sensor directly into the cranium, with the risks of bleeding, infections and damage to the brain tissue.	jan@nisonic.com	http://www.cofounder.no/portefolje/#
NKI	R&D/Educational facility	NKI Nettstudier was founded in 1959 and is currently one of the largest online Education providers in the Nordics. In 2007 the company became a part of the Anton B Nilsen group. NKI has over 10.000 students a year and offers over 300 online courses. NKI is constantly working towards offering the best online education, through using the right technology and teaching methods.	fredrik.andersen@nki.no	http://www.nki.no
No Isolation	ConnectedCare/DigitalHealth		heide@noisolation.com	https://www.noisolation.com/no/
Norautron as	Serviceprovider	Norautron is a full service electronics manufacturer established in 1989.	jan.erik.strom@norautron.com	http://www.norautron.com
Nordea Bank	Investor, Serviceprovider	If you need someone to talk to about capitalizing your company or are considering attracting new investors or seek for loan financing we are the right people to talk to. We also have good knowledge about the programs and tight cooperation with Innovasjon Norge. Whatever you seek we are curious to hear about your company, your plans and ideas and look forward to meet you.	kristoffer.engelschion@nordea.no	https://www.nordea.no/bedrift/din-bedrift/starte-bedrift/

Norsk Førstehjelp AS	Serviceprovider		terje.halvorsen@norskforstehjelp.no	http://www.norskfoerstehjelp.no
Norsk regnesentral (NR)	eHealth(ICT)	Norsk Regnesentral (Norwegian Computing Center, NR) is a private, independent, non-profit foundation established in 1952. NR carries out contract research and development projects in the areas of information and communication technology and applied statistical modeling.	wolfgang.leister@nr.no	https://www.nr.no/
Nortecno AS	eHealth(ICT)	We develop Prognobug, an alarm system for hospitals to fight Healthcare Associated Infections HAI and Anti Microbial Resistance AMR	egil.utheim@nortecno.com	http://www.nortecno.com
ODI Medical	Medicaldevice	ODI Medical is developing technology for bedside measurement and quantification of circulatory failure based on assessment of microcirculation. Our concept, the Oxygen Delivery Index™, may be used for a wide range of clinical applications such as monitoring patients on mechanical heart and lung machines, evaluation of toxicity of chemotherapy, early detection of evolving sepsis, monitoring of chronic wounds, and mass screening of conditions such as Ebola, bird flu or endemic meningitis. ODI Medical is commercializing its concepts on the foundation of 30 years research from its founder, Professor Knut Kvernebo, from The Oslo University Hospital (OUS), Oslo, Norway.	svein-erik.masoy@odimedical.com	http://www.odimedical.com
Oncoinvent AS				http://www.oncoinvent.com/

Onsagers	Serviceprovider	Onsagers – Linking IP to business	khs@onsagers.no	http://onsagers.no/
Oslo kommune Helseetaten	Municipality	Centre for Development of Institutional and Home Care Services, Nursing Home Agency, City of Oslo.	sff@sy.e.oslo.kommune.no	https://www.oslo.kommune.no/english/politics-and-administration/smart-oslo/projects/dementia-friendly-solutions/
OsloTech	InnovationCompany	OsloTech aims to contribute to economic growth and to be a catalyst for the start of new companies in Norway, focusing on the Oslo region. OsloTech runs the Oslo Science Park and develop workspaces and offices that makes innovation easier. Today more than 250 companies and 2500 people have their daily workplace in the park. Many of these have global ambitions in ICT, biotech, health and medtech, energy and environment. Many companies are born and raised here during the last 28 years, like Chipcon, Kelkoo, KappaBio Science, Zwipe, Affitech, Genomar, Taskon, AIMSTechnology, Vaccibody, Vitas, Ardoq and DragonBox etc.	marius@oslotech.no	http://www.oslotech.no/
Otivio	Medicaldevice	Otivio AS is a privately owned company based in Oslo, Norway. The company was founded in 2010 based on IP, prototypes and clinical data developed at University of Oslo. The core technology enables increased blood flow to the limbs of a patient. Otivio's main product, FlowOx™, is addressing peripheral arterial disease (PAD), which is a serious condition leading to pain, chronic wounds and in many cases amputation and mortality. The patient population is very large and increasing. There are limited adequate treatment options offered to the patients aside from surgical interventions. FlowOx™ is a non-invasive product intended for home use. Early long-term patient	am@otivio.com	http://www.otivio.com/

