Review of the Brooke Animal Health Mentoring Framework

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Abbreviations

AHP	Animal Health Practitioner
CAHW	Community-based Animal Health Worker
OIE	World Organisation for Animal Health
RCVS	The Royal College of Veterinary Surgeons
RVC	The Royal Veterinary College, University of London
ToRs	Terms of Reference

Contents **Page**

1.0 Introduction

In 2013 the Brooke developed a competency framework to assess and monitor the clinical quality of animal health services delivered by range of animal health practitioners (AHPs) working in areas where Brooke operates. These AHPs range from veterinarians to para-professionals to community animal health workers (CAHWs), though in practical terms it has mainly been used with para-professionals. AHPs are both private and public (government), depending on the country and area of operation.

This tool has a dual aim of providing mentoring to AHPs to help them improve the care that they deliver and is also used as a monitoring tool to assess the success of Brooke support in delivering quality animal health services.

The competency framework complements other tools to monitor the quality of animal health services which include the mapping of service provision; assessment of owner/user satisfaction and the sustainability of the services.

The initial framework was developed following a review of different approaches used in human and animal clinical quality monitoring, and the final rubric was agreed by Brooke staff (including country programmes) and reviewed by an external equine specialist. Piloting of the framework yielded further improvements. After four years of field use and adaptations of the framework following pilots in Ethiopia, East Africa and Jordan, the framework has been revised into its present format.

2.0 Scope of the review

The current version of the framework is soon to be rolled out across the Brooke country programmes. Before this happens, Brooke has commissioned an external review to asses if it is adequate and appropriate for the intended task. The outcomes of the review will inform decisions around any changes required to the framework and will be used by the Global Animal Health Team (Programmes Directorate) and the Performance and Evaluation Team (Planning and Performance Directorate).

This new version of the framework has not been used extensively in the field (only field testing), and therefore the review will seek to identify if in theory, it meets with the Brooke's requirements. This information will be gathered from discussions with key staff who have both been involved with its development and have used the tool (UK and country programme staff).

Key areas that will be considered are set out as follows and provide the main headings of the report: monitoring results or process; content validity; internal validity; useability; proportionality; in line with good practice in this field.

The review will use information from Brooke documents, discussions with key staff and relevant external references. The full scope of work is set out in the terms of reference (ToRs) in the annexes.

3.0 Findings

3.1 Monitoring results or process

The terms of reference ask if the framework provides information for monitoring processes (defined as inputs and activities) or results (defined as outputs, outcomes and impact), based on the Brooke definitions provided in the ToRs, which are:

- *"Process" issues are indicated by Inputs, Activities, and Outputs. This includes, among other things, the resources (e.g. project funds) we spend on an intervention, the activities that we implement (e.g. a mentoring programme), and the outputs (e.g. the number of mentoring sessions held).*

- "Results" are indicated by Outputs, Outcomes and Impacts. This includes, for instance, how many owners gain sufficient knowledge of how to promote equine welfare (outputs), how many change their behaviour in ways that promote welfare (outcomes), how many animals reach an acceptable standard of welfare (impact).

- *Outputs are the services which result from an intervention. They may also include changes resulting from the intervention which are relevant to the achievement of outcomes. In the Brooke context, these may include the knowledge of good veterinary practice that animal healthcare practitioners gain from being mentored over time.*

- *"Outcomes" are the short-term and medium-term effects that result from an intervention's outputs (effects that have already been achieved, or are likely to be achieved in future). For instance, an outcome of receiving ongoing mentoring from Brooke staff could be that animal healthcare providers consider animal welfare during the clinical process, for example having the ability to recognise and treat pain.*

- *"Impact" is the ultimate result of a development intervention. These may be positive or negative, and intended or unintended, and might be produced either directly or indirectly by the intervention. At Brooke, the key positive impact that we are trying to promote is improved animal welfare. A positive impact could for instance results where animals are healthier over time because they receive better quality healthcare.*

It is also worth considering the Brooke's vision for a functioning animal health system which is:

Brooke will work to, or influence others to, strengthen existing animal health systems through:

- *Competent, confident and compassionate animal health practitioners (as defined by Brooke animal health mentoring framework) with access to referral system and ongoing support*
- *Access to essential medicines, including pain relief, and equipment which is locally available and affordable*
- *Animal health system suitably funded through sustainable business model or government support*
- *Appropriate demand for professional animal health services (accessible, available, acceptable, affordable)*
- *Supportive animal health legislation and policy*

(Based on World Health Organisation principles for universal health coverage)

Taking the vision and the definitions of the individual elements of results and process into consideration, discussions with Brooke staff indicate that there is agreement that the framework monitors outcomes, and therefore results.

