Why written objectives need to be really SMART.

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ARE YOUR WRITTEN OBJECTIVES *REALLY* SMART?
A DESCRIPTIVE REVIEW OF THE GOAL FRAMEWORK OF OBJECTIVE STATEMENTS

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Abstract

All successful programmes share goal-setting as a standard practice, and many write their goal statements to satisfy the S.M.A.R.T. criteria. To be SMART, objective statements should be constructed to specify four components: Outcome, Indicator, Target-level and Timeframe (O.I.T.T.). This study reviewed the goal framework of published objective statements to determine the extent to which they are SMART. The statements of 17 published examples of SMART objectives found in literature of mainly four major health organisations: CDC, WHO, NHS and Save the Children, were structurally analysed to measure the completeness of their goal framework according to the OITT components.

Only four examples are outcome objectives. 13 (76%) are process or task oriented. The structure of two thirds of the statements shows the similar objective-writing templates used within CDC. All objective statements have an incomplete set of OITT components. The commonest framework has 3 components of indicator, target and timeframe (75% completeness) in 12 statements. Almost all statements specify a timeframe; three-quarter of them mention a target and three-fifth an indicator, but less than 1 in 5 state an outcome. Thus, none of the objective statement is really SMART, and goal-setters are significantly less likely to specify an outcome, than indicator, target or timeframe in their objectives. A high prevalence of non-SMART objectives with low potential for goal attainment in healthcare projects is proposed.
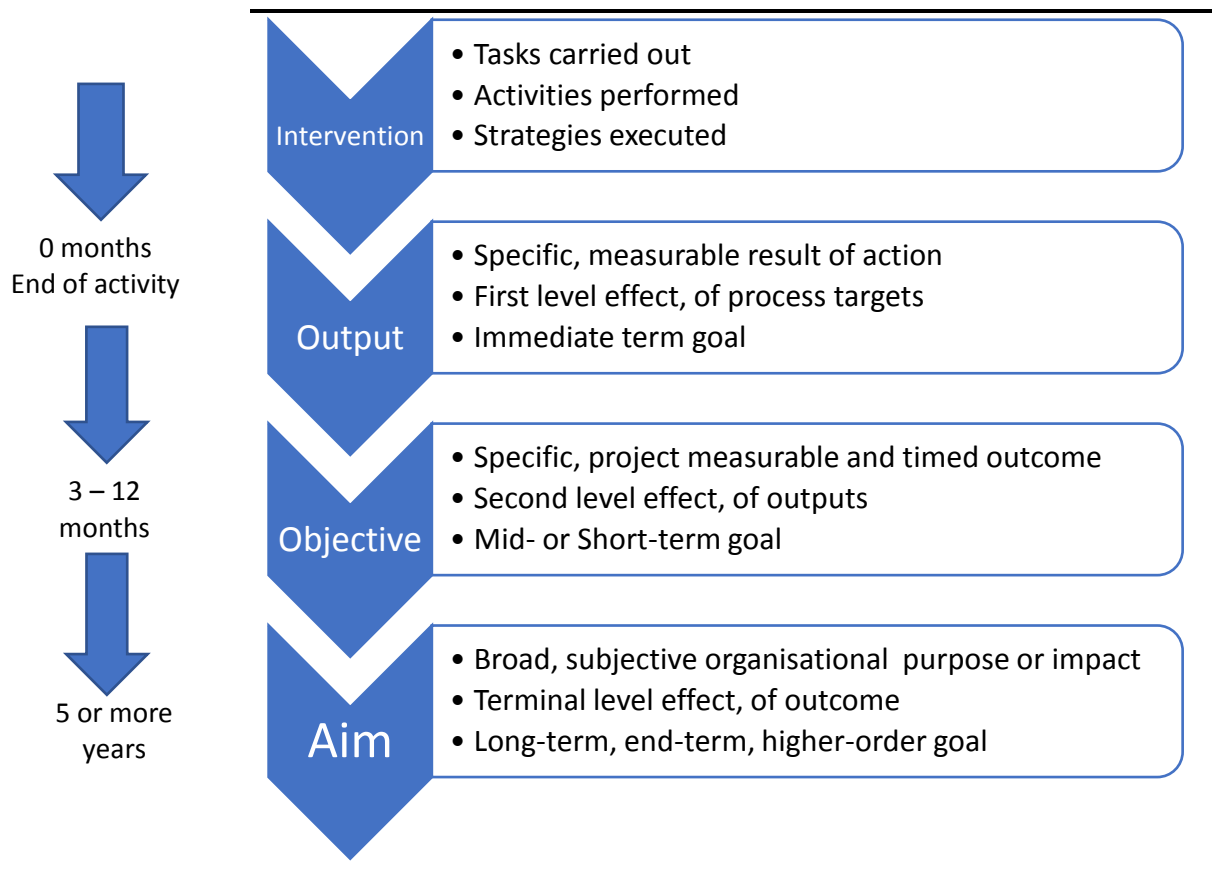
INTRODUCTION

Background on goals and Objectives

Goal setting is a characteristic practice that is shared by all successful programmes and organisations in every sector of human endaevour; and writing clear and well-structured statements to express objectives in a specific, measurable and achievable format is the norm for any effective practice (Beardshaw and Palfreman 1990; Bratton et al. 2007; Day and Tosey 2011). Hence, it is best practice to use a conceptual framework as a tool for setting goals that can reliably provide a logical platform on which work is planned and assessed (Mullins 1999). Universally, it is agreed that without well-formulated goals, plans lack their rationale, strategies lack their relevance, actions lack their direction, projects lack accountability for their effort, and organisations lack their purpose (Mullins 1999; Beardshaw and Palfreman 1990; Oracle 2012; Bratton et al. 2007). Moreover, goals need to be properly constructed to serve as credible and usable benchmarks by which the results of work done can be monitored and evaluated, either its immediate outputs, or its intermediate outcome on a short-term or its terminal impacts on a long term (Shiell 1997; Greenbank 2001; Fitsimmons 2008; Bipp & Kleingeld 2011; Oracle 2012). Thus, it is a basic requirement of effective goal-setting that objective statements are formulated with a clear and logical structure or framework.

