BDA The Association of UK Dietitians

Capturing outcome data using a Digital Dietetic Record

2024

Definitions

Inputs
Resources dedicated to or consumed by a project - usually staff (knowledge, experience), facilities such as clinic space, laptops, finances, time etc. It can be summarised as the financial, human and material resources used for activities or processes.

Activities
Actions or processes undertaken using the resources (inputs) to produce specific outputs; for example 'The BDA Model and Process for Nutrition and Dietetic Practice' (M&P) which incorporates dietetic interventions.

Outputs
Outputs are the products and services which result from the activities or processes. They are usually captured as the volume of work accomplished e.g. number of patients seen, number and type of dietetic interventions undertaken, number of staff trained. Data analysis helps to build a picture of your dietetic service.

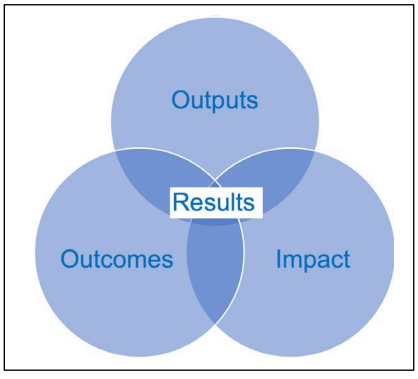
Outcomes
A 'health outcome' is 'a change in the health of an individual, or a group of people or a population, which is wholly or partially attributable to an intervention or a series of interventions'.
Outcome data can be obtained from individuals, groups, and populations.
External influences are likely to affect the results, so outcomes are not the same as the interventions or the outputs, but the actual, real-life results.

Effectiveness
'The extent to which a dietetic intervention yields the desired outcomes with normal dietetic/clinical practice'. It refers to external validity and answers the question: does the intervention work in practice in clinical or daily life settings? Routine data from practitioners can be used to gauge effectiveness.

Cost-effectiveness
'The effect or value of a dietetic intervention in relation to its costs (direct and indirect) and resources (individual or from society) needed to produce the desired outcomes'.
It answers the question: is the intervention meritable and can it be justified?

Impact
This is the strong effect or influence on a situation or person.
The impact is the positive and negative primary and secondary effects produced by the intervention, directly or indirectly (intended or unintended) – often thought of as the consequences. This includes the wider effects e.g. social, economic, environmental consequences, both expected and not expected.

Results
The results include the output, outcome, and impact of the activities.



Episode of Care
A dietetic episode of care comprises one, or a series of contacts with dietetic staff, relating to one or a series of dietetic interventions, usually following a dietetic referral. This is the time from the first contact to when the individual is discharged. However, for those with certain long-term conditions, they may still remain on the dietetic caseload, though the episode of care has ended.

Glossary

M&P BDA Model and Process for Nutrition and Dietetic Practice

DDR Digital Dietetic Record

PREMS Patient reported experience measures

PROMS Patient reported outcome measures

PRSB Professional Record Standards Body

SL Standardised Language

SNOMED CT Systemised Nomenclature of Medicine (Clinical Terms)

Capturing Outcome Data using a Digital Dietetic Record and the BDA Model and Process

Introduction

The European Federation of the Associations of Dietitians (EFAD) have advised that dietetic counselling should follow a step by step model with a clear process, leading to measurable outcomes[1][2] (EFAD, 2020; Vanherle, K. et al, 2018).

They also state that:

- as financial resources are limited, accountability for the effectiveness of nutritional care is vital.
- outcome management should be implemented as part of habitual practice.
- standardised terminology language and structures of documentation are essential to enable outcome data to be harmonised and comparable.

The AHP Outcomes review in 2017 found that a standardised approach to outcome measures may result in better evidence of effectiveness.

The BDA's Model and Process for Nutrition and Dietetic Practice (M&P)[3] provides a standardised approach so it is an ideal framework for capturing the outcomes of dietetic interventions for individuals, groups and populations. This enables evaluation of data related to the effectiveness of practice.