However, there may be problem in uniformity in using the terms output and outcome which could cause confusion. For example, in the Brooke East Africa (BEA) Logical Framework, the mentoring framework is used to measure outputs, not outcomes – in this example, **the output** is *quality service (including pain management) delivered by 50 Local Service Providers within BEA supported partnerships,* and **the outcome** to which this output contributes is *improved animal welfare practices adopted by 27,000 youth using 54,000 donkeys to transport goods by cart for commercial purposes in urban areas.*

Outputs usually tell the story of an activity e.g. an improved understanding of equine welfare or the importance of having a clean and fully equipped kit, but they do not address the issue of the effectiveness of the mentoring process on the quality of the services. Outcomes quantify performance and assess the success of the mentoring process i.e. has the quality of the service provision improved due to the mentoring ?

Based on Brooke's definition of results, and having reviewed relevant literature, it is the consultant's opinion that the framework monitors the outcome level of results.

3.2 Validity

3.2.1 Content Validity

This looks at whether the issues tracked are key to being able to assess the required clinical competencies, and are the competencies appropriate and relevant. The framework covers a set of core standards namely Animal Welfare Advocate, Communicator, Clinical Expert, and Clinical Governance. Within each core standard are a number of parameters, some of which result in mark deduction if they cannot be fulfilled e.g. availability of pain relief drugs.

The Brooke defines a competent AHP as:

One that uses evidence-based veterinary medicine in a manner that promotes animal welfare. The Brooke animal health mentoring framework outlines the essential competencies to be used when attending cases in the field; it defines the expected clinical quality while attending animal health needs in low and middle income countries.

When exploring the definition of clinical competency in the field of human health, where there is a greater range of literature than for animal health, various factors are frequently referred to define clinical competence:

Knowledge base; interpersonal skills; diagnostic skills and clinical judgment (history taking, physical examination, differential diagnosis to arrive at a final diagnosis); professional standards (respectful relationships, delivery of healthcare).

Obviously when considering animal care, issues of animal welfare and animal/handler/service provider safety also come into play. Veterinary literature includes definitions of Day One Clinical Competencies expected of vets – this means the minimum competencies that veterinarians are expected to have on their first day of work. The competencies broadly fall into the following categories:

1. Comprehensive patient diagnosis (problem solving skills), appropriate use of clinical laboratory testing, and record management
2. Comprehensive treatment planning including patient referral when indicated
3. Anesthesia and pain management, patient welfare
4. Basic surgery skills, experience, and case management
5. Basic medicine skills, experience, and case management
6. Emergency and intensive care case management
7. Health promotion, disease prevention/biosecurity, zoonosis, and food safety
8. Client communications and ethical conduct

The UK Royal College of Veterinary Surgeons (RCVS) Day One Competence document defines competency as *a concept that integrates knowledge, skills and attitudes, the application of which enables the professional to perform effectively, including being able to cope with contingencies, change, and the unexpected.* The RCVS leaves it up to individual veterinary schools to develop Day One Competency Guidelines and assessment methods.

The Royal Veterinary College (RVC), University of London defines Day One Competencies according to the following headings:

- Underlying Principles - relates to theory within the overall curriculum.
- Professional Practice – communication, ethical practice, reflective practice and lifelong learner, management of the veterinary environment.
- Evaluation of Animals and their Care – handling and restraint, gathering information, general examination, system specific examination.
- Clinical Decision Making – obtaining and handling samples for diagnosis, use of lab equipment and test, use of ancillary diagnostic tools, diagnosis and treatment plan, post mortem examination.
- Care and Treatment – emergency care and treatment, drug and fluid administration, anaesthesia, surgery, euthanasia, husbandry and welfare, nursing

The World Organisation for Animal Health (OIE) has produced a set of recommendations for Day One graduates to *'assure National Veterinary Services of Quality'*. These recommendations are broad and less specific than the RCVS guidelines as they focus more on disease control and prevention, issues of trans-boundary animal diseases and international trade rather than on details such as clinical decision making and treatment. However, they do include sections on animal welfare and communication.

