

## **The importance of Outcomes Management in Dietetics**

### **Policy paper – EFAD Professional Practice Committee – 2020**

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This Policy Paper had been produced by the EFAD Professional Practice Committee

The mission of the PPC is to support EFAD National Dietetic Associations to enhance the professional practice of its member thereby safeguarding safety and welfare of dietetic service users and building societal trust in the dietetic profession.

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## **Introduction/Background**

The European Food and Nutrition Action Plan of the World Health Organization (WHO) encourages the dietetic field to “monitor and evaluate diet-related activities, interventions and policies in different contexts in order to determine their effectiveness and to disseminate good practice” (WHO, 2015).

In health care, because of innovation, complexity and the changing demographics, financial resources are limited and must be allocated wisely (Frejier, K. et al., 2015). Therefore, accountability for effectiveness of nutritional care is pivotal for the future of healthcare and of the dietetic profession (Frejier, K. et al, 2015; British Dietetic Association (BDA, 2011). Dietetic counseling should follow a step by step model with a clear process, leading to measurable outcomes (Vanherle, K. et al, 2018). Economic manifestations of nutritional health outcome evaluation is a new field of health research and a major concern for improving care and for the reimbursement of care (Frejier, K. et al., 2015; Frejier, K. et al. 2019; Plas M, et al. (2018).

Outcomes management is a comprehensive process which includes outcome documentation and analysis. Analysis serves the purposes of interpretation, comparison and validation of dietetic interventions. The process aims at designing an effective dietetic work environment by measuring the effectiveness of dietetic interventions. (BDA, 2011; Gibbons, A.P.D. et al., 2017, Murphy, W.J. et al., 2015; Swan W.I. et al., 2017; Vanherle, K. et al, 2018). Development of evidence-based practice depends on outcomes management (Walshe, K. et al., 2001), which intends to answer - what works best, for whom, and at what cost (Spelt, P.L. et al., 1996; Spelt, P.L. et al., 2003). Outcome measures can be used to demonstrate the value of nutrition care provided by an individual practitioner, the dietetic community or the dietitian working as part of an interprofessional team (BDA, 2011; Plas, M., et al. 2018; Vanherle, K. et al, 2018). Outcome management may also provide clues of unexplained variations in outcomes despite the use of similar counseling strategies and interventions (Aase, S.Y. et al., 2010; Chui, T.K. et al., 2019; Guest, D. D, et. al., 2019; Thompson, K.L. et al., 2015).

Outcomes documentation provides the option of sharing data with the dietetic research community. The WHO’s European Health Information Initiative (EUHII) shared the still current vision of an “integrated harmonized health information system for the entire European region”. For outcome data to be harmonized and comparable, a standardized terminology (languages) and structures of documentation are essential. (Gabler, G.J. et al., 2018; Prodingner, B. et al., 2016; WHO, EUHII booklet). In nutrition and dietetics two standardized languages (SL), the Nutrition Care Process Terminology (NCPT) (Swan, W.I. et al., 2019) and the Classification and Code list Dietetics (CCD)- formerly known as International Classification of Functions (ICF) - are currently in use.

## **Problem Statement**

Based on the results of an internal survey of the Professional Practice Committee of the European Federation of the Associations of Dietitians (EFAD PPC, 2012), it became evident that outcome data is documented in daily dietetic practice. However, the implementation of consequent documentation is still ongoing. Furthermore, for the most part, currently the food, nutrition and dietetics data entry does not lend itself for data pooling. This may be due, in part, to unstructured documentation or to barriers for data pooling such as ununified electronic health records (Kight, C. E. et al., 2019; WHO, EUHII booklet). Also, routine comprehensive outcomes management to prove the effectiveness of dietetic practice and consequently ensure reimbursement of care is not practiced widely (Vanherle, K et al, 2018). There is need for improvement in dietetic outcomes management throughout Europe.

## **Objective**

Policy makers, dietitians and dietetic associations are encouraged to make a strong commitment to engage systematically in dietetic outcomes management to advance dietetic research. The results of effectiveness of care and cost-effectiveness need to be taken into consideration on a political level by all stakeholders involved in making decisions about reimbursement of dietetic care.

