Fiscal Effects of Community-Based Outreach Health Concepts Using the Example of Community Nursing in Austria

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Abstract

Introduction: Community Nursing (CN) was piloted in Austria through the federal government programme, with pilot projects running from 2022 to 2024. Managed by the Austrian Federal Ministry of Social Affairs, Health, Care and Consumer Protection (BMSGPK) and the Austrian National Public Health Institute (GÖG), 117 projects with 273 community nurses were implemented nationwide. CN aimed to provide low-threshold, community-based health and care support primarily to older adults, caregivers, and relatives, serving 3,000–5,000 residents per full-time nurse.
Method: As part of the evaluation of the pilot projects, the fiscal effects on the healthcare system were examined. A multi-method approach analyzed costs of CN, changes in the use of health and care services, and its fiscal effects. Moreover, costs of inpatient and outpatient care were compared to discuss potential long-term savings.
Results: In the short-term, CN increased public expenditure due to greater uptake of medical, therapeutic, and care and support services. From the long-term perspective, the program hypothetically yields potential savings, if supported individuals could remain at home longer, reducing reliance on institutional care facilities.
Discussion: While initial costs rose, CN demonstrates potential for future health system efficiency and cost containment. But attribution of cost savings exclusively to CN remains complex due to overlapping interventions and data limitations. Further longitudinal, controlled studies are recommended to verify fiscal effects more robustly.

Keywords: community nursing, economic evaluation, public health care, fiscal effects

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Introduction

The piloting of Community Nursing (CN) in Austria was a central initiative of the government programme 2020–2024, designed to strengthen primary health and care services with a focus on prevention and health promotion. As part of the Austrian Recovery and Resilience Plan 2020–2026 (ARP) and supported and funded by Next Generation EU (NGEU), this pilot program aimed to address challenges in care through low-threshold, and community-based interventions. It was managed by the Federal Ministry of Social Affairs, Health, Care and Consumer Protection (in German *Bundesministerium für Arbeit, Soziales, Gesundheit, Pflege und Konsumentenschutz*; BMSGPK) in partnership with the Austrian National Public Health Institute (in German *Gesundheit Österreich GmbH*; GÖG), which oversaw both the implementation and the evaluation of the projects. At the end of 2024, a total of 117 CN projects employing 273 qualified nurses were launched across all nine provinces in Austria.

Community Nurses play a central role in delivering services directly within local communities. They focus on strengthening health literacy, delaying the need for care, and helping individuals to stay in their own homes for as long as possible. Each Community Nurse serves 3,000 to 5,000 inhabitants, providing support preferably to older adults with and without care needs, as well as informal caregivers and/or family members.

The CN approach combines home visits, counseling and support, network-building, and targeted health promotion measures at individual, family, and community levels. A key ambition was to better connect existing health and social care services by building or reinforcing local and cross-sectoral networks. The pilot made strides toward these objectives, although integrating CN consistently across Austria's diverse provincial governmental settings remained a challenge.

Against this backdrop, this article examines the extent to which CN can have positive fiscal effects from the public health sector's perspective. These effects could be realized by promoting healthier lifestyles, reducing care needs, and enabling people to live independently for longer rather than moving into residential care.

To adequately answer these questions, a literature review was conducted and the costs of CN were examined. Primary data from users (including questionnaire surveys) and secondary data (including Statistics Austria) were also evaluated. Finally, the limitations are discussed and an outlook is provided.

Literature Review

The literature search was conducted systematically across multiple international and national scientific databases, including Springer, Thieme, Wiley, Science Direct, PubMed, Google Scholar, ResearchGate, and the Cochrane Library, as well as in Austrian university and university of applied sciences libraries. This was further supplemented with grey literature and project-specific materials. In total, 59 relevant journal articles and two books dealing with the economic evaluation of CN or models of primary care and prevention were analyzed in depth. The reviewed literature comes mainly from the United Kingdom, the United States, Australia, Canada, and New Zealand, with additional contributions from Singapore, China, South Africa, and a range of European countries. Notably, substantial differences in health systems, nursing practices, and target populations are found across these studies.

The literature review reveals that health-related outcomes of CN are frequently positive. Studies often report modest improvements in mortality, blood pressure, health-related quality of life, and satisfaction (Laurant et al., 2018). However, the evidence supporting these findings is typically moderate to low. In contrast, no significant differences are consistently found regarding adverse effects, hospital length of stay, or the frequency of outpatient consultations (Lukewich et al., 2022; Xu et al., 2022). Several works demonstrate that CN can lead to a reduction in emergency department visits and unplanned hospital admissions, especially among older adults with chronic illnesses (Buzath & Zechmeister-Koss, 2023; Xu et al., 2022). For other categories of health and social services, no consistently significant effects are observed. The impact of CN on nursing home admissions, in particular, varies widely; some studies observe delays or reductions, while others report no effect or even higher admission rates (Buzath & Zechmeister-Koss, 2023).