Outcomes Management

Outcomes management includes both outcomes documentation (as part of the M&P) and data analysis, requiring both outcome data and standardised language terms (SL terms).

The NHS has an agreed clinical vocabulary of SL terms known as Systemised Nomenclature of Medicine - Clinical terms (SNOMED CT). New SL terms relating to nutrition and dietetic requirements were submitted by the BDA to be added to SNOMED in 2023. They are awaiting clarity on the use of these terms. There are individual lists for dietetic problems, aetiology, proposed outcome, indicators, interventions and barriers which are available as part of this toolkit on the BDA website.

Analysis includes the interpretation, comparison and validation of dietetic interventions. They 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.

In addition, capturing the resources required for dietetic activities and the volume of work undertaken enables a more comprehensive analysis of the results of dietetic intervention; the outputs, outcomes and the impact as shown in Figure 1.

Service level data is also helpful when assessing the impact of dietetic practice. Some examples are:

- **INPUTS -** Resources required and utilised such as number of dietetic staff, skill mix and job plans, capacity and demand data including unmet need, facilities such as clinic space, laptops, time and financial aspects.

- **OUTPUTS -** Number of individuals (or groups) seen per clinical speciality, new: follow up ratio, DNA rate, waiting times, complexity of individuals, locations seen, telephone and online consultations.

When designing a digital dietetic template, it is useful to consider the quantity and type of data that can be captured digitally. This should enable analysis of both input (e.g. location, time spent) and output data (volume of work) as well as outcome evaluation.