## Options

1. SL such as the NCPT, the CCD, the Systematized Nomenclature of Medicine (SNOMED) and the WHO classification and code lists are being implemented in several European countries. Harmonizing the documentation of nutrition care and outcomes facilitates aggregation and comparison of data (WHO EUHII Booklet). Also, inter-terminology mapping which aims to link the two languages used in nutrition and dietetics (NCPT, CCD) may provide an option to make the terminologies more comparable (Gabler, G.J. et al., 2018).
2. By using informatics systems, dietitians can manage outcomes data with the option of viewing it alongside the 'bigger picture' (other services' data). The use of Big Data further enhances comprehensiveness of outcomes management.
3. Outcome management needs to be implemented as part of habitual practice and across all disciplines of nutrition and dietetic practice (BDA, 2011; Swan W.I. et al., 2017; Vanherle, K et al, 2018).
4. "‘What matters to someone’ is not just ‘what’s the matter with someone’" (National Health Service., 2019). As well as measuring health outcomes, it is also important to consider what else may be important to the patient. To optimize patient-centered care, improve patient-clinician communication, empower patients and improve quality of care, health outcomes data should be complemented with patient reported outcome measures (PROMs) (Almario, C. et al., 2016; Biber, J. et al., 2017; Chui, T.K. et al., 2019; Devlin, N. et al., 2010; Foster, A. et al, 2017; Greenhalgh, J. et al., 2018; Mejdahl et al., 2017, The British Dietetic Association, 2011). PROMs are measures that help assess patient’s perspectives on their health and/or quality of life (QoL) (Boyce, M. et al, 2013; Devlin, N. et al., 2010; Foster et al., 2018; BDA, 2011). They are usually short questionnaires filled in by the patient at specific times before, during and after the period of treatment (BDA, 2011).  
PROMs are subjective measures that supplement objective outcome data. Furthermore, they allow assessment of the patient’s priorities. (Higgins, J. et al. 2008).  
There are generic and condition-specific PROMs. Generic PROMs include for example certain QoL questionnaires. (Devlin, N. et al., 2010; Royal College of Nursing, 2011). Nutrition-related QoL questionnaires are in demand (Barr, J.T. et al., 2003a; Barr, J.T. et al., 2003b) and could be useful. Several, however limited, condition-specific QoL questionnaires exist or are in development (Crocker, H. et al., 2018a; Crocker, H. et al. 2018b; Prasanna, K.H.R et al. 2018; Simpelaere, I., 2016;)
5. To provide quality indicators and indicate the level of quality of nutrition care, patient reported experience measures (PREM) should also be considered standards of care (Reilly, M. C., et al., 1993). PREMs are outcome questionnaires to provide patients’ perspective on their process of care (Devlin, N. et al., 2010; The British Dietetic Association, 2011). An example of a PREM is the Consultation and Relational Empathy Measure (CARE) (Mercer, S. et al., 2004).

## Analysis of Options

Documenting outcomes data in electronic systems requires the use of SL. Harmonization of SL and common platforms (i.e. International Classification of Disease-Clinical Modification (ICD-10-CM) or Systematic Nomenclature of Medicine – Clinical Terms (SNOMED-CT)) throughout Europe will probably take a while to be implemented considering actual developments. The mapping of terms into SNOMED-CT is in progress and numerous terms have already been incorporated. The ICD-10-CM does not seem to be suitable for integration of nutrition terms (Lorentzen, S.S. et al., 2019). The EUHII's vision to harmonize documentation strongly supports the use of SL (WHO, EUHII Booklet).

The use of electronic outcomes data recording in a manner that can be aggregated and analyzed has been an issue mainly because almost all the existing electronic health records (EHR) were developed before structured nutrition outcomes data was considered a contributing component to healthcare quality management. At present some institutions use an independent electronic page for nutrition related outcomes, which needs to be attached to the EHR. If that is not possible, data needs to be reentered into the EHR which proves very inefficient. One of the EUHII's aims is the improvement of compatibility across informatics systems which underlines the importance of this point (WHO, EUHII Booklet). This is the issue of interoperability between data systems and is not unique to dietetics.

To date, accessibility to big data is not widely available. To benefit from big data, the expertise of professionals who know how to build, use and analyze data sets from these databases is essential. Dietitians will have to be aware of developments in informatics and build capacity as part of life-long-learning (Gabler, G.J. et al., 2018). The benefit of data mining is to provide fast and detailed information on the progress of the care plan, enabling dietitians to review outcomes across an individual patient's timeline of care as well as patient groups, gender or clinical condition. Also, it allows data analysis on different levels such as within a facility, within a region, a nation or internationally (WHO EUHII Booklet). One barrier for data aggregation is data protection regulations. Harmonization of the applications of data protection regulations may facilitate health research (Chico, V., 2018).