From an economic perspective, selected studies indicate cost-saving potential through early CN interventions for specific indications – yielding savings of several hundred to a few thousand euros or pounds per person. These savings are especially apparent in the areas of home care, rehabilitation, or fall prevention (Evers et al., 2019). Conversely, other analyses point to higher costs associated with more complex client groups or particular diseases, such as Parkinson's disease (Tappenden et al., 2012). The overall trend in the current literature suggests that while initial costs rise due to increased use of health and nursing services, long-term savings may be realized if institutionalization is delayed or prevented. Overall, cost-effectiveness of CN has been demonstrated for certain patient groups, whereas prevention and health promotion measures are generally linked with increased costs (Buzath & Zechmeister-Koss, 2023).

There remains a strong need for additional research on standardized, context-sensitive economic evaluations of CN. The impact of specific factors such as the level of engagement of nursing staff and clients, or the regional context of care delivery makes direct comparison of international findings challenging and complicates the transferability of results to broad implementation in Austria (Buzath & Zechmeister-Koss, 2023; Lopatina et al., 2017).

In summary, the international state of research points to a generally positive influence of CN on health status and quality of life. However, the effects on the use of other health and social care services, and the attendant costs, remain heterogeneous. Against this backdrop, the empirical and model-based analyses of the Austrian CN pilot projects presented in the following sections are especially relevant as a source of information and for the further development of the national care landscape.

Methodology

This study applied a mixed-methods approach to evaluate the financial and service-utilization impacts of the Austrian Community Nursing (CN) pilot projects. The research was carried out as a pre-post observational study, with data drawn from all pilot regions spanning Austria's diverse provincial healthcare landscape, as well as geographical and demographic situation. Such diversity ensured broad representativeness but posed constraints in relation to establishing a control group and causality.

The evaluation of fiscal effects refers to the year 2023 as an annual data basis is advantageous in order to enable comparison with secondary statistical data. Furthermore, the CN projects

were only set up in the course of 2022, and at the time of the analysis, data for the entire calendar year 2024 was not available; Against this background, 2023 was chosen as the period under review. Furthermore, it should be noted that all projects that were active for less than three months in 2023 and did not focus on older people (e.g., "school nurses") were excluded from the subsequent analysis. This led to the inclusion of 115 pilot projects in the evaluation. A total of 165 Com-munity Nurses were employed in full-time equivalents (FTEs) in these evaluated projects, resulting in an average of 1.43 FTEs per CN project.

Data for the analysis were drawn from a combination of primary and secondary sources. (1) A survey was administered to service recipients (predominantly elderly people and/or informal caregivers; in German *Zielgruppen-Fragebogen*; ZG-FB), in which individuals retrospectively reported their use of medical, therapeutic, care and support services as well as informal care – before and after participation in the CN pilot projects; a total of 698 data sets were generated from paper questionnaires completed. (2) Information on the costs of the pilot projects was obtained directly from contracting authorities GÖG and BMSGPK as well as the Austrian Health Promotion Fund (in German *Fonds Gesundes Österreich*; FGÖ). (3) To facilitate cost calculations on health and care services used, administrative data from the Austrian Health Insurance Fund (in German *Österreichische Gesundheitskasse*; ÖGK), covering more than 80 % of the national population, provided standard tariffs for healthcare services (ÖGK, 2024a). (4) Additionally, expenditure statistics on care from Statistics Austria were used.

The costs associated with CN provision itself were determined using expenditure figures from 2023, with calculations adjusted both by caseload ratio and by the proportion of the Austrian population aged 65 and above—reflecting the primary target group for the CN interventions.

For the financial impact assessment, the mean changes in the use of medical, therapeutic and care and support services from before to after were multiplied by ÖGK's official cost per unit tariffs. Where national fees varied, ÖGK's generally lower rates were consistently used, providing conservative estimates for public sector costs or savings. Total annual change in costs per person was calculated as the sum of changes in usage and its financial effects across all services utilized.

Descriptive statistics, including means and standard deviations, were reported for all key measures at both reference points t_0 and t_1. The statistical significance of mean differences was assessed using paired samples t-tests, while changes in proportions—particularly in care allowance levels—were examined using chi-squared or z-tests for proportions as appropriate, with standardized reporting of significance thresholds.