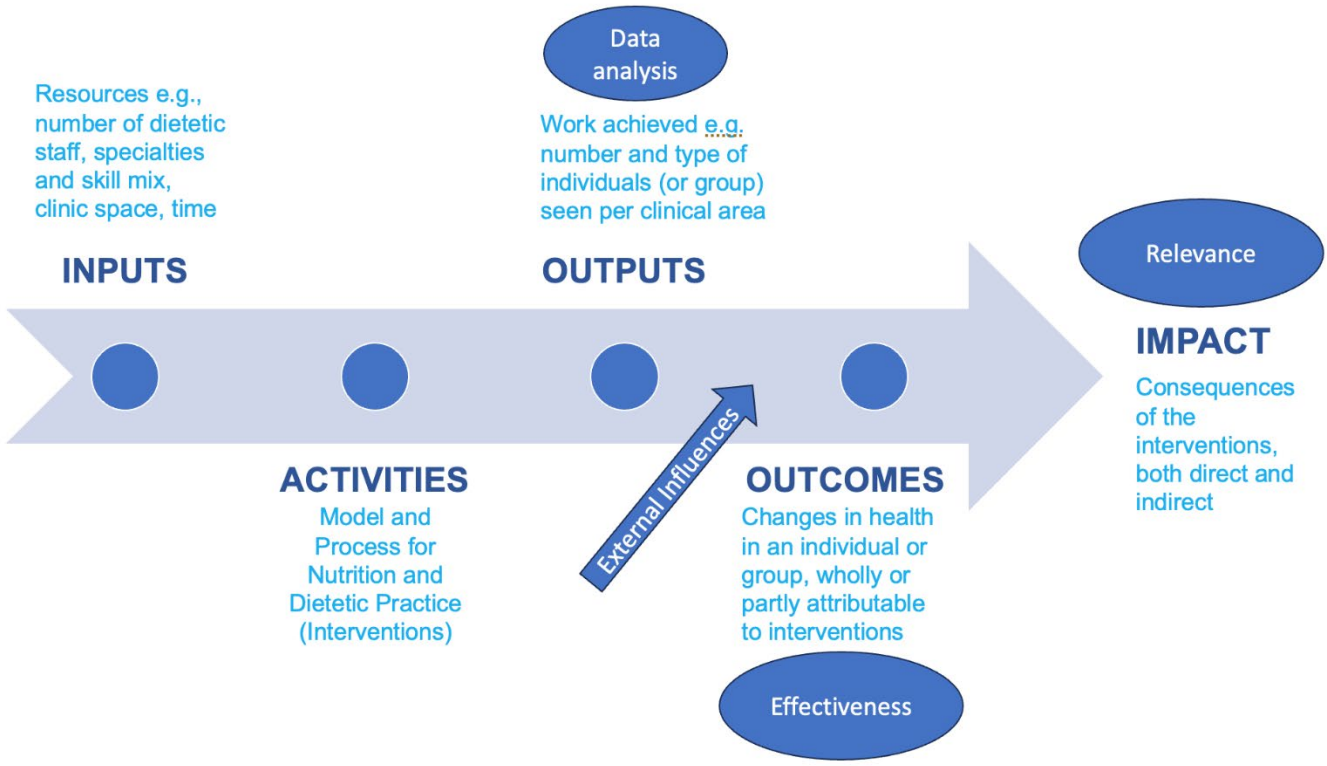
External Influences

Undertaking an activity does not necessarily mean that the desired results from that activity are achieved, which is why monitoring progress towards the goals is an essential part of any dietetic process.
The outcomes achieved are often not the same as the outcomes that we want to achieve (proposed outcome) due to external influences (both barriers and facilitators).

Collecting data from both outputs and outcomes gives you a clearer picture of external influences and how these can affect the impact of dietetic interventions.

Figure 1

Diagram to show how Dietetic Activities, Inputs and Outputs link with Outcomes and Impact



What Outcome Data should I collect?

Previously, most outcome data was collected using a paper-based system, but this took a considerable amount of time and effort and often data needed to be transferred to a spreadsheet for analysis.

In theory, by transitioning to digital working and using a digital dietetic record template, data collection should be simpler, as it should enable seamless evaluation of both outcome and output data. However, in practice, the ease with which outcome data can be captured depends on the level of functionality of the digital template and the systems available for use.

Clinician knowledge and experience will also affect the ease of data collection in addition to the quantity and quality of what is recorded.

Three stages for outcome collection and evaluation are suggested; the starting point will depend both on previous experience with both outcome collection and evaluation and also on the functionality of the digital template. See Figure 2.

If you are new to outcome data collection, we suggest that you start at stage one and progress to stage two when possible.