An electronic platform to aggregate dietetic outcomes data was developed by the Academy of Nutrition and Dietetics (Academy of Nutrition and Dietetics Health Informatics Infrastructure (ANDHII)). It follows the Academy's Nutrition Care Process (NCP). ANDHII allows for NCPT-coded data entry and enables easy generation of outcome reports (Murphy W.J. et al., 2015, Murphy, W. J., et al., 2018; Swan, W., et al. 2017; Swan, W., et al. 2019). ANDHII could be one option for the improvement of data compatibility if integrated into the EHR. Furthermore, inter-terminology mapping may be more feasible than harmonizing the whole dietetic community to use one single terminology. An Austrian trial suggests that integration of the languages (NCPT, CCD) is possible (Gabler, G.J. et al., 2019).

Routine outcome management is feasible. However, there is need for guidance and education in the field (Vanherle, K et al, 2018). Implementation of routine outcome management will advance the dietetic profession by promoting evidence based practice and shedding light on accountability through the demonstration of success (Plas M, et al. 2018; Vanherle, K. et al., 2018). Clear frameworks and checklists specific to conditions and settings may guide and harmonize the process (Hickman, I. J, et al., 2015; Vanherle, K et al, 2018, The British Dietetic Association, 2011; WHO, 2015).

Evidence is still weak in many areas of nutritional care. This applies to patient outcome research as well as economic outcome research. Therefore, sufficient financial funding needs to be provided by national and international research organizations because funds are pivotal to the conduct of high-quality research and the advancement of evidence based practice.

In patient-centered care, PROMs and PREMs are an increasingly important part of outcomes research and quality management (Bobrovitz, M. et al, 2017; Boyce, M. et al, 2013; Chui, T.K. et al., 2019; McAllister et al., 2015; Medjdahl et al, 2017; Reilly, M. C., et al., 1993). However, many questions on the implementation of such measures remain unanswered and valid nutrition-focused tools are not yet available for all patient groups (Boyce, M. et al, 2013; Higgins, J. et al. 2008; Medjdahl et al, 2017).

## Recommendations

1. Dietetic outcomes research belongs on every national and international food, nutrition and dietetic research agenda. Funding on national and international level should be allocated.
2. National Dietetic Associations (NDAs) are encouraged to promote and support the implementation of SL in their respective countries. The endeavor to implement SL is ongoing and spreading and should be supported actively by capacity building of dietitians.
3. Higher Education Institutions (HEIs) need to commit to the integration of SL and outcomes management in the curricula of all academic levels of dietetic training.
4. Facilitation of data pooling within and between clinics, locally, nationally and internationally advances the opportunities for dietetic research tremendously. The legal basis to achieve this objective should be facilitated throughout Europe. Several organizations are already working on this endeavor.
5. Developments for inter-terminology mapping should be supported to facilitate the comparability of SL in dietetics.
6. Every dietitian should systematically and effectively document the outcomes data from the chain of nutrition care.
7. Development, validation and implementation of generic and/or condition-specific PROM as well as PREM should be part of national and international research agendas. Emphasis needs to be given to nutrition-focused tools. Associations like the International Confederation of Dietetic Associations (ICDA) or regional associations such as EFAD should promote this issue to the NDAs and the HEIs.
8. NDAs and HEIs should encourage implementing PROMs and PREMs for selected patient groups on a national level.

2019 EFAD Professional Practice Committee

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**Abbreviations**

ANDHII	Academy of Nutrition and Dietetics Health Informatics Infrastructure
BDA	British Dietetic Association
CARE	Consultation and Relational Empathy Measure
CCD	Classification and Code list Dietetics
HER	electronic health record
EFAD	European Federation of the Associations of Dietitians
EUHII	European Health Information Initiative
HEI	Higher Education Institution
NDA	National Dietetic Association
NCP	Nutrition Care Process
NCPT	Nutrition Care Process Terminology
ICDA	International Confederation of Dietetic Associations
ICF	International Classification of Functions
ICD-10-CM	International Classification of Disease-Clinical Modification, 10 <sup>th</sup> revision
PROM	patient reported outcome measure
PREM	patient reported experience measure
SL	standardized language
SNOMED	Systematized Nomenclature of Medicine SNOMED
SNOMED-CT	Systematic Nomenclature of Medicine – Clinical Terms
QoL	quality of life
WHO	World Health Organization