To analyze potential long-term cost savings over different care trajectories, scenario modelling was undertaken. Estimated net expenditure per person for outpatient versus inpatient care scenarios was modelled across three different time frames: three, six, and twelve months. These analyses incorporated national mean values as well as minimum and maximum per-person expenditure differing by province. The calculated savings included the costs associated with providing CN services, for a net impact estimate.

Despite a robust dataset and modelling approach, it is important to note several limitations. The study did not incorporate a control group and therefore cannot rule out confounding influences from external policy changes occurring during the pilot period or variations in

regional healthcare organization. Moreover, the use of ÖGK tariffs may understate the fiscal impact in national contexts where other insurers pay higher rates. Finally, the variability in healthcare infrastructure and expenditure between Austria's provinces may limit the generalizability of the findings.

Results

Costs of Community Nursing

The European Union (EU) financed Community Nursing (CN) pilot projects through the Next Generation EU (NGEU) funding programme. The funding amount for the implementation of the 115 CN pilot projects under review totaled approximately 49,390,046 € for the project years 2022 to 2024. This means that an average amount of 16,463,349 € was available per year.

The total funding amount for each project is divided into different cost categories, i.e., "personnel costs", "material expenses", "overhead costs", and "e-mobility". The personnel costs category is intended exclusively for Community Nurses. When submitting applications each project had the option of billing one third of the cost category as material expenses as optional lump sum. This optional lump sum was limited to certain expenses (e.g., travel expenses, electricity costs). The overhead costs category is intended for ongoing operating expenses (e.g., office rent, payroll accounting), and the e-mobility cost category covers the costs for cars or bicycles.

Table 1
Funding Amount per Cost Category, Total, per Year and per FTE

Cost type	Total funding (all project years)	Average funding (per year)	Average per FTE (per year)
Personnel costs	38,113,034.90 €	12,704,344.97 €	76,996.03 €
Material expenses	5,387,602.39 €	1,795,867.46 €	10,884.05 €
Overhead costs	3,699,714.05 €	1,233,238.02 €	7,474.17 €
E-mobility	2,189,694.41 €	729,898.14 €	4,423.63 €
Total	49,390,045.75 €	16,463,348.58 €	99,777.87 €

Note. own calculations are based on the number of projects/FTEs in 2023. *Source:* GÖG, FGÖ.

Table 1 summarizes the total funds approved for the 115 evaluated projects: personnel costs of around 38,113,035 €, material expenses (including the optional lump sum) of around 5,387,602 €, overhead costs of around 3,699,714 €, and an e-mobility subsidy amount of around 2,189,694 €. This results in an average total funding amount of just under 99,778 € per FTE (in 2023), broken down as follows: around 76,996 € for personnel costs, around 10,884 € for material expenses (including the optional lump sum), just under 7,474 € for the overhead flat rate, and around 4,424 € per FTE on average for e-mobility.

Table 2

Supporting Costs per Cost Type, per Year

Cost type	Personnel costs	Material expenses
Networking activities	141,235.88 €	40,159.89 €
Coordination and project management	63,327.00 €	27,058.67 €
Training (e.g., webinars)	55,524.75 €	20,968.51 €
Monitoring and evaluation	14,884.88 €	146,940.08 €
Public relations	n.A. €	311,111.00 €
Total	274.972,50 €	546.238,15 €

Note. own calculations are based on planned costs of the BMSGPK. *Source:* GÖG, FGÖ.

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Short-Term Financial Effects of Changes in the Use of Medical, Therapeutic and Care and Support Services

This section provides an annual estimate of the potential fiscal short-term effects on the public sector of the significant changes in health and care service use identified due to the intervention. A highly significant difference in the use of medical services before (t_0) and after (t_1) the CN intervention was found in visits to general practitioners (in practice; p-value = 0.002), with a decrease in service use from an average of 1.29 to 1.10 visits per month. However, no significant difference was found in home visits by general practitioners, visits to specialists, outpatient clinic visits, hospital stays without overnight stays, hospital stays with overnight stays, or ambulance and rescue services.

Significant differences in the use of therapeutic services before and after the CN intervention were observed in physiotherapy (p-value < 0.001) and speech therapy (p-value = 0.002). The use of physiotherapy services had increased (t0 = 0.53; t1 = 0.80), as had the use of speech therapy services (t0 = 0.03; t1 = 0.06. For occupational therapy and psychotherapy no significant change in service use was found.