Generically, goal-setting researchers define a goal as the desired end-result of an action that is expected to be achieved at some specified time in the future, and that for which all effort and essential resources are therefore committed to accomplish (Lee et al. 1989; Stretcher et al. 1995; Locke and Latham 2002; Locke and Latham 2006; Fitsimmons 2008; Day and Tosey 2011; Nanji et al. 2013). In this article, and in line with a recent review by Ogbeiwi (2016), the term 'objective' refers to a sub-goal, one which expresses a desired outcome: a short-term effect or change expected to result from the outputs of activities performed (OECD 2002). In the hierarchy of goals illustrated in Figure 1, the effects of the immediate output of an intervention lead to the attainment on a short-term of the objective, which in turn on a longer-term contributes to the achievement of the broad or overall aim, which some organisations describe as general goal and development or a higher order objective (OECD 2002). Besides the levels, Figure 1 also differentiates outputs, objectives and aims according to the differing time frames for their attainment and goal attributes. Literature evidences suggest that it may take between three to twelve months to achieve a short-term outcome relating to an objective, and at least five years to accomplish a long-term impact relating at an aim (Ogbeiwi 2016). The synthetic review by Ogbeiwi (2016) reported seven thematic characteristics that distinguish an objective from the other goal types, including its stated object of outcome, specific scope, mid-level or intermediate hierarchy, short-term time-frame, quantifiable measurability, significance of effectiveness, and expression as a S.M.A.R.T. goal. Hence, while Figure 1 shows an aim is the broad statement of the expected terminal achievement of an intervention, which expresses its long-term impact and overall purpose, an objective is a specific statement of time-bound interim accomplishment. As conveyed in the definition by Centers for Disease Control and Prevention (CDC) USA, objectives are 'annual milestones that the program needs to achieve in order to accomplish its goals by the end of a 5-year funding period' (CDC 2009: 1).

Figure 1: Linear direction of the chain effects of intervention goals

	Intervention	• Tasks carried out • Activities performed • Strategies executed
0 months End of activity	Output	• Specific, measurable result of action • First level effect, of process targets • Immediate term goal
3 – 12 months	Objective	• Specific, project measurable and timed outcome • Second level effect, of outputs • Mid- or Short-term goal
5 or more years	Aim	• Broad, subjective organisational purpose or impact • Terminal level effect, of outcome • Long-term, end-term, higher-order goal

SMART Objective setting

Typically, writing objectives as S.M.A.R.T. statements is the gold standard for goal-setting, because it gives a clear direction for logical action planning and implementation (CDC 2008). S.M.A.R.T. is an acronym for Specific, Measurable, Assigned, Realistic and Timed, first published by George T. Doran in 1981 as *the* five essential criteria that the statement of every meaningful and effective objective should fulfil (Doran 1981; CDC 2008; Day and Tosey 2011). Many programmes and organisations have since then used the SMART acronym as a reliable model to guide formulation of objectives for their different intervention levels by simply asking the question: 'Is the objective SMART?' (CDC 2009: 2). Accordingly, different divisions of CDC have produced tools such as checklists and templates for SMART objective setting (CDC 2009; CDC 2008; CPH 2017; DHDSP 2017; DTBE 2017). These checklists use the SMART acronym as a base, and goal setters simply answer questions related to each key word, on how to make the objective statement SMART. To aid the construction of an objective statement, DTBE (2007) provides a tabulated template that proposes writing it according to a breakdown into seven parts: verb, metric, population, object, baseline measure, goal measure and timeframe. Two other CDC divisions provide a template of incomplete statement with gaps to be filled with expected components as a sample (DSTDP 2017, DHDSP 2017). Thus, few tools are available that offer structural guidance for writing objective statements with a SMART goal framework, and templates against which goal setters

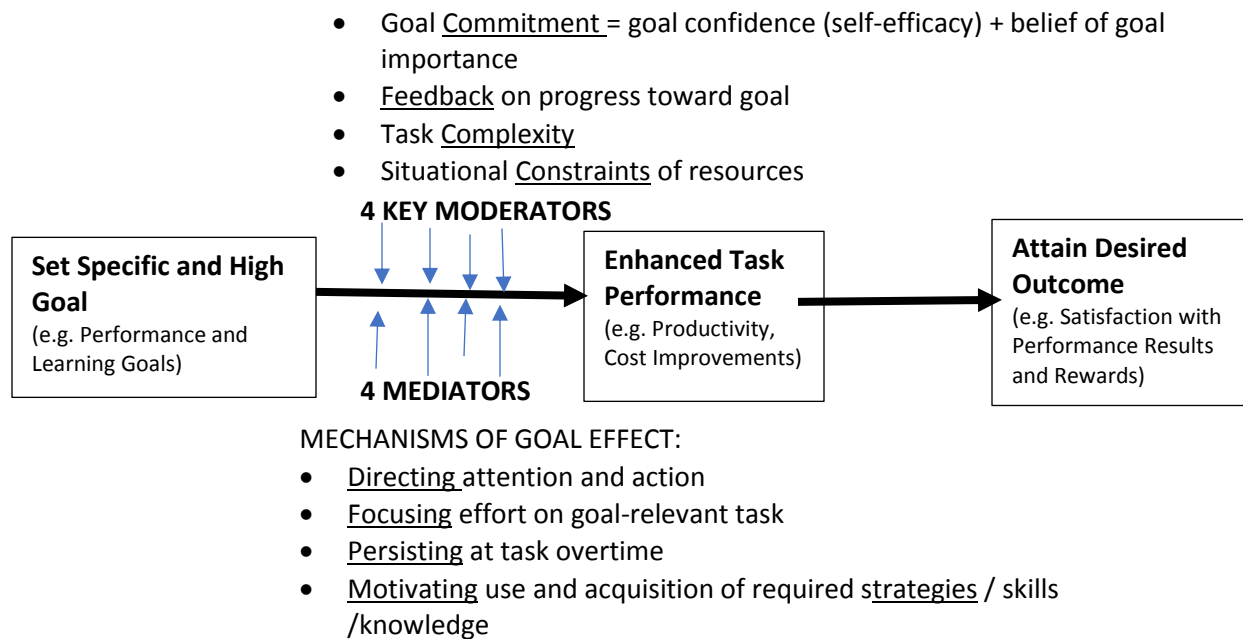can compare their formulated goal statements to determine whether they satisfy the SMART criteria or not.