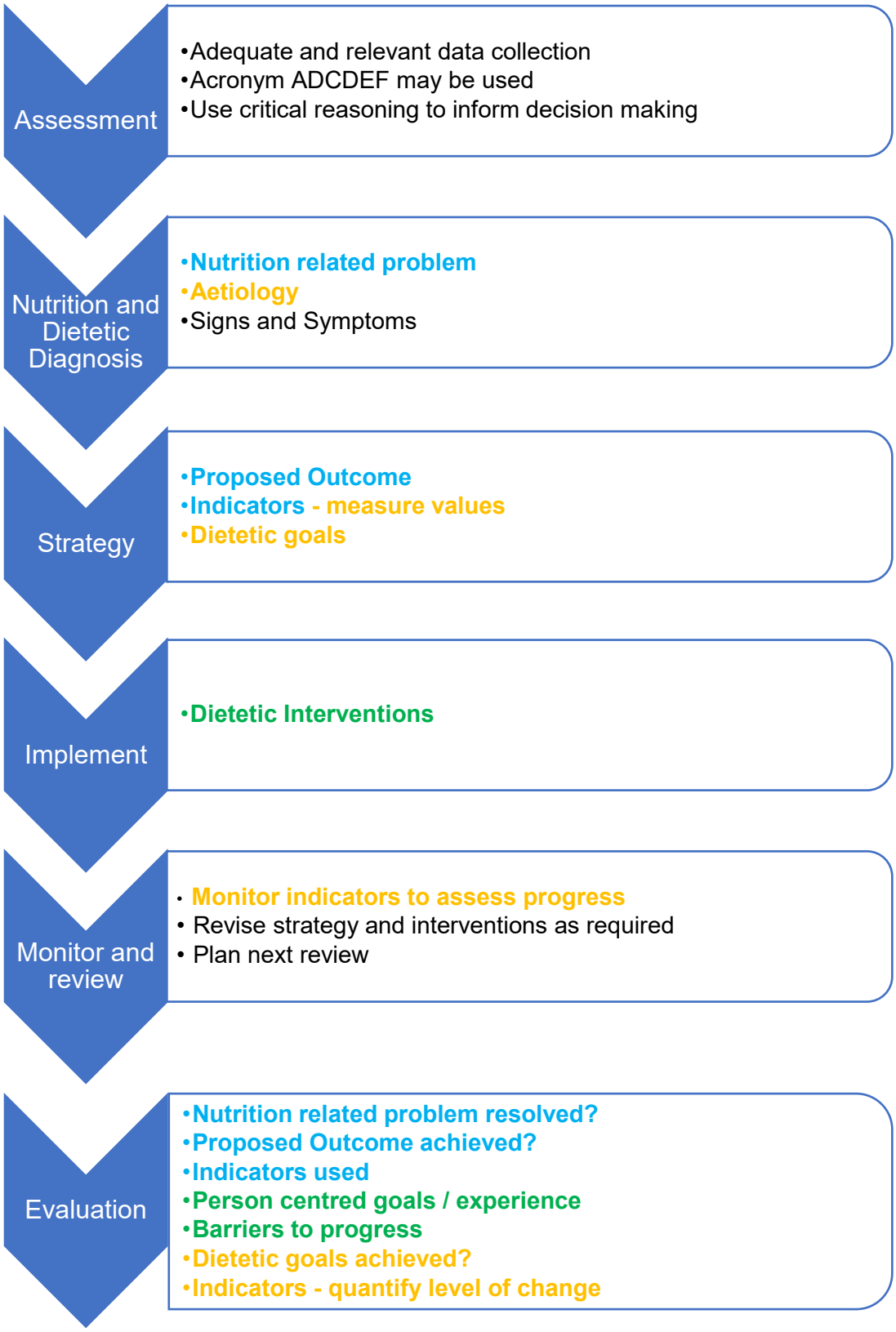
The inclusion of all elements from stage three may be purely aspirational rather than achievable for most dietitians at present. This is because stage three relies on having sufficient functionality to be able to pull through data from previous dietetic records.

For example, to enable comparison between initial and final indicator values during the evaluation stage, these ‘auto-populated data fields’ save time and are more accurate than relying on free text entries.

This is why the created core DDR template includes auto-populated and coded data fields.

Figure 2

Stages for Outcome Collection and Evaluation using the Model and Process



SNOMED CT

The BDA has individual SNOMED lists for dietetic problem, aetiology, proposed outcome, indicators, interventions and barriers on the BDA website, and forms part of this toolkit.

As the BDA are awaiting clarity on the use of recently submitted SL terms, including ‘proposed outcome’ and ‘barriers’, we suggest that you create your own drop-down lists. The short list of broad aetiologies and barriers can be used for this purpose.

Initially, we suggest that you write your own PASS statement as free text, and incorporate the appropriate SNOMED term for the nutrition related problem.

If you do not have the ability to incorporate any SNOMED terms into your digital record, you could develop your own short ‘drop down’ lists of the most useful SL terms, to enable you to capture the key aspects of outcome evaluation, until you are able to use SNOMED CT in the future.

If you are new to collecting outcome data, start small, one step at a time and analyse your results. Start in one clinical area, agree what level of outcome evaluation you can achieve (such as stage one) and agree what standardised language (SL) terms you plan to use, from the lists on the BDA website, as described above. For example, agree a selection of SL terms to use for the nutrition related ‘problem’ and how you will record the outcome; i.e. if the problem has been resolved / improved / no change or worsened.

See below for information regarding the stages for outcome data collection.
Refer to figures 3,4,5 and 6 for supporting information.