		testing documents increased blood flow, reduced pain and improved wound healing. FlowOx™ is CE marked. Otivio is ISO 13485 certified.		
Phoenix Solutions AS	Biotech		per.sontum@phoenixsolutions.no	http://www.phoenixsolutions.no
Photocure	Pharma	Photocure, headquartered in Oslo Norway, is a specialty pharmaceutical company focusing on urology. Based on its unique proprietary Photocure Technology® platform, Photocure is committed to developing and commercializing highly selective and minimally invasive solutions to improve health outcomes for patients worldwide. The company is listed on the Oslo Stock Exchange (OSE: PHO). Information about Photocure is available at www.photocure.com .	TG@photocure.no	https://www.photocure.com/
Picterus	Medicaldevice	Picterus has developed a brand new technology that makes it possible to diagnose jaundice using smartphones. The technology is patent-pending and can also be used to monitor and diagnose other conditions that give symptoms in skin.	gunnar@picterus.com	http://www.picterus.com
Polypure	Biotech	POLYPURE, the PEG designer	info@polypure.com	https://www.polypure.no
Preco		Preco AS is a private equity investment company in Norway. The most important investments have been made with Elkem in global supply chain enterprises, two in Norway, two in Holland and two in Asia. Preco is also open for “alternative investments”, i.a. Tom co-founded a disruptive web real-time-communication company out of		

		Singapore in 2012, Temasys Communications Pte. Ltd., now also working out of Palo Alto, and Ottawa.		
Prediktor Medical	Medical device	Prediktor Medical develops a non-invasive continuous glucose monitoring device for the diabetes market (NI CGM). The product is branded as BioMKR (“biomarker”), is worn on the arm and uses physical sensors and advanced algorithms for glucose estimation every 30 second. In comparison to other CGM’s, our does not penetrate the skin, and there are no consumables.	espen@prediktor.no	https://www.prediktormedical.com/
Prelud AS		Prelud er et helseteknologi selskap som ble stiftet i 2017 og er basert i Oslo. Prelud ønsker å hjelpe til med å fasilitere utviklingen av neste generasjons helse tjenester. Vi bruker data fra eksisterende sensor teknologi til å akkumulere data om vitale parametere for å forbedre den tradisjonelle monitorering av personer i sitt eget hjem. Vårt hovedmål er å gjenkjenne forebyggbare sykehus innleggelse.	fjolads@prelud.no	http://www.prelud.no
Prevas	Medical device	Prevas is a technical IT company that offers solutions, services and products to customers who are developing products with high IT content or who need to streamline or automate their operations.	info@prevas.no	http://www.prevas.no /
Qmed Consulting	Medical device	– Enabling better health from idea to revenue.	mor@qmed-consulting.com	http:// www.qmed-consulting.com
Redcord	Medical device	Redcord is the common thread between healthcare, fitness and sports performance on the wellness continuum.	redcord@redcord.com	http://www.redcord.no