## Online resources

### Outcome management general resources

- Health Care Quality and Outcomes

<https://www.oecd.org/els/health-systems/health-care-quality-and-outcomes.htm>

- How Dutch Hospitals Make Value-Based Health Care Work

<https://www.bcg.com/publications/2018/how-dutch-hospitals-make-value-based-health-care-work.aspx>

- International Healthcare Outcomes Consortium for Healthcare Outcome Measurement Standard Sets

<https://www.ichom.org/>

- Outcomes-driven, sustainable healthcare

<https://www.efpia.eu/about-medicines/use-of-medicines/outcomes-focused-sustainable-healthcare/>

- EFAD Professional Practice Committee Webinar: Outcomes: A Framework To Evaluate Whether We Are Achieving What We Set Out To Achieve?

<https://www.youtube.com/watch?v=idYAS8BT2Xw>

- The British Dietetic Association Outcomes Guidance Document.

[https://www.bda.uk.com/professional/practice/bda\\_outcomes\\_guidance\\_document](https://www.bda.uk.com/professional/practice/bda_outcomes_guidance_document)

- The British Dietetic Association Outcomes Framework.

<https://www.bda.uk.com/professional/practice/Outcomes>

- Allied Health Professions Outcome Measures UK Working Group. Key questions to ask when selecting outcome measures: a checklist for allied health professionals

<https://www.rcslt.org/outcome-measures-checklist>

- The Top Success Factors for Making the Switch to Outcomes-Based Healthcare

<https://www.healthcatalyst.com/Outcomes-Based-Healthcare-Top-Success-Factors>

- The Top Seven Healthcare Outcome Measures and Three Measurement Essentials

<https://www.healthcatalyst.com/insights/top-7-healthcare-outcome-measures>

**PROMs and PREMs**

- About Patient Reported Measures

<https://www.aci.health.nsw.gov.au/make-it-happen/prms/about-patient-reported-measures>

- Getting the most out of PROMs

<https://www.kingsfund.org.uk/sites/default/files/Getting-the-most-out-of-PROMs-Nancy-Devlin-John-Appleby-Kings-Fund-March-2010.pdf>

- Patient Reported Outcome Measures

<https://www.rcn.org.uk/about-us/policy-briefings/pol-0111>

- Short Report: Use of patient-reported outcome and experience measures in patient care and policy

[https://kce.fgov.be/sites/default/files/atoms/files/KCE\\_303C\\_Patient\\_reported\\_outcomes\\_Short\\_Report\\_0.pdf](https://kce.fgov.be/sites/default/files/atoms/files/KCE_303C_Patient_reported_outcomes_Short_Report_0.pdf)

## Bibliography

- Aase, S. (2010). You, improved: understanding the promises and challenges nutrition informatics poses for dietetics careers. *J Acad Nutr Diet*, 110(12), 1794-1798. doi: 10.1016/j.jada.2010.10.019
- Almario, C. V., Chey, W. D., Khanna, D., Mosadeghi, S., Ahmed, S., Afghani, E., Spiegel, B. M. (2016). Impact of National Institutes of Health Gastrointestinal PROMIS Measures in Clinical Practice: Results of a Multicenter Controlled Trial. *Am J Gastroenterol*, 111(11), 1546-1556. doi:10.1038/ajg.2016.305
- Barr JT, Schumacher GE. (2003a). The need for a nutrition-related quality-of-life measure. *J Am Diet Assoc.*, 103:177–180.
- Barr JT, Schumacher GE. (2003b). Using focus groups to determine what constitutes quality of life in clients receiving medical nutrition therapy: first steps in the development of a nutrition quality-of-life survey. *J Am Diet Assoc.*, 103:844-851.
- Biber, J., Ose, D., Reese, J., Gardiner, A., Facelli, J., Spuhl, J., Weeks, H. (2017). Patient reported outcomes - experiences with implementation in a University Health Care setting. *J Patient Rep Outcomes*, 2, 34. doi:10.1186/s41687-018-0059-0
- Bobrovitz, N., Santana, M. J., Boyd, J., Kline, T., Kortbeek, J., Widder, S., Stelfox, H. T. (2017). Short form version of the Quality of Trauma Care Patient-Reported Experience Measure (SF QTAC-PREM). *BMC Res Notes*, 10(1), 693. doi:10.1186/s13104-017-3031-9
- Boyce, M. B., & Browne, J. P. (2013). Does providing feedback on patient-reported outcomes to healthcare professionals result in better outcomes for patients? A systematic review. *Qual Life Res*, 22(9), 2265-2278. doi:10.1007/s11136-013-0390-0
- British Dietetic Association (2011). Model for Dietetic Outcomes (Reviewed 2014). Retrieved 17th of September, 2019 from: [https://www.bda.uk.com/publications/archive/bda\\_outcome\\_model\\_2011\\_archive](https://www.bda.uk.com/publications/archive/bda_outcome_model_2011_archive)
- Chico, V. (2018). The impact of the General Data Protection Regulation on health research. *Br Med Bull*, 128(1), 109-118. doi:10.1093/bmb/ldy038
- Chui, T. K., Proano, G. V., Raynor, H. A., & Papoutsakis, C. (2019). A Nutrition Care Process Audit of the National Quality Improvement Dataset: Supporting the Improvement of Data Quality Using the ANDHII Platform. *J Acad Nutr Diet*. doi:10.1016/j.jand.2019.08.174
- Crocker, H., Jenkinson, C., Peters, M. (2018a): Quality of life in coeliac disease: item reduction, scale development and psychometric evaluation of the Coeliac Disease Assessment Questionnaire (CDAQ). In *Alimentary pharmacology & therapeutics* 48 (8), pp. 852–862. DOI: 10.1111/apt.14942.