The five areas defined in the RVC Day One Competency Guidelines are all represented in the Brooke AHP mentoring framework. Knowledge underpins the whole clinical assessment, and the core competencies within the Brooke framework of animal welfare advocate, communicator, clinical expert, contents and maintenance of kits and clinical governance are essential for assessing required competencies for handling clinical cases. Some aspects covered in the RCVS and other veterinary competency guidelines would not be possible in many contexts where Brooke operates, but the Brooke framework only includes parameters which are appropriate and relevant to developing and middle-income countries, where resources are often limited.

One area that is not covered by the Brooke framework is the effectiveness of treatment. Although effectiveness can be measured to some extent by the competency of the AHP and uptake of services, to gain a complete picture of the effectiveness of service provision requires animal based welfare

assessments and impact assessments of morbidity and mortality levels over time. Impact assessment is covered in section of 3.5 of the report.

3.2.2 Internal Validity

This refers to the link between the results obtained using the tool to improvements in competency i.e. does an improved score correspond to an improvement in clinical competency. In order to assess this aspect, the tool needs to be broken down into its component parts – can an AHP address all of the parameters that fall below the required standard or do some fall outside of their range of influence ? In the framework guidelines this is differentiated as follows:

- Does the AHP have the **capability** (e.g. knowledge and skills) to improve the competency?
- Does the AHP have the **motivation** (e.g. willingness, desire, enthusiasm) to improve the competency?
- Does the AHP have the **opportunity** (e.g. resources, enabling environment) to improve the competency?

Does the Brooke consider the score as an assessment of service quality delivered by the mentored practitioners, or is it an assessment of their competency? Quality is a measure of the whole service which is delivered to the animal and owners (capability, motivation and opportunity) whereas competency describes the capability and motivation but not necessarily the opportunity. Measuring competency assumes that all criteria needed for an AHP to perform their job to the required standard are fulfilled. There needs to be clarity around the use of terminology and what is being measured.

Most of the parameters in the framework address competency but there are a few parameters which in some circumstance can be attributed to the system *(opportunity)* in which an AHP operates. For example, certain drugs may not be available either in the market place or at times in the country – issues of drug licensing can play a role here – or they may be too expensive. Euthanasia may be difficult to perform due to lack of drugs or issues relating to its legality. Specific procedures are illegal for certain cadres of AHPs to perform in some countries – this is usually more relevant for community animal health workers (CAHWs) e.g. injections, use of injectable antibiotics, euthanasia.

The framework's strength is that it stresses the importance of writing comments to support a score – data has to be matched to an action and feedback to a mentee. For example, if a mentor notes that an AHP clearly identifies the need to administer pain relief but has none in her/his kit, the correct reason for this absence would be recorded – either that the kit has not be replenished but drugs are available or that these drugs are not available or licensed. This is important as it allows both the mentor and also senior vet staff and project managers to interpret the scores and identify either problems that relate to competency or to wider issues linked to resources. This distinction can help programme/project teams and AHPs to identify common issues affecting service quality and to reflect and plan together how to address these challenges.

The key point to consider is how the data is used. If the scores are interpreted together with the remarks, then a clearer picture of the context can be gained. In the absence of comments, important elements will be overlooked and may lead to a skewed interpretation of the data. The conclusion comes down to the knowledge and experience of the data analyst – are they more programmatic rather than competencies based issues.

The system for reporting data to different actors in Brooke is still under discussion. The Brooke Check app is about to be launched and this will record scores but in version 1 of the app, it will not be possible to record remarks . It is planned that a second version of the app will allow remarks to be entered. For the time being, each mentor will have to record comments on a form.

Data is principally used at project and programme level where there should be a good understanding of the context and any limitations that AHPs experience. Obviously the more removed the reader from the field base, the harder it is to know this context and the remarks become more important to allow the reader to interpret the data. It is not yet clear how any context analysis will be reported at global level, since, to the consultant's understanding, only quantitative data analysis will be possible with Brooke Check.

As well as presenting data and trends of scores, Brooke country programmes will be expected to summarise remarks from the frameworks for inclusion in their quarterly reports to Brooke, highlighting any issues that could be useful for programme planning. Where Brooke works with partners, partners will be required to provide this summary in their quarterly reports to the country programme. Within the Performance and Planning Directorate, data is more likely to be looked at as aggregate data – x% of AHPs in a given project/programme operating at x% competency level, with changes from quarter to quarter being tracked.