RemovAid	Medicaldevice	RemovAid is an ISO13485 certified company that develops and manufactures sterile class IIa medical devices for subdermal implant removals.	marte@removaid.com	http://www.removaid.com/
Resani AS	Medicaldevice	The vision of our business is the development of an automated and accessible hand cleanser. Infections need to be prevented at their source, to reduce the number of hospital acquired infection (HAI) which in the worst cases can lead to death. Our user-friendly technology will in a few seconds sanitise the hands in a cost-effective, gentle and reliable manner.	pam@resani.no	http://www.resani.no
Respinor	Medicaldevice	Respinor is developing an ultrasound sensor for continuous monitoring of the diaphragm, the main breathing muscle. Our technology has a broad range of potential benefits and represents a technology platform for applications in critical care and in respiratory medicine.	nba@respinor.com	http://respinor.com/
Roche Diagnostics Norge AS	Diagnostics	Roche Norway is part of the International F. Hoffmann-La Roche Group that was founded in 1896 in Basel, Switzerland. Roche has grown from a small drug laboratory into one of the world's leading research-based healthcare companies and is known for many innovative contributions to medicine.	daniel.malarek@roche.com	http://www.roche.no
Roll'n'Code	eHealth(ICT), IT/SaaS, Serviceprovider	Roll'n'Code is a software development outsourcing company that offers full cycle development and support for entrepreneurs/startups and enterprises in the sphere of healthcare and innovative solutions.	hello@rollncode.com	http://rollncode.com
RollerSafe AS	Medicaldevice	RollerSafe AS has developed and patented RS Smart Brake Technology (TM) the most advanced multipurpose brake technology	morten@rollersafe.no	http://www.givemeabake.com

		for mobility, sports and kids safety. The compact electronic brake can be applied on any frame and wheel dimension. The brake is controlled by wireless remote, and requires very limited handgrip strength.		
RoomMate AS	ConnectedCare/DigitalHealth	RoomMate AS offers solutions and products for anonymous and effective supervision of residents in nursing homes, assisted living facilities and private homes. Alarms are automatically raised for a number of critical situations such as if a person falls.	rnj@roommate.no	https://roommate.no
RUUD Executive	Serviceprovider	RUUD Executive Search & Advisory AS is a Norwegian consultancy firm within Recruitment, Executive Search, Selection and Leadership Services established in August 2013. Our vision is to empower organizations and boards with outstanding leadership. RUUD Executive offers high quality and high standards of service within the Norwegian leadership services market.	ruud@ruud-executive.no	http://www.ruud-executive.no
Safety 365	PublicHealthService Provider	Time is essential in an emergency situation. Our goal is to reduce time to in average 1/3 of the time one use today. We will reach this goal with the use of wearable smart devices, effective apps, certified emergency helpers and emergency drones.	baw@safety365.life	http://www.safety365.life
SANDS	Serviceprovider	We are one of Norway's largest and most well reputed commercial law firms, with 140 lawyers and a total of 200 employees. As your professional advisor, our aim is to create opportunities for you and to add value to your business. The lawyers in SANDS (Steenstrup Stordrange) have excellent legal minds and our strength is combining this with commercial insight. We are a full service law firm, providing corporate advisory services, transactions/M&A expertise and	sn@sands.no	https://www.sands.no/nb-NO

		assistance in resolving disputes, including litigation. Our offices cover all regions of Norway.		
Sci Group	InnovationCompany	Sci Group AS is a privately owned company in Oslo. We have developed a new chemical free freezing technology for sensitive biological material, such as mammalian cells for scientific and clinical use,	jj@sci-group.net	
Science Shaped	Serviceprovider	Science Shaped is a graphic service based on biological insight.	ellen@scienceshaped.com	http://scienceshaped.com
Seald as	Biotech	Seald AS is a biotech company developing an innovative personalized approach to treating bile duct cancer. Bile duct cancer is a rare, but very deadly form of cancer. The five-year survival rate is two to five per cent, the mean life expectancy on standard chemotherapy is only 11,5 months. A small number of patients are eligible for surgery, and more than 50 per cent of these relaps.	seald@seald.no	http://seald.no
Semcon	Serviceprovider	Semcon is an international technology company that develops products based on human needs and behaviours. We strengthen our customers' competitiveness by always starting from the end user, because the person who knows most about the user's needs creates the best products and the clearest benefits to humans. Semcon collaborates mainly with companies in the automotive, industry, energy and life science sectors. With more than 2000 specialised employees, Semcon has the ability to take care of the entire product development cycle, from strategy and technology development to design and product information. Semcon was founded in Sweden in 1980 and has offices in over 30 locations in eight different countries.	Tormod.holmslet@ebnett.no	http://www.semcon.no