Crocker, H., Jenkinson, C., Peters, M. (2018b): Quality of life in coeliac disease: qualitative interviews to develop candidate items for the Coeliac Disease Assessment Questionnaire. In *Patient related outcome measures* 9, pp. 211–220. DOI: 10.2147/PROM.S149238.

Devlin, Nancy; Appleby, John. (2010). Getting the most out of PROMs: health outcomes and NHS decision-making, The King's Fund. Retrieved 17<sup>th</sup> of September, 2019 from <https://www.kingsfund.org.uk/sites/default/files/Getting-the-most-out-of-PROMs-Nancy-Devlin-John-Appleby-Kings-Fund-March-2010.pdf>

European Federation of the Association of the Dietitians Professional Practice Committee (2012). Report on Knowledge and Use of a Nutrition Care Process & Standardised Language by Dietitians in Europe, retrieved 6<sup>th</sup> of December, 2019 from [http://www.efad.org/media/1185/ncp\\_sl\\_report.pdf](http://www.efad.org/media/1185/ncp_sl_report.pdf)

Foster, A., Croot, L., Brazier, J., Harris, J., & O’Cathain, A. (2018). The facilitators and barriers to implementing patient reported outcome measures in organisations delivering health related services: a systematic review of reviews. *J Patient Rep Outcomes*, 2, 46. doi:10.1186/s41687-018-0072-3

Freijer, K., Lenoir-Wijnkoop, I., Russell, C. A., Koopmanschap, M. A., Kruijenga, H. M., Lhachimi, S. K., Schols, J. M. (2015). The view of European experts regarding health economics for medical nutrition in disease related malnutrition. *Eur J Clin Nutr*, 69(5), 539-545. doi:10.1038/ejcn.2014.280

Freijer, K., Volger, S., Pitter, J. G., Molsen-David, E., Cooblall, C., Evers, S., Lenoir-Wijnkoop, I. (2019). Medical Nutrition Terminology and Regulations in the United States and Europe-A Scoping Review: Report of the ISPOR Nutrition Economics Special Interest Group. *Value Health*, 22(1), 1-12. doi:10.1016/j.jval.2018.07.879

Gabler, G.J., Coenen, M., Lycett, D., & Stamm, T. (2019). Towards a standardized nutrition and dietetics terminology for clinical practice: An Austrian multicenter clinical documentation analysis based on the International Classification of Functioning, Disability and Health (ICF)-Dietetics. *Clin Nutr*, 38(2), 791-799. doi:10.1016/j.clnu.2018.02.031

Gabler, G. J., Coenen, M., Bolleers, C., Visser, W. K., Runia, S., Heerkens, Y. F., & Stamm, T. A. (2018). Toward Harmonization of the Nutrition Care Process Terminology and the International Classification of Functioning, Disability and Health-Dietetics: Results of a Mapping Exercise and Implications for Nutrition and Dietetics Practice and Research. *J Acad Nutr Diet*, 118(1), 13-20.e13. doi:10.1016/j.jand.2016.12.002