Frameworks for SMART Objective Setting

Many goal setting frameworks have been studied extensively since the 1950s. The popular ones include Management By Objectives (Drucker 1955; van Herten & Gunning-Schapers, 2000a, Dahlsten, Styhre & Williander, 2005; Bipp & Kleingeld, 2011), Balanced Scorecard Approach (Kaplan and Norton 1996), Goal Attainment Scale (Yip et al. 1998), Total Quality Management and Continuous Quality Improvement initiatives (Ginsburg 2001; Medlin and Green 2009). Also included are RAID (Review, Agree, Implement, and Demonstrate & Develop) model (Parker 2003) and Productivity Measurement and Enhancement System (Pritchard et al. 2008). Bovend'Eerdt et al. (2009) reported the use of WHO International Classification of Functioning, Disability and Health (ICF) as a template for goal setting and Scobbie et al. (2013) reported G-AP (Goal-setting and Action Planning) framework. In the field of engineering, Zhu et al. (2002) reported the use of Object/Objective-Oriented Maintenance Management (OOMM) as a goal setting framework. While most of these frameworks are hinged on SMART goal setting, Day and Tosey (2011) faulted the SMART criteria in the education sector and instead recommended the use of 'Well-formed Outcome' framework for writing learning objectives based on Zimmerman's (2008) eight criteria for appropriate goals, as an alternative. According to Zimmerman (2008) criteria, learning goals must satisfy the conditions of goal specificity, temporal proximity, hierarchical organisation, congruence with self and others' goals, a degree of difficulty, self-generation, a level of conscious awareness and clarity of whether the goal is process or performance related. On the Day and Tosey's (2011) Well-formed Outcomes framework, properly formulated educational objectives should be written on a 'P.O.W.E.R.' template that states: Positive outcome, Own role, What task (with dates), Evidence of accomplishment and Relationships required.

Practically, besides the CDC's and Day and Tosey's templates, most existing frameworks simply outline process steps that goal setters could follow in their goal setting practice, rather than offer lexical frameworks for writing SMART objective statements. However, their principles are mostly based on Locke and Latham's (1990) motivational theory of goal-setting and task performance (Figure 2), which illustrates how goals formulated with goal attributes of specificity and difficulty, under certain mediating and moderating conditions, motivate improvement of task performance, which in turn increases the chance of goal attainment (Locke and Latham 2002; Locke and Latham 2006). Thus, it can be assumed that a specific, challenging, clearly written goal framework is an indirect predictor of goal attainment. However, like the SMART criteria, this Locke and Latham's theoretical framework only outline the goal attributes that effective objectives should have for the desired goal-effect (Locke and Latham 2013), but does not specify the goal contents that give the statements those attributes. Therefore, there is still need for a reliable and practical conceptual guide for goal setters to aid the actual writing of objective statements with the right components of a SMART goal framework.

Figure 2: Locke and Latham's Goal-setting Theory (adapted from Locke & Latham 2002 and 2006)

- Goal Commitment = goal confidence (self-efficacy) + belief of goal importance
- Feedback on progress toward goal
- Task Complexity
- Situational Constraints of resources

4 KEY MODERATORS

| **Set Specific and High Goal** (e.g. Performance and Learning Goals) | → | **Enhanced Task Performance** (e.g. Productivity, Cost Improvements) | → | **Attain Desired Outcome** (e.g. Satisfaction with Performance Results and Rewards) |

4 MEDIATORS

MECHANISMS OF GOAL EFFECT:
- Directing attention and action
- Focusing effort on goal-relevant task
- Persisting at task overtime
- Motivating use and acquisition of required strategies / skills /knowledge

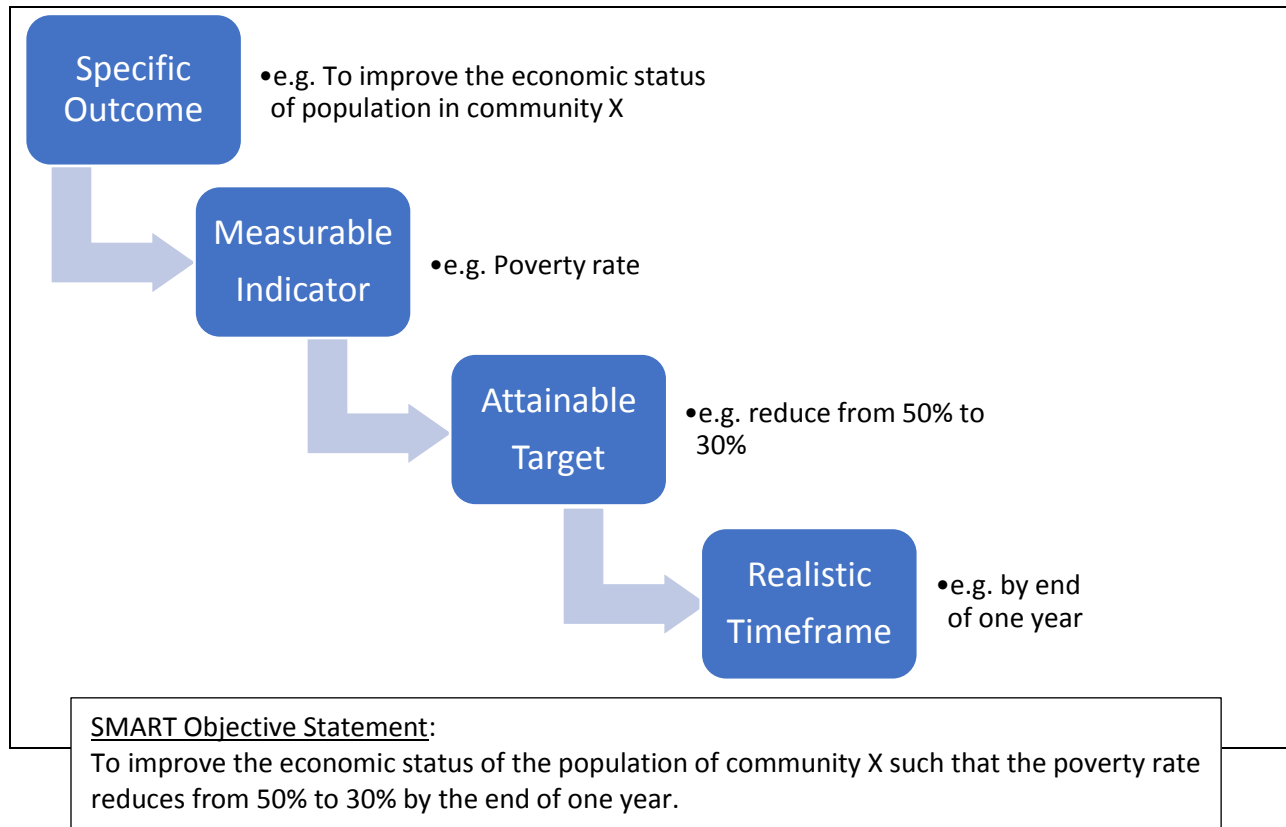## Model Framework for Writing SMART Objectives