		In 2016, the Group reported annual sales of SEK 1.8 billion. Read more on semcon.com		
Sensio	ConnectedCare/DigitalHealth	Sensio is a leading supplier of Home Automation and Welfare Technology in Norway. Daughter company Safemate is delivering Care at Home solutions in the Nordics and through partners in EMEA.		https://sensio.no/
Sensocure	Medicaldevice	Sensocure AS develops and manufactures biomedical sensors for healthcare, and aim to become the market leader in postoperative monitoring of internal organs.	post@sensocure.no	http://www.sensocure.no
Shane West Consulting	Serviceprovider	Customer and market insight is our passion and draws on more than 15 years of delivering actionable customer and market insights to global healthcare teams. Highly skilled and influential market research services experienced in addressing complex business challenges through cost effective, robust and insightful customer research programs. A clear thinking consulting service with a strategic mindset capable of succinctly communicating complex concepts across all levels of an organization.		https://www.linkedin.com/in/shane-west-insight/
Siemens Healthcare	ConnectedCare/DigitalHealth, Diagnostics, eHealth(ICT), Medicaldevice	Siemens Healthineers is the separately managed healthcare business of Siemens AG enabling healthcare providers worldwide to meet their current challenges and to excel in their respective environments. A leader in medical technology, Siemens Healthineers is constantly innovating its portfolio of products and services in its core areas of diagnostic and therapeutic imaging and in laboratory diagnostics and molecular medicine. Siemens Healthineers is also actively developing its digital health services and enterprise services. To help customers succeed in today's dynamic healthcare marketplace, Siemens Healthineers is championing new business	olav.aasgaard@siemens-healthineers.com	https://www.healthcare.siemens.com/

		models that maximize opportunity and minimize risk for healthcare providers. Further information is available at www.siemens.com/healthineers		
Simlrs AS	eHealth(ICT)	Simlrs AS ble startet opp i 2016, basert på et selskap fra 2014.	per@simlrs.com	http://www.simlrs.com/MedicAirbag
Simpro AS	Medicaldevice	Simpro is one of the leading EMS manufacturer within the field of high-tech electronic and electro-mechanical components for harsh environments.	Simpro@simpro.no	
Sintef	ConnectedCare/DigitalHealth, Diagnostics, eHealth(ICT), Medicaldevice	SINTEF is the largest independent research organisation in Scandinavia. Our mission is to develop knowledge and solutions that help meet societal challenges and create value and innovation. We create novel and innovative solutions for the health and care services, focusing on the needs of users, next of kin and employees. Through research and innovation projects we develop knowledge and solutions in close collaboration with municipalities, health institutions and companies and thus make significant contributions to service and product development.	Randi.E.Reinertsen@sintef.no	http://www.sintef.no/
Sirona Health Solutions		Sirona Health Solutions er et skandinavisk konsultentselskap som arbeider for å skape bedre helse, behandling og omsorg. Den beste helsetjenesten er den det ikke er behov for, derfor arbeider vi først og fremst med proaktive og forebyggende løsninger.	info@sironagroup.se	http://www.sironagroup.se
Skannex	Medicaldevice	Point of Care (PoC) testing, also called rapid testing, is an important capability to improve human diagnostics and save costs. Rapid	siri@skannex.com	http://www.skannex.com/