Stages for outcome data collection and evaluation

Stage One

This is a useful place to start if you do not have a comprehensive digital record; you can obtain useful outcome data simply by recording systematically the resolution (or otherwise) of nutrition related problems at the end of an episode of dietetic care.

Recording the result of what you want to achieve through dietetic intervention (the proposed outcome) and whether that has been achieved or not (a simple Yes or No will suffice) provides further confirmation of the effectiveness of dietetic intervention.

Adding the perspective of service users is encouraged, even if only via compliments, complaints and comments received at this stage. Analysing this data together with output data (e.g. number and type of individuals or groups seen) should enable you to begin to evaluate the outcome data from different clinical areas within your dietetic service. See the document 'A standardised approach to collecting outcomes data', which forms part of this toolkit.

Stage Two

We recommend that, where possible, Stage Two outcome data is used, together with the collection of input and output data.

This stage builds on the outcome data collected in stage one. Collecting data on the interventions used, the indicators and the barriers provides more detailed information to enable effective outcome evaluation.

When monitoring service users and finding limited or no progress towards their proposed outcome, barriers are helpful to understand why. Collecting from the short list of broad barriers is easier to start with, using a drop down menu and then progressing onto SNOMED terms later.

Collecting barriers also provides evidence for the rationale for changes in interventions or recommendations made by the Dietitian.

Including outcome data from service users, such as goals from their perspective or their experience with the dietetic service are extremely valuable.

The NHS long term plan[4] states *"the importance of 'what matters to someone' is not just 'what's the matter with someone'. Since individuals' values and preferences differ, ensuring choice and sharing control can meaningfully improve care outcomes."* A digital record should include person-centered goals or experience.

If you are new to collecting outcome data, it is helpful to pilot this within one clinical area and then expand as resources enable you to do so.

Stage Three

This adds greater richness to outcome data, if you include indicator values and consider the number and type of goals achieved.

Aetiologies (from the PASS statements) can also be analysed. However, recent research has demonstrated that there is little agreement in aetiology selection among professionals when assessing nutrition-related data, and it may help to use broad aetiology categories. There is a comprehensive list of SL terms for aetiology on the BDA website, but this may be confusing to those with little experience with writing PASS statements.

A short list has been developed to capture both broad aetiologies and broad barriers for departments' own internal analysis. This is because barriers capture the same themes as aetiologies. We suggest using this broad list initially and then progressing onto SNOMED codes later.

If your digital template can capture the indicator values at the start, during the episode of care and at the end, you can access trends over time, ideally in real time, for each service user.

Please note that for objective data, quantitative changes are easy to see; but for subjective data, qualitative scales or short questionnaires can be considered instead. There are some validated indicator or outcome tools that could be used for capturing person centred goals (e.g. Goal based Outcome Tool) and their experience (e.g. Care Measure). These should enable a comprehensive evaluation of outcomes data, particularly when combined with detailed output data.

It is important to include key aspects that health service managers and commissioners will find of greatest value. This includes demonstrating clear health benefits to your service users (e.g. reducing the prevalence of malnutrition or improving confidence to manage their own health) or cost savings such as the avoidance of hospital admission. These significant changes demonstrate the impact of dietetic care.

Finally, at all stages of outcome evaluation, we should share our new found knowledge with others to improve and learn together.

'Providing evidence of the effectiveness of dietetic interventions in improving health outcomes is of critical importance to justify the importance and value of nutrition and dietetics in health-care. This can contribute to the dietitians' strategy for success by demonstrating their effectiveness and by that strongly claim their role in health care' [(2)] (Vanherle K. et al, 2018).

How to Record Outcomes

- **Using a paper record**
  As discussed earlier, this is time intensive and much less adaptable. We recommend that where possible try to avoid recording on paper, and find a way to effectively record digitally.