Doubtless for goal clarity, to be S.M.A.R.T. according to Doran's original criteria, and positively influence goal attainment according to Locke and Latham's (1990) theory, it is essential that every meaningful objective statement should specify the positive change or improvement desired, the measurable indicator of the change, the challenging but attainable level of the indicator, and the realistic time frame of when it can be achieved (Doran 1981, Ogbeiwi 2016). Therefore, SMART objective statements could be constructed on a model framework that has four components: the Outcome, its Indicator, Target-level and Timeframe (O.I.T.T.). Figure 3 shows an example of an objective statement constructed with the OITT framework. So far, no past empirical studies have investigated or reported the goal frameworks that goal setters use for writing statements of their objectives, or assess the extent to which the objective statements they formulate for their development or intervention plans are SMART.

Purpose of Study

No empirical goal-setting research has yet been done to investigate the constituent components of goal frameworks for writing a SMART objective statement. It is therefore the aim of this study to analyse the goal framework of SMART objective statements found in literature and determine the extent to which they satisfy the five goal attributes of specificity, measurability, attainability, realisability and time. This study is designed to answer a core question: Are 'SMART' objective Statements really specific, measurable, attainable, realistic and time bound? To answer this question, the study will compare the goal framework of sample 'SMART' objective statements against the O.I.T.T. components (Figure 3) as a standard analytical template.

Figure 3: OITT Framework of an objective statement

Specific Outcome — •e.g. To improve the economic status of population in community X

Measurable Indicator — •e.g. Poverty rate

Attainable Target — •e.g. reduce from 50% to 30%

Realistic Timeframe — •e.g. by end of one year

SMART Objective Statement:
To improve the economic status of the population of community X such that the poverty rate reduces from 50% to 30% by the end of one year.

METHODS

This study is a quantitative descriptive review of published examples of SMART objective statements in literature sources obtained through a purposeful search of available literature on SMART goal setting. These involved many stages of online searches of formal academic databases such as HMIC, AMED, Pubmed, Medline, PsychArticles, CINAHL, and Google scholar, as well as informal search engines such as Google. The search phrases used were "Writing SMART objectives" and "Goal setting and Framework", "Goal-setting in Healthcare" and "Monitoring and Evaluation Toolkits". Goal setting framework articles were generated from these databases, but only those that gave access to full texts were printed for document review. Other materials were obtained through snowballing from the reference lists of accessed articles. All materials were manually scanned for objective statements given as "Examples of SMART objectives" as the main selection criterion. In line with the study definition of an objective, any statements referred to as "SMART Process Objectives" were excluded, while "SMART Outcome Objectives" were included, even though some of them still described tasks as desired accomplishments.

The OITT framework was used as standard template for determining whether the goal framework of each objective statement was truly SMART or not. Accordingly, to be SMART, each objective statement should be a single sentence that specifies a complete set of OITT components - outcome, indicator, target and timeframe (see figure 3). To be an outcome, the specified accomplishment should be an expected short-term result or change that can be related to the activities of a project, intervention or organisation (OECD 2002, DSTDP 2017) as illustrated in Figure 1. To be an indicator, the specified goal

measure should be a direct quantifiable variable of the outcome. Usually indicators are expressed in quantitative units of number, percentage or proportion, average, ratio, rates, etc. (DHDSP 2017). To be a target, the specified level or quantity should be an amount of the indicator stated. Timeframes should be specific dates, periods or time frequency. Notable, no examples of SMART objectives were found in any of academic goal-setting articles reviewed. A total of 17 examples of objective statements (Table 1) were collected from Doran (1981) and four major healthcare organisations, including: Centers for Disease Control and Prevention, USA (11), Salford Royal Hospitals NHS Trust, UK (3), WHO Geneva (1), and Save the Children, UK (1). To fulfil copywrite instructions, written permission was obtained from Salford Royal Hospitals NHS Trust, UK for the use their material in the study. The 11 CDC objective statements were published by five Divisions of CDC, including the Division of STD Prevention (DSTDP), Division of Heart Disease and Stroke Prevention (DHDSP), Division of TB Evaluation (DTBE), Communities for Public Health (CPH), and Health Youths (CDC 2009). CDC are also the publisher of the conference presentation by Carl Osaki (2008).

The structural contents of each of the 17 objective statements were analysed descriptively and compared against the components of the OITT framework to determine the degree to which their structure or goal framework are SMART. Each statement was assessed by the number of the OITT components specified and the percentage completeness of the four components. The percentage completeness of each statement can either be 0% (no components), 25% (1 component), 50% (2 components), 75% (3 components) or 100% (4 components). In the synthesis of its SMART framework, the objective statement is considered specific if it states an outcome, and measurable if an indicator is specified. To be attainable, it should state a relevant target-level, even though the contextual realisability could not be assessed because of the study design's limitation of the data sources to published materials. Lastly, the statement is time bound if a timeframe is stated. The STATCALC application of EPI-INFO software version 7.2.1.0 was used for 2x2 contingency calculation of Chi-square test values for differences in number of individual components, and statistical significance determined by Mantel Haenszel test results and 2-tailed p-values of less than 0.05.