Using aggregate data should be done with caution since improvements in targets may be diluted by expansion into new areas or new AHPs entering the scheme in an existing area. Additionally, looking at the competency/quality of service levels in isolation gives no context or awareness of issues that may be affecting progress.

Overall the scoring system in the framework will measure competency since the parameters which could be affected by weakness in the system or availability of resources relate to kit and equipment only, and therefore are not likely to have a significant impact of the overall score. It can also be concluded that an increase in score will measure an increase in competency. However, service quality would be a more accurate definition of the framework as this reflects both the competencies and systems/resources parameters.

Range of conditions

It is hoped that once a mentee reaches a certain competency level, they would have the required skills to address most of the cases with which they are presented. At present it is assumed that an AHP would see sufficient cases during mentoring to fulfill this expectation, and that through mentoring they should have the skills to tackle the majority of cases. This may well be true in some circumstances, but common conditions such as wounds would require considerably less skill and experience to assess and treat than systemic diseases. If the cases assessed were of a similar nature, a mentee could score well but may not have the required competencies for all common conditions in their work area. To ensure that AHPs have all round skills and expertise, it is worth considering linking the assessment to a list of key conditions that need to be assessed over a period of time.

At present there is insufficient information available to be able to conclude that the way the tool is being used would ensure competency across a range of key conditions relevant to a particular area. The Brooke is planning a review across its country programmes, once the tool has been in use for one year. To inform the review process country programmes will be asked to develop a list of the ten most important conditions that should be covered, recognising that severity of conditions can vary. The

diagnosis in each case will be logged on Brooke Check, which will allow for a retrospective review.

3.3 Useability - Is the tool appropriate for use in different contexts?

3.3.1 Animal Health Practitioners Cadres

The framework can be described as a gold standard of competency or service quality to which the Brooke aspires. Although the framework was primarily developed for assessing competencies of AHPs, it can also be used to ensure that Brooke veterinary staff in country programmes are working at the required standard, which is of particular relevance when new staff are engaged. If vet staff are to be mentors, they themselves need to be competent and confident practitioners, and the same applies to vet staff in partner organizations.

One point that was raised from discussions with country programmes is the potential for gradual loss of the mentors own technical skills if they are not regularly dealing 'hands-on' with clinical cases. Due to the mentoring nature of the tool, loss of skills should be minimized since it requires the mentor to be thinking through every stage of a case alongside the AHP – clinical reasoning, calculating drug dosage. The framework is intended for use as an active process. Brooke and partner vet staff are also supported through a range of learning resources and training events to ensure that they are up to date with best practice.

With respect to AHPs, the framework can be used for any cadre - veterinarians, para-professionals and CAHWs. However, vets are less likely to be targeted by country programmes because they are generally less affordable and accessible than veterinary paraprofessionals. In addition to this, experience of field testing the tool suggests that either vets fairly quickly reach the required standard, or are more likely to be office based than clinical practitioners, or in some cases view the tool as inferior to their expertise, therefore showing limited interest in it. Currently, its intended target AHPs are para-professionals, though this will vary from country to country, and possibly within country. Field experience indicates that the tool can be used for CAHWs and this requires the mentor to have the necessary understanding and insights into the capacity that a CAHW could reach, is legally allowed to reach and any limitations such as illiteracy. Brooke mentors will be aware of the levels of training and expertise for different cadres, and any legal constraints, and they will assess them accordingly e.g. vets would be expected to offer more detailed differential diagnosis than a paravet or CAHW. The main areas of difference would be under clinical competencies and written clinical records, with the other parameters likely to be fairly consistent across the cadres.

In conclusion, in terms of useability in different contexts, the tool is well adapted for use across the cadres of practitioner with whom Brooke works because the parameters are attainable by any cadre of practitioner, as long as the mentor is able to make adaptations for their level of training and expertise.