- **Using a spreadsheet**
  It is possible to design your own spreadsheet using Excel, or to use one already developed. Several BDA specialist groups have developed their own Outcome Tools, most of these are spreadsheet based. Though these tools are helpful, most have not been validated and they require time and effort to transpose data from the dietetic record into the spreadsheet.

- **Incorporating into a Digital Record**
  To avoid having to transpose data onto a spreadsheet, it is better to incorporate the outcome data onto the digital dietetic record (DDR) template itself. Both the outcome data and the associated SNOMED SL terms should be able to be pulled through into the 'Evaluation' section of the DDR or a separate digital 'Outcomes' summary sheet and used for outcomes evaluation for each service user.
  See Figure 6 below 'Evaluation of Outcome Data using the core DDR template'.

- **Accessing via 'Business Intelligence'**
  Once the outcome data is accessible as part of a digital record, it may be pulled through to use for creating your own business and outcome reports e.g. for each clinical area or per department.

Figure 3

Outcome Stages and use of Standardised Language Terms

KEY

Stage 1 If you are new to outcome data collection, start here

Stage 2 Aim to achieve this stage

Stage 3 Aspire to achieve this stage

Model and Process Stage	Model and Process terms	BDA SL term (drop down list)	SNOMED Code	Free text
At start of episode of care				
PASS	Nutrition related problem	√	√	
	Aetiology (broad)	√		In PASS
	Signs & Symptoms	helps direct choice of indicators		In PASS
STRATEGY	Proposed Outcome	√		
	Indicators	√	√	
	Dietetic goals set			√
Monitor at each review				
MONITOR	Goals			√
	Indicators	√	√	Record values
At end of episode of care				
EVALUATION	Interventions used	√	√	
	Barriers (broad)	√		
	Person centred goals and/or experience			√
	Dietetic goals achieved?			√
	Indicators – changes seen	√	√	record values
	Indicators used	√	√	
	Nutrition related problem resolved?	drop down list: yes/improved/no change/worsened		
	Proposed outcome achieved?	drop down list: yes/no		

Figure 4

Examples of Evaluation Questions

Model and Process terms	Examples of evaluation questions to use at end of an episode of care
Nutrition related Problem(s)	Have nutrition related problem(s) resolved / improved / no change / worsened
Aetiology (broad)	Has aetiology been resolved? Yes/No. Initially, use broad aetiology categories
Signs & Symptoms	These do not need to be recorded individually as you use indicators for this
Proposed Outcome	Has proposed outcome been achieved? Yes/No
Dietetic goals	Have goals been achieved? What percentage of goals have been achieved?
Person centred goals	Have person centred goals been achieved? Yes/No e.g. PROMS, 'Goal based outcome tool'
Experience of Individuals or Groups	Experience of Individuals or Groups e.g. PREMS, 'CARE measure'
Indicators	Number and type of indicators used
Indicator values	Amount of change captured (for objective indicators) or subjective level of change (for subjective indicators). Is the measured change an improvement?
Interventions	Record interventions used. This helps you to answer 'How effective are these interventions in practice?'
Barriers (broad)	Number and type of barriers present or resolved. Initially, use broad barrier list.

Figure 5

Examples of Input and Output data

Dietetic resources e.g. specialist areas covered, skill mix, job plans, vacancy rate
Facilities e.g. clinic space, number of laptops
Capacity and demand data including priorities and unmet need
Dietetic speciality and band for each individual (or group) seen
Numbers and type of individuals (or groups) seen
Location and type of consultation
Complexity
Time spent per consultation (mins)
Number of initial and review contacts (N:FU ratio, DNAs)