RESULTS

Contexts of objectives

Table 1 shows the 17 examples of objective statements originate from 12 different project contexts: All are health related except the management objective from Doran (1981) and the climate change research objective from Osaki (2008). Three objectives (17.6%) each are from hospital and heart disease / stroke contexts; two objectives (11.8%) from youth health, and one objective (5.9%) each from the remaining 9 contexts, including STD, TB, child health, diarrhoea, environmental health, climate change, human resource management, minority communities and management. Similarly, the areas of work or care for which the sample objectives were set are varied, covering 11 work settings. According to Table 1, three objectives each are for health education and training. Breast surgery and health information system has two objectives each. The remaining 7 work settings with one objective each include inventory system, STD treatment, TB case-holding, immunization, diarrhoeal prevention, surgical theatre management and research.

Type of Objectives

A total of 13 (76.5%) of the 17 objectives are process-oriented objectives that seek targeted accomplishment of tasks or work, and four (23.5%) are results or outcome-oriented. Table 1 shows that the four work settings and contexts where outcome objectives are formulated are case-holding in TB, child immunization, stroke awareness health education and diarrhoeal prevention.

Basic Structure of Objective Statements

The majority, 11 (64.7%) of them, originate from CDC related sources. Apart from the CDC-DTBE objective, all CDC objectives are written in a structure that has the same sequence of timeframe, task or outcome to be accomplished, and the expected change in the measure from baseline to target. The objective no. 5 in table 1 that relates to a STD treatment goal is typical of this template for writing objective statement in CDC programmes, which CDC-DHDSP (2017: 5) also reports as:

'By_____/_____/_____, [WHEN—T*ime bound*] [WHO/WHAT—*Specific*] from: _____to: _____ [MEASURE (number, rate, percentage of change and baseline)—*Measurable*].'
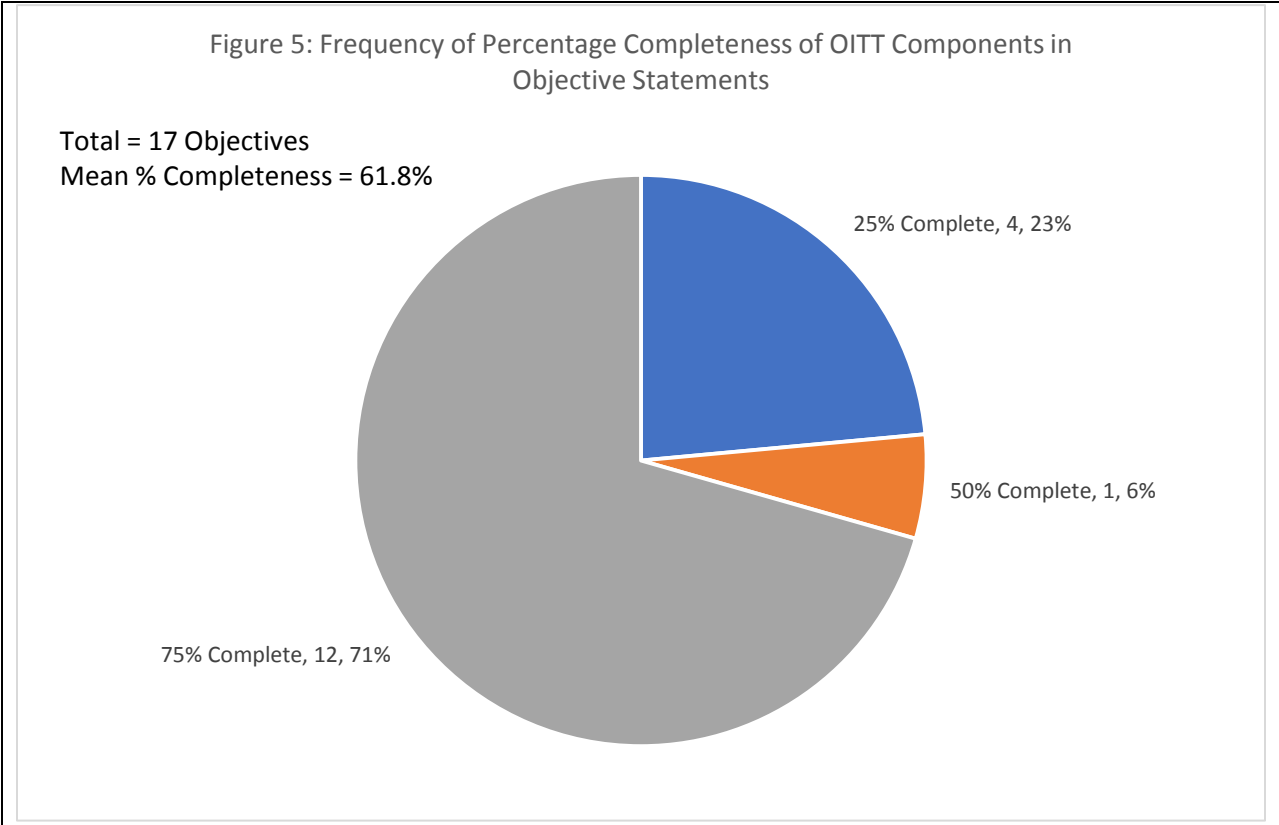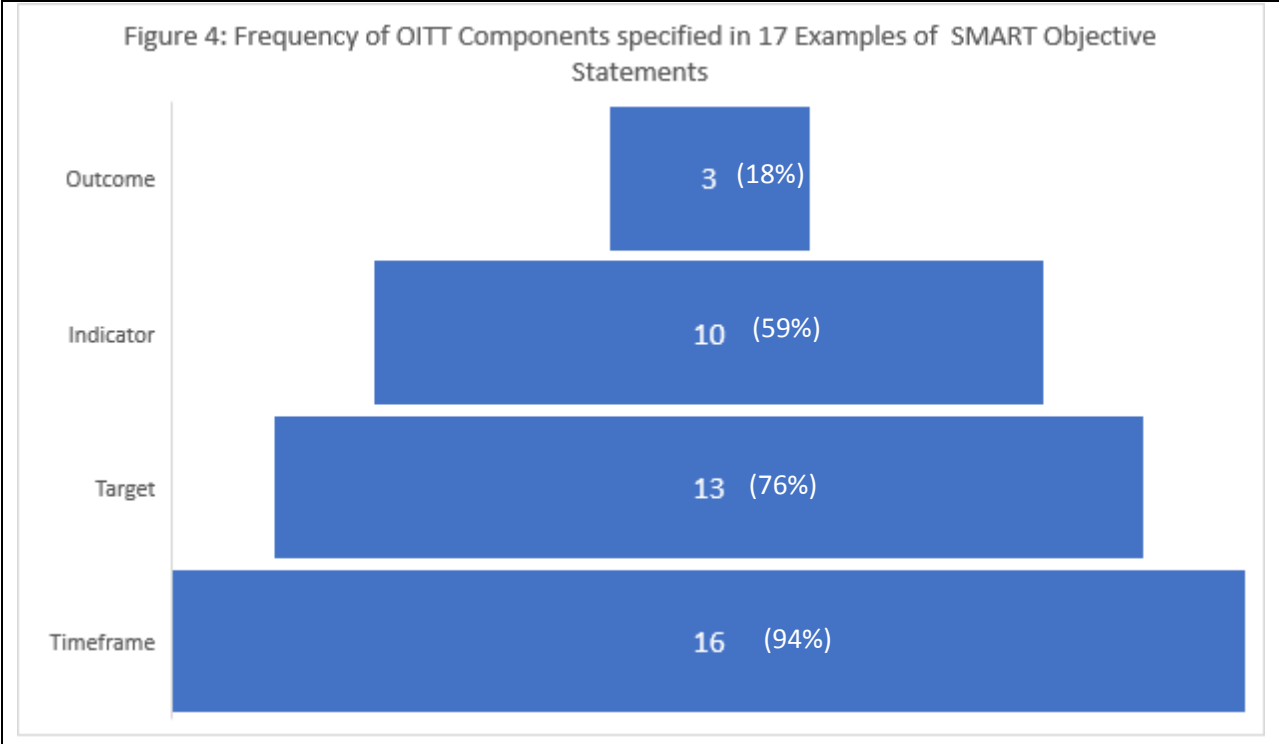
The five examples from Salford NHS, WHO and Save the Children sources, mostly show their objective statements also share a similar sequence, which states the desired accomplishment first, then the measure and the time frame last.
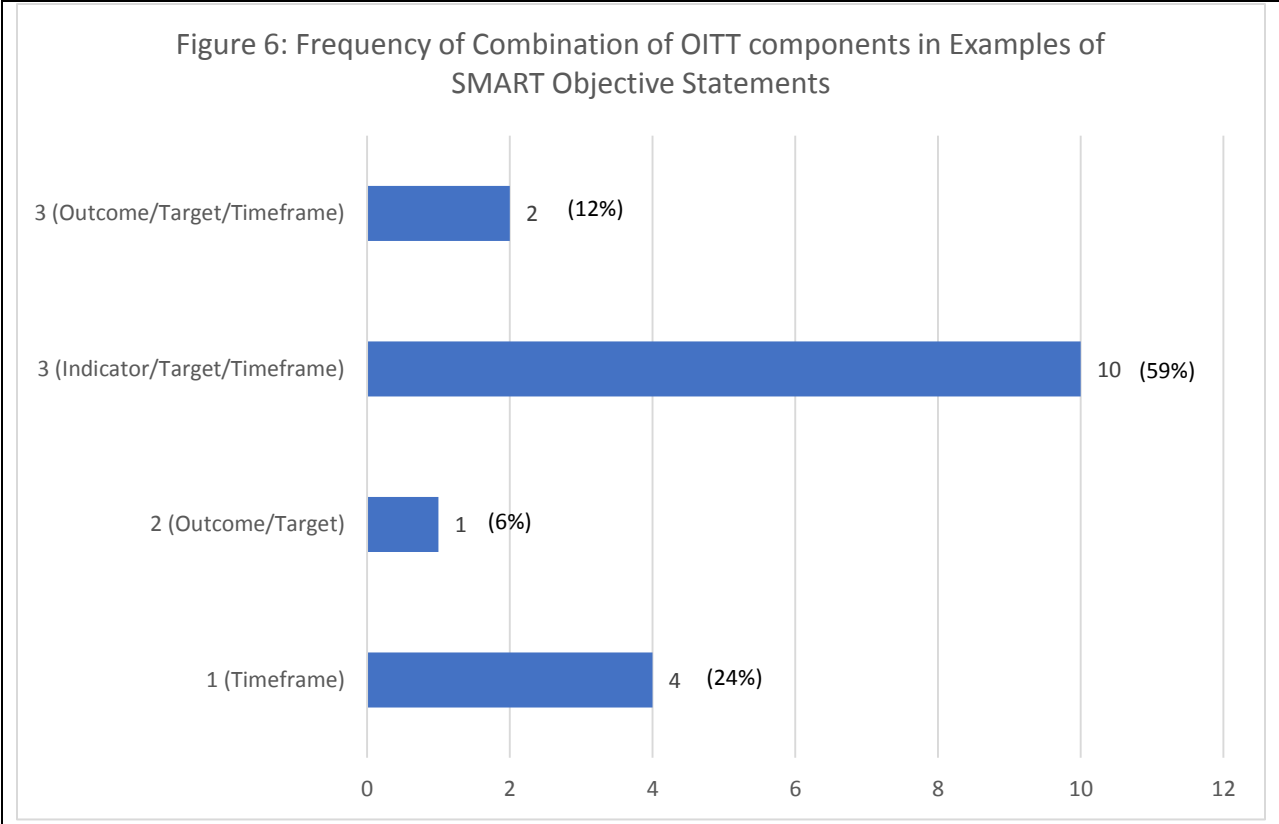
Frequency of OITT Components in Objective statements

Table 2 and Figure 4 shows the distribution of the four OITT components in the 17 objective statements. The most frequent component is the time frame, specified in more than 9 of every 10 statements. The least frequent component is outcome, specified in almost 1 in every 5 statements. Figure 4 shows that while almost three-fifth of statements specify an indicator, almost three quarters of the statements specify a target. The Chi-square test values for the observed differences between the number of statements with a specified outcome and the number with each of the other components are: indicator (X^2=5.92), target (X^2=11.46) and timeframe (X^2=19.57). They are all statistically significant on the Mantel Haenszel test results ($p < 0.05$).