3.3.2 Guidelines and Training

Mentors take a one week tailored made Brooke training course where they have to score over 90% to be certified to use the tool, as well as scoring at least 90% when assessed with the competency framework. They have to maintain or exceed this score in their six monthly assessments within their country programme. A set of guidelines have been developed to support mentors and the application of the tool. The guidelines are logically and clearly set out, and importantly, stress the positive mentoring nature of the tool rather than it being applied as a test or a 'clip-board exercise'. Mentors are encouraged to record scores and remarks as unobtrusively as possible ensure that the mentees do not feel they are being tested. Trials to ensure that mentors are accurately recording the data in this way

have yielded results that standardize to within 5% of the scores – the aim is to standardize between 5-10%. This would suggest that there is a sufficient degree of accuracy in recording data in the required manner.

The guidance provided includes the skills set required of a mentor, their training and assessment, and standardization of the tool. Each parameter is explained in details, with advice on how to deal with common problems. The guidelines are clear and relevant, with practical examples of applying the framework, and stress the nature of the tool as a mentoring system, not a testing framework.

3.3.3 Mentoring skills

Being a skilled mentor comes more easily to some than others and this is an area that was identified by country programme staff as requiring a significant amount of input to ensure that individuals have the capacity to develop a positive working relationship with their AHPs. This relationship is key to encouraging and motivating providers to engage with the mentoring scheme. Although many of the required skills are addressed through the Training and Facilitated Adult Learning Courses (delivered by the UK Global Animal Health Advisors and trained international programme staff), field staff identified this as an area that requires more input and consideration, and possibly additional guidelines and support.

In certain cultural contexts AHPs may feel undermined by the presence of a mentor, even if the person is very sensitive and non-intrusive, and these situations may have to be considered on an individual basis to decide how the tool can be applied. The Brooke has already identified this as a risk, and aims to mitigate for this by stressing that the tool should be sensitively introduced through relationship building with practitioners. This is clearly set out in the training guidelines.

There seems to be on-going need to provide training and support to help Brooke staff and partners develop their mentoring skills, and this should be monitored and reviewed after one year.

3.3.4 Multi species Framework

A multi-species framework has been developed, based on the equine framework. This was done in response to a request from the Ethiopian Government to apply the framework to all species of livestock as well as working equids.

Although the multi-species framework is only being piloted in Ethiopia, feed-back from the three country programmes consulted (India, Kenya and Ethiopia) indicates that the multi-species framework has a number of advantages. Firstly it can be used to assess clinical competency in areas where equine cases are limited and frequently unavailable, for example where owners are not keen to take their equids to AHPs. Since the competencies are similar, using the framework with a different species can still provide a strong indication of competency levels that would be applied to equine cases.

Possibly of greater importance is the fact that practitioners seem more motivated to be mentored through the multi-species framework because they feel that improving their skills will result in better financial returns and recognition from their clients, community and supervisors. In many places, equine cases contribute only a small percentage to the overall case load, and AHPs are less interested to be mentored when the returns they see are relatively small. Feedback from some country programme staff suggests that using a multi-species approach is more likely to result in sustained competency levels when mentees have reached the required level and the Brooke completes its project in an area. The training guidelines for the equine framework could be adapted to a multi species framework.

How introducing a multi-species framework would work in practice would require thought and each country will present different challenges but this is a very important point to consider in providing sustainable quality services for equids.

In Ethiopia there is a relatively structured government system of animal health service provision, and at present the multi-species framework is being used in some areas with the support of local government, though for it to be used more widely advocacy work at central government level may be required. Some local government offices are offering rewards in form of scholarships to highly performing practitioners. Another motivating factor is the ease with which Animal Health Auxiliary students who have been mentored with the Brooke framework and who perform at a high level, pass their statutory certificate of competence which is required before they can start work.

It is important to review and document the experiences of using the multi species framework. Its use would allow for better and closer engagement with practitioners, particularly those with a small equine case load. Integrating the equine framework within a multi-species framework would ensure it is relevant across a range of situations, with the likelihood of more sustainable and long term benefits.

3.4 Proportionality – is the time invested in using the tool proportional to the results and the information gained ?

3.4.1 Animal Health Practitioner Motivation

In general AHPs seem very motivated to use the framework and enter into a mentoring scheme as they can identify the benefits from improving their services. These benefits include better business returns, recognition by the local community and clients, recognition within the animal health system. AHPs feel that this framework fills a gap in providing continuing development, especially if they are in the private sector.