A highly significant difference in the use of care and support services before and after CN intervention can be seen in home and support services (p-value < 0.001), mobile care and support (p-value < 0.001), and 24-hour care (p-value < 0.001). The number of hours increased significantly for both home support services (t0 = 0.47, t1 = 1.48) and mobile care and support services (t0 = 0.44, t1 = 1.69), as did the number of days per week for 24-hour care services (t0 = 0.60, t1 = 2.28). There was no significant difference in care in an inpatient setting (in a hospital or nursing home). As for informal care and support services, i.e., care and support provided by relatives and friends, the statistical tests did not yield any significant results.

To calculate the fiscal effects of the change in service use, the costs of each service were re-searched. Because of the provincial governmental structures and the large number of public national health insurance funds in Austria, this step was difficult. Since 7.6 million people, or more than 80.0 % of all people living in Austria (ÖGK, 2024a), are insured by the Austrian Health Insurance Fund (ÖGK), this fee schedule was used (details on the calculations can be found in Aigner-Walder et al. (2024) in German). In this situation, it is important to know that the prices for registered doctors and therapists of this health insurance funds are, in most cases, lower than the prices of other national health insurance funds. Consequently, if there's a big drop in the services caused by CN, the calculations show the lowest possible savings. On the other hand, if there is more use, the costs will probably be underestimated.

Care and support service data from Statistics Austria (in German *Pflegedienstleistungsstatistik*) was used for outpatient and inpatient care and support services, using net expenditures, i.e., the gross expenditures minus contributions and substitutes as well as other revenues (Statistics Austria, 2024a, 2024b, 2024c). 24-hour care is not included in the respective data sets. This is why information on the relevant costs is taken from reports published by the Federal Ministry of Social Affairs, Health, Care and Consumer Protection (in German *Pflegevorsorgebericht 2022*; BMSGPK, 2023). In this regard, it should be noted that the costs presented here are purely public costs and that in many cases private co-financing takes place.

As shown in Table 3, the additional use of services (measured in natural units like hours per week) results in higher costs for the public sector and national health insurance companies per year. This increase in costs is particularly striking in care and support services, which include mobile care and support (+2,065.70 € per person), home support services (+1,667.14 € per person) and 24-hour care (+1,655.61 € per person). In contrast, the increase in costs for thera-peutic services is comparatively low (+92.51 € for speech therapy and +832.61 € for physio-therapy per person) and, with regard to medical services, a reduction in costs is estimated for general practitioner's consultations (in practice) due to lower utilization (-18.29 € person).

Table 3
Effects of Changes in Use of Medical, Therapeutic, Care and Support Services, per Person

Type of service	Change in mean (t_0 to t_1)	p-value	Cost per unit	Financial change (per year)
General practitioners (in practice) (number per month)	-0.19	0.002**	23.13 € 8.02 €	-18.29 €
Physiotherapy (hours per week)	+0.27	< 0.001***	59.10 €	832.61 €
Speech therapy (hours per week)	+0.03	0.002**	59.10 €	92.51 €
Home support services (hours per week)	+1.01	< 0.001***	31.63 €	1,667.14 €
Mobile care and support (hours per week)	+1.25	< 0.001***	31.67 €	2,065.70 €
24-hour care (days per week)	+1.68	< 0.001***	18.89 €	1,655.61 €

Note. significance: * 5 % ** 1 % *** 0.1 % level, own calculations. *Source.* ZG-FB, ÖGK (2024b), ÖGK (2024c), ÖGK (2024d), Statistics Austria (2024a), Statistics Austria (2024b), BMSGPK (2023).

To sum up, the above estimates show that the activities and consultations induced by the Community Nurses will lead to extra costs of 6,295.28 € per person each year, assuming minimal costs to the public sector and national health insurance funds. However, it should be emphasized that the survey recorded changes in the use of services after utilization of the CN service; this does not mean that corresponding usage patterns must necessarily continue in the middle or long term.[1] Further longitudinal research combined with a control group would be needed to verify fiscal effects more robustly.

Hypothetical Discussion of Long-Term Fiscal Effects

This section discusses potential long-term financial effects for the public sector caused by CN intervention. The calculations compare potential savings resulting from a longer stay in one's own home enabled by the intervention taking also into regard associated costs of CN services. The hypothesis that CN has a positive effect on longer stays in one's own home cannot be tested within the scope of the project due to the limited implementation period. For this reason, the following cost and savings estimates are solely hypothetical.