Guest, D. D., Cox, T., Coble Voss, A., Nguyen, A., McMillen, K., Williams, V., Yakes Jimenez, E. (2019). Rationale and Study Protocol for the Academy of Nutrition and Dietetics' Outpatient Oncology Outcomes Feasibility Study. *Journal of the Academy of Nutrition and Dietetics*, 119(7), 1205-1208. doi:<https://doi.org/10.1016/j.jand.2019.01.013>

Gibbons, A.P.D. (2017). Towards international best outcomes: the shared path to the nutrition care process informatics, and research translation. *J Acad Nutr Diet*, 117(11),1728-1729.

Greenhalgh, J., Gooding, K., Gibbons, E., Dalkin, S., Wright, J., Valderas, J., & Black, N. (2018). How do patient reported outcome measures (PROMs) support clinician-patient communication and patient care? A realist synthesis. *J Patient Rep Outcomes*, 2, 42. doi:10.1186/s41687-018-0061-6

Hickman, I. J., Cotugno, J., Lassemillante, A. C., & Ferguson, M. (2015). Am I making a difference? Measuring dietetic outcomes in clinical practice. *Eur J Clin Nutr*, 69(11), 1181-1183. doi:10.1038/ejcn.2015.148

Higgins, Julian P. T.; Green, Sally (2008): *Cochrane handbook for systematic reviews of interventions*. Retrieved from <http://handbook-5-1.cochrane.org/>

Kight, C. E., Bouche, J. M., Curry, A., Frankenfield, D., Good, K., Guenter, P., Wootton, A. (2019). Consensus Recommendations for Optimizing Electronic Health Records for Nutrition Care. *Nutr Clin Pract*. doi:10.1002/ncp.10433

Lorentzen, S. S., Papoutsakis, C., Myers, E. F., & Thoresen, L. (2019). Adopting Nutrition Care Process Terminology at the National Level: The Norwegian Experience in Evaluating Compatibility with International Statistical Classification of Diseases and Related Health Problems, 10th Revision, and the Existing Norwegian Coding System. *J Acad Nutr Diet*, 119(3), 375-393. doi:10.1016/j.jand.2018.02.006

McAllister, M., & Dearing, A. (2015). Patient reported outcomes and patient empowerment in clinical genetics services. *Clin Genet*, 88(2), 114-121. doi:10.1111/cge.12520

Mejdahl, C. T., Schougaard, L. M. V., Hjollund, N. H., Riiskjaer, E., Thorne, S., & Lomborg, K. (2017). PRO-based follow-up as a means of self-management support - an interpretive description of the patient perspective. *J Patient Rep Outcomes*, 2, 38. doi:10.1186/s41687-018-0067-0

Mercer, S. W., Maxwell, M., Heaney, D., & Watt, G. C. (2004). The consultation and relational empathy (CARE) measure: development and preliminary validation and reliability of an empathy-based consultation process measure. *Fam Pract*, 21(6), 699-705. doi:10.1093/fampra/cmh621

Murphy, W. J., & Steiber, A. L. (2015). A new breed of evidence and the tools to generate it: introducing ANDHII. *J Acad Nutr Diet*, 115(1), 19-22. doi:10.1016/j.jand.2014.10.025

Murphy, W. J., Yadrick, M. M., Steiber, A. L., Mohan, V., & Papoutsakis, C. (2018). Academy of Nutrition and Dietetics Health Informatics Infrastructure (ANDHII): A Pilot Study on the Documentation of the Nutrition Care Process and the Usability of ANDHII by Registered Dietitian Nutritionists. *Journal of the Academy of Nutrition and Dietetics*, 118(10), 1966-1974. doi: <https://doi.org/10.1016/j.jand.2018.03.013>

National Health Service. The NHS Long Term plan. (2019). Retrieved 22nd of November, 2019 from: <https://www.longtermplan.nhs.uk/publication/nhs-long-term-plan/>

Plas M, Remijnse W (2018). Kennisagenda Diëtetiek; Bouwen aan de toekomst. Dutch Dietetic Research Agenda. Building our future. Retrieved 17th of September, 2019 from [https://ntvd.media/wpcontent/uploads/2018/12/Kennisagenda\\_di%C3%ABtetiek.pdf](https://ntvd.media/wpcontent/uploads/2018/12/Kennisagenda_di%C3%ABtetiek.pdf)

Prasanna, K.H.R.; Mahesh, M. G.; Menon, V. B.; Srinath, K. M.; Shashidhara, K. C.; Ashok, P. (2018): Patient Self-reported quality of life assessment in Type 2 diabetes mellitus: A pilot study. In *Nigerian journal of clinical practice* 21 (3), pp. 343–349. DOI: 10.4103/njcp.njcp\_433\_16.