Completeness of the SMART Goal Framework

Table 2 and Figure 5 show the number of OITT components in each objective statement, ranging from 1 (25%) in 4 statements, 2 (50%) in one statement to 3 (75%) in 12 statements. The mean of 2.5 components per State represents an overall 61.8% completeness of the framework of the 17 statements studied. None of the 17 statements contain all 4 OITT components, and therefore none is SMART (Table 2). Figure 6 shows the commonest combination of components is Indicator/Target/Timeframe in about three-fifth of statements. Thus, no statement has a structure with the required combination of OITT components.

Figure 4: Frequency of OITT Components specified in 17 Examples of SMART Objective Statements

Component	Value	Percentage
Outcome	3	(18%)
Indicator	10	(59%)
Target	13	(76%)
Timeframe	16	(94%)

Figure 5: Frequency of Percentage Completeness of OITT Components in Objective Statements

Total = 17 Objectives
Mean % Completeness = 61.8%

25% Complete, 4, 23%
50% Complete, 1, 6%
75% Complete, 12, 71%

Figure 6: Frequency of Combination of OITT components in Examples of SMART Objective Statements

DISCUSSION

The examples of objective statements analysed in this study represent the products of goal setting practice in multidisciplinary health contexts, but the findings may have a wider generalised application beyond the four healthcare organisations. Clearly the types of objectives found in literature suggest that goal setting in healthcare may characteristically be more oriented towards targeted accomplishment of tasks than achievement of specific levels of desired results or outcomes of services. However, the finding of different structures recommended as templates for formulating objective statements indicate that there is no common or harmonised pattern for writing objective statements across different health organisations, even though the CDC templates represent a commendable attempt to standardise the practice of different departments or services within the same organisation. The two structures are clearly divergent: while CDC recommends using TIME-ACCOMPLISHMENT TARGET-MEASURE pattern, the statements of the other organisations indicate ACCOMPLISHMENT-MEASURE-TIME. Although using a particular structure or pattern may be a helpful guide for writing goals, it is the impression of the author, however that it is a less useful tool for determining whether the statement produced is SMART or not – certainly not as important as the goal content or the completeness of the components the statement requires to possess the SMART goal attributes.

In terms of completeness, this study finds that none of the examples of objective statements have a goal framework with all four OITT components. With about 62% completeness, it would seem characteristic of health objectives to contain about 3 components per statement, if these examples are followed. According to the frequency of components in the statements, these examples suggest that goal setters

in the health organisations may be more likely to include a timeframe in every objective or use a combination of indicator, target and timeframe in most objectives than to specify an outcome. Rather than being objectives that state a specific outcome, along with its defining components of indicator, target and timeframe, they are shown to be mostly statements of measurable and timebound indicators but with no mention of the actual short-term goal they should indicate. Thus, the statements mostly lack clarity and specificity of the intervention result to be accomplished, which the indicators, targets and timeframes should be relevant measures of. Therefore, none of the published examples of SMART objectives are really SMART, since they all lack a goal framework that is complete with the four conceptual components required to satisfy all five SMART criteria. It is noteworthy that the majority of statements reviewed are process oriented. Even the SMART example published by Doran (1981), the originator of the SMART criteria, states a task performance, instead of an outcome as the objective to be achieved. While some of the statements may be acceptable as SMART process targets, without a specific outcome, they do not qualify to be SMART objectives if assessed on the OITT framework. Depending on the reliability and external validity of the OITT as an objective setting tool, the inadequate frameworks in the published examples sourced from a wide range of project settings may suggest there is a high prevalence of non-SMART objective statements being used in the health sector.

This observation primarily questions the motives of objective-setting practices in the healthcare sector. Should goal setters set objectives to show the expected changes in task performance (Locke and Latham 2002) or the short-term effect or outcomes that they expect should result from the outputs of implementation of planned tasks (OECD 2002: 28; Ogbeiwi 2016)? Should they state specific changes in the indicators that are only statistical measures of the changes towards a goal (OECD 2002: 25) without specifying the goal itself? What really should be the expected results that goal setters should specify as outcomes in their objective statements? With the terminological confusion surrounding the meaning of an objective (Ogbeiwi 2016), this study gives an impression that the type of accomplishment specified in an objective statement reflects the goal setter's organisational understanding of what an objective really is. Hence, organisations that use the term objective as a generic term may also assert that an objective could be both task (process) and outcome oriented. They may therefore encourage their projects to formulate objective statements that show expected accomplishments at different system levels of task, output, outcome and impact (OECD 2002; DHDSP 2017, DSTDP 2017).

The immediate implication of the findings of this study is that there could be very few projects, if any at all, that have outcome-oriented objectives that are really SMART, if evaluated on this new template of the OITT framework. Nevertheless, this study may be weak in that it examined only sample objective statements and not objectives developed in real project contexts. However, it reveals that the objective statements of many projects that may have used these examples as their objective-setting guides would lack a complete set of components required to formulate a SMART goal framework, including specific outcome, measurable indicator, attainable target and realistic timeframe (Doran 1981; Ogbeiwi 2016). Since according to Locke and Latham's goal setting theory, clear, specific and challenging goals can motivate improved performance towards goal attainment (Locke and Latham 2006), it can be assumed that projects designed with incomplete or defective goal framework are less likely to attain their desired outcomes. Thus, the possibility of a global high prevalence of non-SMART objectives should be a serious concern to all stakeholders in the healthcare sector, since it would remotely imply that many healthcare projects with life-saving significance may be built on them. It should be a worrying thought that many

health projects worldwide may be implementing health plans with no hope of goal attainment, despite any reasonable level of resource inputs.

Therefore, there is a need for projects designed on a framework of objective statements like the published examples studied to review the extent to which their objectives are really SMART. Hence, the above implications raise more questions for further research in real field situations. First, to what extent is the goal framework of objective statements of real projects actually SMART? Second, are projects planned on objectives with a complete OITT goal framework more likely to attain their desired outcomes? These questions should lead to further research investigation of the reliability, validity and efficacy of using the OITT framework as a standard tool for objective setting.