Some AHPs will fail to show enthusiasm or interest in the scheme, and project staff would agree to stop working with a particular practitioner if the time investment is simply too great for limited or no return. This can be the case for those who see relatively few equine cases. Often practitioners may begin by mainly seeing the advantages of improving their clinical skills but over time, they also understand the welfare aspect as being integral to delivering quality services.

The tool has only been in use for a relatively short time and it is hoped that as more AHPs become involved, it may encourage those who are less keen to join the scheme, if they can see the advantages gained by others.

Introducing a multi-species framework across Brooke programmes could lead to improved interest as AHPs will be able to use it for all their clinical work. Using practitioners who are consistently meeting and exceeding the required competency levels to mentor others is being explored, though it is unclear how much motivation there would be for this within the private sector.

3.4.2 Frequency of use

The Brooke guidelines recommend that the tool is used once every three months per mentee at a minimum. Feedback from Ethiopia and India country programmes indicates that it is used more frequently, often at monthly intervals as this is conducive to building the mentor-mentee relationship and yields better results. Brooke vets or partners will take any opportunities to use the tool, with a

recorded assessment being done every quarter. Frequent visits can both motivate and maintain momentum, especially for AHPs who are less willing or performing poorly.

In Kenya, though the tool is popular with AHPs, the tool is used quarterly due to the problems of finding sufficient equine cases. The multi-species framework has not been implemented here though there is interest to consider its use to over-come this problem.

The guidelines of using the tool on a quarterly basis as a minimum is a good baseline, and mentors should be encouraged to use the tool more frequently where possible. Introducing a multi-species framework would help mentors to fulfill and possibly go beyond the guidelines.

3.4.3 Resources

The tool has been described by programme staff as expensive and intensive to use but the benefits are considered to be worth the investment. The number of mentees followed by one person ranges from 15 to 35 depending on the context – e.g. distance travelled, number of cases available.

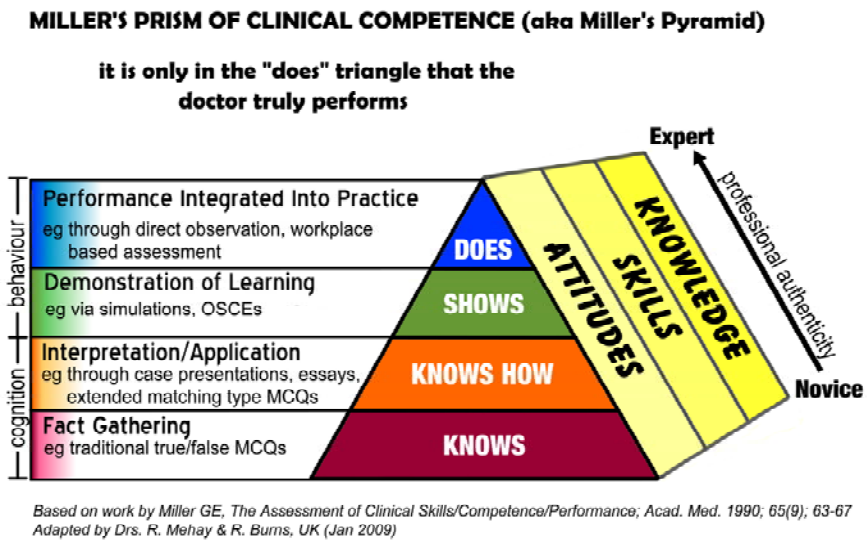
The benefits of the system to both capacity building and monitoring are recognized. In one country office it is reported as having reduced the monitoring work burden as this has become a regular part of work rather than having to do large annual surveys, where it was often difficult to find enough equine cases.

The tool is seen as having long term potential in several ways: if it can be integrated into the country or area animal health system (principally for areas working with government), then it provides an opportunity to sustain the gains made through Brooke projects once they end, particularly if a multi-species approach is in place. This is probably more complicated in areas where a private system operates as it would require some legal framework to ensure that providers are implementing the system, and where veterinary paraprofessionals are supported by a vet running a business, the tool may need to be integrated into the private business model. There is a hope to interest animal health training institutes in adopting the framework, with the aim of producing more competent graduates.

Therefore, given the potential for improvement in the quality of animal health services in the short and long term, and the use as a monitoring tool, the framework's advantages seem to outweigh the heavy use of resources. This is something that will require careful monitoring as it is rolled out across the Brooke programmes and over the next two to three years.