Prodinge, B., Tennant, A., Stucki, G., Cieza, A., & Ustun, T. B. (2016). Harmonizing routinely collected health information for strengthening quality management in health systems: requirements and practice. *J Health Serv Res Policy*, 21(4), 223-228. doi:10.1177/1355819616636411

Reilly, M. C., Zbrozek, A. S., & Dukes, E. M. (1993). The validity and reproducibility of a work productivity and activity impairment instrument. *Pharmacoeconomics*, 4(5), 353-365. doi:10.2165/00019053-199304050-00006

Royal College of Nursing (2011): PROMS: Patient Reported Outcome Measures. The Role, Use & Impact of PROMs on Nursing in the English NHS. Retrieved 17th of September, 2019 from <https://www.rcn.org.uk/about-us/policy-briefings/pol-0111>

Simpelaere, I., White, A., Bekkering, G. E., Geurden, B., van Nuffelen, G., Bodt, M. (2016): Patient-reported and proxy-reported outcome measures for the assessment of health-related quality of life among patients receiving enteral feeding: a systematic review protocol. In *JBI database of systematic reviews and implementation reports* 14 (7), pp. 45–75. DOI: 10.11124/JBISRIR-2016-002982.

Splett P.L. (2003). Outcomes research and economic analysis. In: Monsen, E.R. (Ed). *Research*, American Dietetic Association, (2nd ed). pp. 291-213.

Splett, P.,L. (1996). Cost outcomes of nutrition intervention, part 1: Outcomes of nutrition intervention. Evansville, Ind: Mead Johnson and Co Inc.

Swan, W. I., Vivanti, A., Hakei-Smith, N. A., Hotson, B., Orrevall, Y., Trostler, N., Papoutsakis, C. (2017). Nutrition Care Process and Model Update: Toward Realizing People-Centered Care and Outcomes Management. *J Acad Nutr Diet*, 117(12), 2003-2014. doi:10.1016/j.jand.2017.07.015

Swan, W. I., Pertel, D. G., Hotson, B., Lloyd, L., Orrevall, Y., Trostler, N., Papoutsakis, C. (2019). Nutrition Care Process (NCP) Update Part 2: Developing and Using the NCP Terminology to Demonstrate Efficacy of Nutrition Care and Related Outcomes. *J Acad Nutr Diet*, 119(5), 840-855. doi:10.1016/j.jand.2018.10.025

The British Dietetic Association (BDA) (2011). Model for Dietetic Outcomes (Reviewed 2014). Retrieved 17th of September, 2019 from: [https://www.bda.uk.com/publications/archive/bda\\_outcome\\_model\\_2011\\_archive](https://www.bda.uk.com/publications/archive/bda_outcome_model_2011_archive)

Thompson, K. L., Davidson, P., Swan, W. I., Hand, R. K., Rising, C., Dunn, A. V., Murphy, W. J. (2015). Nutrition care process chains: the "missing link" between research and evidence-based practice. *J Acad Nutr Diet*, 115(9), 1491-1498. doi:10.1016/j.jand.2015.04.014

Walshe, K., & Rundall, T. G. (2001). Evidence-based management: from theory to practice in health care. *Milbank Q*, 79(3), 429-457, iv-v. doi:10.1111/1468-0009.00214

World Health Organization, Regional Office for Europe. (2015). European Food and Nutrition Action Plan 2015-2020. Retrieved 17th of September, 2019 from <http://www.euro.who.int/en/publications/abstracts/european-food-and-nutrition-action-plan-20152020-2014>

World Health Organization, Regional Office for Europe. European Health Information Initiative. Booklet. Retrieved 17th of September, 2019 from [http://www.euro.who.int/\\_data/assets/pdf\\_file/0004/287275/EHII\\_Booklet\\_EN\\_rev1.pdf?ua=1](http://www.euro.who.int/_data/assets/pdf_file/0004/287275/EHII_Booklet_EN_rev1.pdf?ua=1)