Within this theoretical framework, the subsequent two care scenarios will be examined: (1) Use of mobile care and nursing services (including CN services) at home, (2) Use of inpatient care and nursing services. The calculations are based on average data from official statistics, and the savings are extrapolated to a three-month, six-month, and one-year period. The analysis considers the net expenditure per person receiving care in Austria in 2022, depending on the type of care received, i.e., outpatient care (in German *Mobile Pflege- und Betreuungsdienste*; Statistik Austria, 2024b) and inpatient care (in German *Stationäre Pflege- und Betreuungsdienste*; Statistik Austria, 2024d). As costs vary throughout Austria due to differing provincial health and care structures, the average cost saving (medium), as well as the federal state in which the lowest (minimum) and highest (maximum) levels of savings per person receiving care/support are recorded is also indicated.

The annual total costs of CN per FTE are 104,755 € (2023; see chapter above). This results in costs of 20.95 € to 34.92 € per capita based on the total population and considering the range of nurse-to-inhabitant ratio of 3,000 to 5,000. If these per capita expenditures are allocated exclusively to the main target group of CN (aged 65 and over) accounting for 19.0% of the Austrian population (Statistics Austria, 2024e), per capita spending range from 110.27 € to 183.78 €. The maximum value is used for the calculations.

The estimates in Table 4 show that if people stayed at home with mobile care for three months instead of staying in inpatient care (Δ 3), the public sector could save between 2,406 € and 7,636 € for each care recipient. Over a period of one year (Δ 12), this would result in hypothetical savings ranging from 9,626 € to 30,545 €, depending on the respective province; the mean estimate is 19,559 €.

The calculations only consider the cost of care and support services. The cost of medical or therapeutic services is not included.

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[1] For example, an increase in physiotherapy services at the time of the survey does not necessarily mean that this applies to the entire year.

Table 4
Hypothetical Long-Term Savings per Person, 2022

Net expenditure	Mobile	Inpatient	Estimated savings (incl. costs of CN; in months)		
			Δ 3	Δ 6	Δ 12
Minimum	3,263 €	13,072 €	2,406 €	4,813 €	9,626 €
Mean (Austria)	3,331 €	23,074 €	4,890 €	9,780 €	19,559 €
Maximum	5,803 €	36,531 €	7,636 €	15,273 €	30,545 €

Note. own calculations and presentation. *Source:* Statistics Austria, 2024b, Statistics Austria, 2024d.

Discussion and Conclusion

This evaluation of the Austrian Community Nursing (CN) pilot projects provides initial evidence that such services influence patterns of health and care utilization, with measurable financial implications for the public sector. The analysis suggests that participation in CN was associated with increased use of certain medical, therapeutic and care services. While some of these changes indicate additional short-term costs, particularly for mobile and 24-hour care, they may also reflect a shift towards earlier, preventive, and more personalized interventions compared to later-stage, institution-based care.

From a broader health system perspective, these findings can be interpreted as a re-balancing of resources from inpatient to community-based settings, which is aligned with international policy goals of fostering ageing in place and maintaining autonomy for as long as possible. The scenario modelling demonstrates that potential cost savings could emerge in the long-run—particularly if increased CN service use helps delay or prevent transitions to costly inpatient care. This underscores the importance of viewing CN not only in terms of immediate expenditures but also in light of long-term health and social care system sustainability.

Nevertheless, several important limitations must be acknowledged. First, the study applied a pre–post design without a control group, meaning that causal attribution to CN services cannot be firmly established. Second, the primary data were collected via a single survey relying on retrospective self-reporting, which introduces potential recall bias and limits the precision of before–after comparisons. Third, the cost calculations are based on Austrian Health Insurance Fund (ÖGK) tariffs, which tend to be lower than those of other health insurance providers—therefore representing a conservative estimate of true fiscal impact. Fourth, the diversity of pilot regions in terms of geography, population structure, and health infrastructure means that aggregated results may mask important local variations. Finally, the follow-up period was relatively short, and it remains unclear whether the observed utilization patterns and care allowance changes will persist over the medium to long term.

In conclusion, while the CN pilot projects appear to have influenced care pathways and resource use patterns in Austria, further longitudinal, controlled studies are required to clarify their causal impact and cost-effectiveness. Despite the limitations, the findings presented here confirm previous empirical findings and contribute valuable further insights that can help shape the scaling-up and strategic design of community-based nursing interventions in Austria and beyond.

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Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

The authors declare that DeepL, an AI-assisted translation software, and DeepL Write, an AI-assisted writing tool, were used throughout the manuscript. DeepL was applied for translating text, while DeepL Write was used to improve clarity, style, and grammatical accuracy across the full document. The usage was limited to language translation, grammatical correction, and stylistic refinement; no AI tools were used to generate original research content. The ideas, design, procedures, findings, analyses, and discussion are entirely the author's own work, derived from careful and systematic conduct of the research.

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