		testing is also important to secure food safety from farm to table. Skannex offers automated reading of Rapid Tests used for human diagnostics, drug testing, veterinary testing and food/feed testing.		
Skiwo AS – TikkTalk	InnovationCompany , IT/Saas, PublicHealthService Provider, Serviceprovider	TikkTalk is an online marketplace connecting businesses, governments and consumers with interpreters.	gautam@tikktalk.com	http://www.tikktalk.com
Skuld Insight	Serviceprovider	Skuld Insight leverages extensive global healthcare and medical device experience to deliver actionable customer and market insights to support new product development.	shane@shanewestconsulting.com	https://www.linkedin.com/in/shane-west-insight/
SoftOx Solutions AS	Medicaldevice	SoftOx Solutions AS is a Scandinavian medtech company, founded in 2012. After years of research and product development, SoftOx has developed a non-toxic and highly efficient antiseptic technology which eradicates and prevents biofilm infections. Biofilm is found in more than 80 percent of chronic wounds and prevents wound healing.	post@soft-ox.com	http://www.soft-ox.com
Sonitor	ConnectedCare/DigitalHealth	Sonitor Technologies is the leading developer and provider of unique, ultrasound technology that locates people and items in real-time with reliable, high definition accuracy within complex indoor environments. With R&D and operations headquarters in Oslo, Norway and Sales, Support and Marketing headquarters in Stamford, CT USA, our mission is to make life better by accelerating insights to action to enhance and protect life health and property.	ap@sonitor.com	http://www.sonitor.com/

Sopra Steria	eHealth(ICT)	Sopra Steria, a European leader in digital transformation, provides one of the most comprehensive portfolios of end-to-end service offerings on the market: consulting, systems integration, software development, infrastructure management and business process services. Sopra Steria is trusted by leading private and public-sector organisations to deliver successful transformation programmes that address their most complex and critical business challenges. Combining high quality and performance services, added value and innovation, Sopra Steria enables its clients to make the best use of digital technology. With 40,000 employees in more than 20 countries, Sopra Steria had revenue of €3.7 billion in 2016.	gunnar.morne@sopra-steria.com	https://www.sopra-steria.no/
Sortie AS	Digitalhealth, eHealth(ICT)	Sortie AS was established in 2017 and is located in Asker, Norway. The company offers an online service related to all aspects of the final phase of life, addressing topics such as health, care, law, economics and excavation. Sortie offers functionality for sharing important information within families and articles and guides on topics related to the last phase of life.	kristin@sortie.no	http://www.sortie.io
SpinChip	Medicaldevice	SpinChip Diagnostics (www.spinchip.no) is developing a game changing and proprietary platform for in vitro diagnostics point of care analyses. The platform will make it possible to perform a broader range of analyses using one platform and to transfer analyses from central laboratories to point of care without loss in quality. All analyses are performed within a few minutes based on a fraction of a droplet of blood and at a unit cost significantly lower than other point of care platforms. Our initial focus is on rapid cardiac markers with troponin-i (a marker for myocardial infarction) as the pilot application.	info@spinchip.no	https://www.spinchip.no/

Sunnaas Sykehus	ConnectedCare/DigitalHealth	Sunnaas Rehabilitation Hospital is Norway's largest specialist hospital in the field of physical medicine and rehabilitation. The hospital provides multidisciplinary rehabilitation for patients with complex functional impairment following illness or injury. The hospital provides services at both regional and national levels, and delivers services to approximately 7500 patients a year (3500 inpatients/4000 outpatients/policlinical services).	innovasjon@sunnaas.no	
SunSense AS	Digitalhealth, eHealth(ICT)	SunSense is a Norwegian company launching a product range featuring the world's smallest and most accurate UV tracking sensors for digitally integrated UV tracker wearables.	vm@sunsense.no	http://www.getsunsense.com
SweetTech				
Sykehuset Innlandet HF	PublicHealthService Provider	Sykehuset Innlandet har ansvaret for all offentlig spesialisthelsetjeneste innenfor somatikk, psykisk helsevern, tverrfaglig spesialisert rusbehandling og prehospitaltjenester for ca 400 000 innbyggere i Hedmark og Oppland. Foretaket har virksomhet på 40 steder. Helseforetaket har nylig gjennomført idéfasen for ny sykehusstruktur med et samlet tilbud innenfor somatikk, psykisk helsevern og tverrfaglig spesialisert rusbehandling i et stort akuttsykehus «Mjøssykehuset». Siden vår virksomhet er i et omland som i utstrekning er større enn Danmark må vi derfor prioritere 1) arbeidet med å etablere desentraliserte spesialisthelsetjenester, 2) videreutvikle prehospitaltjenester og 3) øke samhandling med primærhelsetjenesten.	ingeborg.hartz@sykehuset-innlandet.no	http://www.sykehuset-innlandet.no
Sykehuset Østfold	PublicHealthService Provider	Østfold Hospital Trust is located in the southeastern part of Norway and serves 300 000 patients in the region. The hospital has about 5 000 employees which includes both medical and administrative	Ingunn.olsen@so-hf.no	https://sykehuset-ostfold.no/