Figure 6

Evaluation of Outcome Data using the core DDR Template

EVALUATION Outcome of Dietetic Intervention					COMMENTS
NUTRITION RELATED PROBLEM			Outcome of Problem		Taken from PASS statement "PROBLEM related to AETIOLOGY as evidenced by SIGNS and SYMPTOMS"
Nutrition related Problem 1		Auto populates from SNOMED code (from previous entries)	Resolved/improved/no change /worsened		Focus on outcome of "Problem" using SNOMED list or own drop down list
Nutrition related Problem 2		Auto populates from SNOMED code	Resolved/improved/no change /worsened		Repeat as needed if more than one nutrition related problem
Broad Aetiology for Problem 1					Add Broad Aetiology Terms if helpful for each problem
INTERVENTIONS USED			Comments		
Intervention 1		Auto populates from SNOMED code	Free Text		Keeping a record of dietetic interventions used is useful for evaluating outcome data. They help to answer the question, how effective are the interventions in practice?
Intervention 2		Auto populates from SNOMED code	Free Text		
OUTCOME INDICATORS		Initial value	Final value	Comments	
Indicator 1	Auto populates from initial SNOMED code	Auto populates from initial value for indicator 1	Final value	Free Text	Indicators are used to record progress towards the proposed outcome (and goals) Capture values at start, during and end of episode of care if possible. You may require more indicators (rarely need more than 4)
Indicator 2	Auto populates from initial SNOMED code	Auto populates from initial value for indicator 2	Final value	Free Text	
BARRIER(S) present at end of episode of care			Drop down list	Free Text	Initially use broad barriers list. Not all barriers are on SNOMED.
DIETETIC GOALS achieved			YES/NO	Free Text	If possible, include these to assess numbers and types used, percentage goals achieved
Have person centred goals / expectations been achieved?			YES/NO	Free Text	Include where possible
Changes in nutrition related medication			Free Text		Use, if not included above, and is a significant factor in the care of the individual or group
PROPOSED OUTCOME			Auto populates from initial drop down list		These terms not currently on SNOMED, use drop down list of most frequently used terms
Has proposed outcome been achieved?			YES/NO	Free Text e.g. explain variance from proposed outcome	Focus on one main aim (proposed outcome)

NOTE: Incorporate as many Problems, Interventions, Indicators, Barriers and Goals as you consider are required and are practical and feasible to record.

Summary

Using a standardised process for digital records, such as for the Model and Process, enables a systematic approach both for the collection of outcome data and analysis of the effectiveness of dietetic care.

If you are new to this, start somewhere, in one small area. Nominate a digital champion to work with your local I.T. team to develop a digital record that can capture the key outcomes you require.

For those that wish to have a greater understanding of the key aspects to include in outcome evaluation, please read the article by Vanherle et al (2018) given below. Two other useful references are included, based on the Nutrition Care Process, which provide a helpful overview.

Please share your new found knowledge with others and with the BDA office, so that together we can develop our understanding in this crucial area.

References

1. EFAD Professional Practice Committee *'The Importance of Outcomes Management in Dietetics'* EFAD Policy paper *2020*

2. Vanherle K et al *'Proposed standard model and consistent terminology for monitoring and outcome evaluation in different dietetic care settings'* Clinical Nutrition 37 (2018) 2206-2216

3. Model and Process for Nutrition and Dietetic Practice. British Dietetic Association June 2021

4. NHS England. (2019). 'NHS Long Term Plan'. London. NHS January 2019.

References on Outcomes and the Nutrition Care Process

5. Swan W.I. et al 'Nutrition Care Process and Model Update: Toward Realising People-Centered Care and Outcomes Management.' ; *J Acad Nutr Diet.* 2017; **117**: 2003-2014

6. Swan W.I. et al *'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 2019 May;119(5):840-855.

Useful Resources

Dietetic Outcome Tools

There are several specialist group outcome tools available on the BDA website.

Outcome Tools and Indicators for Service Users

Below are some suggested validated tools. These are on SNOMED as well as the BDA SL terms list for Indicators.

- **Goal based Outcome Tool**
  Available at: https://www.goals-in-therapy.com/the-gbo-tool

- **CARE Measure**
  Available at: https://caremeasure.stir.ac.uk

- **Patient Activation Measure**
  Available at: https://www.england.nhs.uk/publication/module-1-patient-activation-measure-implementation-quick-guide/

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