Towards case-mix based homecare payment: Developing a new Dutch homecare payment system, with and for homecare partners, to reach the Quadruple Aim

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Introduction: Case-mix based prospective homecare payment is being implemented in several countries to achieve high-quality, efficient, client-centered care. With case-mix, clients are allocated, based on their relevant characteristics (such as independence in activities of daily living (ADL)), into homogeneous groups with similar resource use. In the Netherlands, as part of an ongoing reform of the Dutch homecare payment system, a case-mix model was developed using Case-Mix Short Form (CM-SF) questionnaire data. However, this model, explaining 21% of the variance in homecare use, still requires improvement. Therefore, the aim of this Delphi-study was to identify predictors that could improve its predictive value, according to district nurses and healthcare purchasing experts.

Methods: The CM-SF contains eleven items on commonly used predictors from existing case-mix models, i.e. on illness prognosis (n=1), functional status in terms of ADL (n=6), self-reliance in terms of instrumental ADL (IADL) (n=2), cognitive functioning (n=1), and informal care (n=1). In the first Delphi-round, participants scored the relevance of these eleven client characteristics for predicting homecare use, using a 9-Point Likert scale. Participants could suggest missing relevant characteristics. In the second round, after an expert panel meeting, participants re-assessed relevance of pre-existing characteristics previously assessed uncertain and of a selection of suggested characteristics. Median and inter-quartile ranges were calculated to determine relevance.

Results: In the first Delphi-round, participants suggested 142 client characteristics, of which eleven were selected for further assessment. The eleven characteristics of the CM-SF and eleven suggested characteristics were assessed on their relevance for predicting homecare use by seventeen district nurses and five purchasing experts. In the second Delphi-round, of the 22 characteristics in total, ten client characteristics were assessed as relevant, with ‘Cognitive functioning’, ‘Learning ability’, and ‘Social network’ achieving the highest consensus for relevance. Other relevantly assessed client characteristics were among others ‘Multi-morbidity’, ‘Mental functioning’, and ‘Resilience’. Twelve characteristics were assessed uncertain, which largely
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Concern characteristics regarding a client’s daily functioning (including ‘Toileting’ and ‘Dressing’) and physical health status (including ‘Skin problems’ and ‘Malnutrition’). None of the 22 characteristics was found irrelevant.

**Conclusions:** In general, client characteristics suggested by the participants were more likely to be considered relevant compared to CM-SF items. According to district nurses and health insurers, homecare use could be predicted better by including other more holistic predictors in case-mix classification, such as on mental functioning and social network.

**Implications:** The challenge remains to operationalize characteristics such as ‘Social network’ and ‘Health literacy’, which are more difficult to objectively measure in a feasible way. Furthermore, for successful homecare prospective payment, all stakeholders should be kept on board in the decision-making process regarding the development and implementation of case-mix classification.