		personell. The hospital supplies full range of health services of diagnostics, treatment and rehabilitation.		
Takeda	Pharma	As the largest pharmaceutical company in Japan and a leader in the global industry, Takeda's mission is to strive toward better health for patients worldwide through leading innovation in medicine. Takeda has a commercial presence covering more than 70 countries, with particular strength in Asia, North America, Europe and fast-growing emerging markets including Latin America, Russia-CIS and China. Takeda's pharmaceutical products are marketed in around 100 countries worldwide, including partnerships (marketing alliance partners).	Thomas.Mogan@takeda.com	http://www.takeda.no/
Tandberg Innovation	Serviceprovider	We help you all the way from idea to product.	eoh@tandbergs.no	https://tandbergs.no/
Telenor	eHealth(ICT)	Telenor is one of the world's major mobile operators, keeping customers connected in 13 markets across Scandinavia, Central Eastern Europe, and Asia.	Alanna.solberg@telenor.com	
Tellu IoT AS	ConnectedCare/DigitalHealth	Tellu IoT AS provides services on TelluCloud IoT application platform, which is used to collect, process and forward health data from medical devices and welfare technology equipment. The company is actively working with partners to create the most reliable and innovative solutions to satisfy the end-user requirements. Tellu provides services both nationally and internationally and the headquarters are located in Asker just outside Oslo.	ceo@tellu.no	http://tellucloud.no

Thula	eHealth(ICT)	At Thula we have a vision of building innovative solutions that help our customers cut costs while also providing outstanding healthcare. We are an Iceland based software company with special domain expertise and broad experience in the field of healthcare informatics and integrations.	gardar@thula.is	http://thula.is
Tieto	eHealth(ICT)	Tieto is the Nordic region's leading provider of IT solutions for the health and welfare sector.	unni.kvisvik@tieto.com	https://www.tieto.no/
TOPRO Industri AS	Medical device	TOPRO Industri AS is a leading developer, producer and supplier of rollators, walkers and other assistive devices. The company exports to more than 20 countries, including Germany, the UK, Japan and Australia. TOPRO Industri AS is a part of TOPRO AS, which is the largest commercial enterprise in Gjøvik municipality. In addition to the headquarters in Gjøvik, TOPRO Industri has established fully owned sales companies in Germany and the UK.	kjersti.balke.hveem@topro.no	http://www.topro.no
VAR Healthcare	Medical device	VAR is a technological tool which consists of nearly 400 procedures with connecting knowledge base and knowledge tests.	ann.kristin.roteward@capelendamm.no	http://varhealthcare.no
Vestfold Audio AS	Connected Care/Digital Health	Vestfold Audio AS was founded in 1985, and we have over the years developed and manufactured products and solutions helping thousands of people in their daily activities. Today we are the leading supplier of voice amplification systems, aids for the hearing impaired, alerting systems for homes and work places, and welfare technology for assistive living that also will include next of kind and the health care services. We strive to deliver welfare technology of the highest quality, which are easy to use and fulfils the needs and requirements of the users. Vestfold Audio AS reside in our own tailored building in Sandefjord, where we develop and manufacture our own products.	ae.loberg@vestfoldaudio.no	http://www.vestfoldaudio.no/