CONCLUSIONS

Writing SMART goals is fundamental to effective planning of results-oriented action. Even though there are many existing goal setting templates and guides, yet it appears none so far currently offer a relevant and complete structural template to aid the construction of written objective statements that satisfy all the criteria for SMART goals. The author proposes that writing objective statements with the four components of the OITT goal framework as a conceptual template might help goal setters formulate better objectives, that are SMART in both their goal attributes and goal content. The objectives analysed in this study may be few examples and skewed towards the goal setting practice of the CDC organisation, but they provide a credible basis to call on programmes and organisations worldwide to review their SMART objective statements.

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Table 1: Published Examples of SMART Objectives reviewed

{	Objective	Work or care area	Context	Objective Type
1.	To develop and implement by December 31, 198__, an inventory system that will reduce inventory costs by $1 million with a cost not to exceed 200 work-hours and $15000 (Doran 1981)	Inventory system	Management	Process
2.	By year two of the project, LEA staff will have trained 75% of health education teachers in the school district on the selected scientifically based health curriculum (CDC 2009: 2)	Health Education	Youth Health	Process
3.	Reduce current operating costs by 5% in breast surgery by March 2012 (Salford NHS 2011)	Breast Surgery	Hospital	Process
4.	Increase the percentage of converted day cases in breast surgery from baseline of 20% to 25% by November 2011 (Salford NHS 2011)	Breast surgery	Hospital	Process
5.	By (month/year), increase the percentage from X% to Y% of providers in county Z that fully adhere to the CDC-STD treatment guidelines for appropriate treatment of gonorrhoea (CDC-DSTDP, 2017).	Treatment	STD	Process
6.	Increase percentage of adult patients with non-resistant TB who completed therapy (within 12 mos.) from 80% to 90% by 2006 (CDC-DTBE, 2017).	Case-holding	TB	Outcome
7.	By June 29 2006, increase the number of training sessions given for HDSP program partners on implementing and evaluating System change from 10 – 14. (CDC-DHDSP 2017: 5).	Training	Heart Disease & Stroke	Process
8.	By February 15 2006, increase by four the number of community health centers in (State) that have incorporated into the clinic system electronic records with reminders of treatment protocols (DHDSP 2017: 6)	Health Information System	Heart Disease and Stoke	Process
9.	To achieve 80 per cent immunization coverage in the next 5 years in district X. (Save the Children 2003: 339)	Immunization	Child Health	Outcome
10	By December 31 2009, increase awareness of signs and symptoms of stroke and the importance of calling 9-1-1 among African American men in (State) from 11% to 15%. (CDC-DHDSP 2017: 5).	Health Education	Heart Disease and Stoke	Outcome
11	The risk of diarrhoea is reduced by 50% in the target population in 6 months. (WHO 2016)	Prevention	Diarrhoea	Outcome
12	By the end of the school year, district health educators will have delivered lessons on assertive communication skills to 90% of youth participants in the middle school HIV-prevention curriculum (CDC 2009: 2)	Health education	Youth Health	Process
13	Improve Operating Theatre productivity from 80% to 90% (Salford NHS 2011)	Theatre management	Hospital	Process
14	From August 2008-2009, establish recruitment initiatives at historically Black colleges and other minority institutions in conjunction with the training initiatives of national partner organizations (CDC-CPH, 2017).	Training	Minority communities	Process
15	By December 31 2008, develop an inventory of staff training and competency needs (Osaki 2008)	Training	Human Resource Development	Process
16	By July 31 2008, develop an information management plan that describes how to identify, collect, store, analyse and correct environmental health data (Osaki 2008)	Health information System	Environmental Health	Process
17	By March 1 2008, begin a research project with the local university on impacts of climate change on our community (Osaki 2008)	Research	Climate change	Process

Table 2: Analysis of the OITT SMART Components in Objective Statements

Obj. No.	Related Task	OITT Components specified in objective statement				No of OITT components	% Completeness	SMART? Yes/No
		Outcome	Indicator	Target	Timeframe			
1	To develop and implement an inventory system	Unknown	Inventory costs	Reduce by $1 million with a cost not to exceed 200 work-hours and $15000	December 31, 198__,	3	75%	No
2	LEA staff will have trained health education teachers	Unknown	% HE Teachers trained	75%	By year two	3	75%	No
3	Reduce current operating costs	Unknown	Operating costs	5%	Mar-12	3	75%	No
4	Increase day cases of breast surgery	Unknown	% Converted day cases	from 20% to 25%	Nov-11	3	75%	No
5	Unknown	Unknown	% Providers that fully adhere to guidelines	from X% to Y%	By (month/year)	3	75%	No
6	Unknown	Unknown	% Adult patients with non-resistant TB who completed therapy	90%	2006 (within 12 mos.)	3	75%	No
7	Increase training sessions given for HDSP program partners	Unknown	Number of training sessions	from 10 – 14.	June 29 2006	3	75%	No
8	Increase community health centers	Unknown	Number of community health centers	Four	February 15 2006	3	75%	No
9	Unknown	Unknown	Immunization coverage	80 per cent	Next 5 years	3	75%	No
10	Unknown	Increase awareness of signs and symptoms	Unknown	from 11% to 15%.	December 31 2009,	3	75%	No
11	Unknown	The risk of diarrhoea is reduced	Unknown	by 50%	6 months.	3	75%	No
12	district health educators will have delivered lessons		% Youth Participants	90%	End of the school year	3	75%	No
13	Unknown	Improve Operating Theatre productivity	Unknown	from 80% to 90%	Unknown	2	50%	No
14	Establish recruitment initiatives	Unknown	Unknown	Unknown	From August 2008-2009,	1	25%	No

15	Develop an inventory	Unknown	Unknown	Unknown	December 31 2008	1	25%	No
16	Develop an information management plan	Unknown	Unknown	Unknown	July 31 2008	1	25%	No
17	Begin a research project	Unknown	Unknown	Unknown	March 1 2008	1	25%	No
	Frequency of components	4	10	13	16			
	% Components	24%	59%	76%	94%			
	Mean number of components					2.5	61.8%	