3.5 Is the tool in line with good practice in this field

As a concept, outcome or competency based education is increasingly being recognised as the best way to support students to develop the necessary skills to be able to do a particular job, with curricula being centred around these skills. Clinical competency based learning is increasingly accepted as good practice in the field of veterinary education, focusing on what a veterinarian should be able to do rather than simply know. Veterinary, medical and other educational literature has many references to Miller's Hierarchical Model of Clinical Competence, and the literature emphasises that although all levels need to be assessed, the level of 'does' should be the priority in a medical curriculum – the levels progress from *knows, knows how, shows* to *does* as the end point.



UK veterinary schools are being encouraged to review their curricula to focus more on graduate performance rather than course content. This is reflected in the RVC Handbook for Day One Competencies for Veterinary Graduates which aims to

Provide a clear breakdown of the competencies into their associated skill elements and to identify the knowledge, behaviour, attitudes and skills that are expected of every RVC veterinary student by the time of graduation.

The World Organisation for Animal Health (OIE) guidelines for veterinary education core curriculum identify the following as essential day one competencies for any veterinary graduate*:*
The student becomes comfortable with and proficient at completing an appropriate physical examination; taking a complete history from a client; using clinical reasoning to develop differential and final diagnoses and diagnostic and treatment plans; and communicating effectively, both verbally and in writing, with clients, colleagues and support staff. Although students should be able to apply these skills to multiple animal species, the focus should be on applying these skills to the major animal species of importance to the Member Country.

Competency based learning identifies the need for both technical (e.g. clinical competencies) and non-technical competencies (e.g. communication skills).

These range of competencies are certainly mirrored in the Brooke Animal Health Mentoring Framework, in the mentoring ethos behind the framework and the system which supports its implementation, namely, the Animal Health Mentoring Guidance Notes and the Assessors Training Course.

However, competency guidelines for veterinary and para-veterinary graduates generally focus on day one competencies rather than on-going development of competencies, particularly in high income countries where there are usually well established systems of continuing professional development. Competency guidelines tend to be used in an educational setting for students rather than for practicing graduates, and are based on a broader range of tools than a single framework. While individual

programmes and projects may have internal assessment frameworks, a review of available literature has not yielded any standardized competency framework for the animal health provider cadres.

Approaches to assessing paravet and CAHW competencies in low and middle income countries are usually less structured than the Brooke's approach but often look at similar issues such as ability to handle animals correctly, clinical examination, differential diagnosis, correct treatment and dosing, kit contents and management (15,26,29,35). Due to the ad-hoc nature of support visits, it is more likely that knowledge rather than clinical competencies are assessed since the CAHW may not have a case on hand. In pastoral communities, regular contact with CAHWs can be more challenging. Support visits and refresher trainings are often integral parts of community-based animal health projects to support the development of quality service provision.

In the field of human health in low and middle income countries, there is more literature available on quality assurance schemes that look at a range of issues including the quality of care. From the literature, it is evident that as in animal health, human health has the same challenges of provider quality assessment in low income countries due to uncertain training and regulatory standards, and high variability among providers' levels of training or government levels of oversight. In rural areas these challenges are multiplied many fold.

References are made to work-based competency frameworks for health workers and although there are limited examples of such frameworks, assessed parameters include sterility of equipment, cleanliness of the environment, and performance of clinical interventions. It is also noted that direct observations of clinical practice *has been shown to provide an effective, and non-biased, tool for evaluating a range of practices* (18).

Another approach that is increasingly considered as good practice, particularly in the field of human health, is using participatory impact assessments (PIA) to measure the quality and effectiveness of service provision. For animal health, participatory impact assessments can look at morbidity and mortality levels of animals in a particular community and track changes over time, which is an indicator of the effectiveness of the services provided. As mentioned in section 3.2.1, PIA is a tool which would complement the animal health monitoring framework and other Brooke tools (SEBWAT, Owner Based Monitoring, service uptake) as it provides evidence of impact on the animals as well as information on use of the services by a community. Using the competency of an AHP and use of their services as a measure of a quality service is certainly good practice, but it does not provide the full picture. Issues such as drug quality, correct diagnosis, targeting the key diseases/conditions, preventative health care and understanding service uptake (e.g. how people prioritise different animal health problems, gender issues related to service use) and impacts on the animal population can be triangulated with competency assessments through PIA and participatory epidemiology studies.