		Within the technical department our engineers develop both hardware and software, and they are always available for customer support. We also do customized solutions for the individual user with special needs. Vestfold Audio AS has an ISO9001 quality system in place.		
Vestre Viken Helseforetak	PublicHealthService Provider	Vestre Viken helseforetak består av somatisk virksomhet ved Bærum sykehus, Drammen sykehus, Kongsberg sykehus, Ringerike sykehus og Hallingdal sjukestugu. Vi har psykiatriske sykehusavdelinger ved Blakstad og fem distriktpsykiatriske sentre (DPS-er), tilbud innen barne- og ungdomspsykiatri samt tverrfaglig spesialisert rus- og avhengighetsbehandling.	kristine.sahlberg@vestreviken.no	https://vestreviken.no/
Videonor	ConnectedCare/DigitalHealth	At Videonor, our focus has always been 'people first'. We believe that face-to-face communication is integral for nurturing strong business relationships, both internally and externally.	jorn.mikalsen@videonor.com	https://videonor.com/
VingMed AS	Medicaldevice	Vingmed AS supplies advanced medical equipment and consumables to Norwegian hospitals. Together with our sister companies in Sweden, Denmark and Finland, the Vingmed Group is one of the Nordic region's largest cardiology, endoscopy, intensive, surgery and dialysis distributors.	info@vingmed-as.no	http://vingmed-as.no/
Vitas AS		Vitas er et GMP-sertifisert kjemisk analysekontraktslaboratorium med nær 25 års erfaring med å tilby en høykvalitativ, tilpasset kromatografisk analytisk tjeneste basert på banebrytende kunnskap og teknologi.	teg@vitas.no	http://www.vitas.no

Vitensenteret helse og teknologi / The Science Centre Health and Technology	R&D/Educational facility	The aim of the Science Centre Health and Technology is to develop future solutions for the health and care sector. The centre is owned by the Faculty of Health and Social Sciences and is located in Drammen. Researchers, users and developers, students, teachers and practitioners, municipalities, health enterprises, organizations and businesses meet in constantly transforming constellations in the Science Centre. This partnership develops research projects, innovation and implementation strategies and new forms of education. The Science Centre Health and Technology has unique facilities for simulation training and testing of new technology. The research is user-driven and interdisciplinary, and is published at a high international level.	Vitensenteret@usn.no	http://www.usn.no/vitensenteret
Wheel.me	ConnectedCare/Digital Health	We help people improve the way they live and work by enabling everything indoors to move effortlessly on Smart Wheels:	atle@gmail.com	http://wheel.me
Wikborg Rein	Law and IPR	Wikborg Rein is an international law firm with over 230 lawyers located in Oslo, Bergen, London, Singapore and Shanghai. Our unique and long-standing presence overseas enables us to offer our clients the benefit of our extensive international expertise. Headquartered in Oslo, Norway, we offer a full range of legal services to our domestic and international clients	wikborgrein@wr.no	http://www.wr.no
Zacco	Service provider	Zacco is a modern, consultancy driven company with a 360° perspective on Intellectual Property: From patent filing, trademark registration and design protection to dispute resolution, information security and portfolio management.	thor.mosaker@zacco.com	

Zebra Technologies	ConnectedCare/DigitalHealth, InnovationCompany, IT/Saas, Serviceprovider	With the unparalleled visibility Zebra (NASDAQ: ZBRA) provides, enterprises become as smart and connected as the world we live in. Real-time information – gleaned from visionary solutions including hardware, software and services – gives organizations the competitive edge they need to simplify operations, know more about their businesses and customers, and empower their mobile workers to succeed in today’s data-centric world.	iolstorn@zebra.com	http://www.zebra.com
Zyberia AS	ConnectedCare/DigitalHealth, Digitalhealth, eHealth(ICT), InnovationCompany	At Zyberia we are devoted to developing digital intelligent systems enhancing quality of care and cost-effectiveness in health service ecosystem.	jcyj@zyberia.no	http://www.zyberia.org