Based on available literature and the consultant's own experience of working in animal health services, the Brooke framework and mentoring scheme is in line with current good practice in both veterinary and non-veterinary education. The focus in high income country veterinary education is now on competency based learning and observation of working practice. This is an approach adopted by the OIE for its member countries, which is relevant to the Brooke's programme areas.

4.0 Recommendations

4.1 Outcomes and outputs

Based on Brooke's definition of results, and having reviewed relevant literature, it is the consultant's opinion that the framework monitors the outcome level of results.

For some terms like ***outcome*** and ***output*** are part of their everyday language, whereas others will be less familiar with this type of terminology especially as Brooke works across a number of languages. Confusion could easily result from using both these terms in relation to the quality of animal health services, as shown in the example if the East Africa Regional Programme log frame compared to the Theory of Change document.

There is a Brooke glossary that clearly defines these terms. It is important to be consistent in the use of these terms, as defined in the glossary, and how they are applied across the Brooke.

4.2 Scoring system

At present one score is awarded as a total of all parameters assessed, irrespective of the nature of the parameter in a given context (competency versus system). Parameters linked to resources and systems will be about kit contents (drugs and equipment), and the legality of undertaking specific procedures for different cadres of AHPs.

At project level this should not be problematic since the remarks recorded provide the context and should be used to identify non-competency based issues (defined as ***opportunity*** in the training guidelines). Mentors would be expected to have an in-depth understanding of the local context to interpret the findings accurately. It does become more difficult to interpret the percentage scores when there is no context available, such as when aggregate scores are used or if no comments are included as part of the analysis. (see **4.3 Data Analysis**).

If the Brooke wants to differentiate between service quality and competency, particularly when aggregate scores are being used, it may want to consider adding a resource/systems column to record problems areas as a score. Using this approach would allow trends in systems based challenges to be followed as well as identifying key issues that may be common across a project, programme or whole country, which would support the Brooke in efforts to lobby for improvement in services and education.

Feedback from one country programmes suggests that this might be a helpful distinction and it will become more relevant if the Brooke is able to introduce the framework to non-Brooke partners (e.g. government, training institutions). Identifying these resource based parameters could help put sufficient focus on issues that relate to ***opportunity*** (or lack of it) rather than them getting overlooked or hidden within the score - it can be a much harder and complex area to influence than on-going mentoring to improve performance.

Using the term service quality would be a more accurate reflection of what the framework measures.

4.3 Data Analysis

A problem has been identified with the use of aggregate data from a country programme or region if it is used to monitor progress against logical framework targets. For example, in a given country, the target could be for 80% of AHPs to be working above a 75% competency level by a certain time. Where new

project areas are added or new AHPs are included in a programme, this target becomes less easy to attain, since progress achieved will be diluted by the programme expansion.

In order to get a clear picture of progress, competency scores would should be aggregated either for projects with the same time frame or for completed projects, or for cohorts of AHPs who have been mentored over the same length of time e.g. if a project starts with 200 AHPs but after two years they have 300, aggregating data from all the AHPs is likely to give a false impression of the impact on service quality as some AHPs will have received considerably more support.

In addition to this, some level of context analysis would complement the aggregate data and the numbers and percentages in the log frames, as a way of interpreting trends, for example by using annual report summaries of issues resulting from use of the tool. Without being familiar with the Brooke Check app, it is difficult to suggest how the scoring system could be adapted to incorporate qualitative data resulting from the framework. However, it is important for Brooke to devise a way of analyzing qualitative data alongside quantitative date – the scores alone will not give a true picture of the situation.

4.4 Guidelines and AHP Competencies

It would be worth considering how to include a range of conditions/diseases that need to be assessed before an AHP is deemed to be providing the required standard of service. This would ensure that AHPs are able to address the common cases in their area.

Periodic reviews of cases by mentors and senior country vet staff would identify the range of cases being seen and flag any gaps that require attention. It is clear that for some mentees it is challenging simply to find equine cases so these should be guidelines rather than a mandatory requirement.

The Brooke is planning a review across its country programmes once the tool has been in use for one year. To inform the review process country programmes will be asked to develop a list of the ten most important conditions that should be covered, recognising that severity of conditions can vary. The diagnosis in each case will be logged on Brooke Check, allowing for a retrospective review.

As noted, developing mentoring skills can take a considerable time, and country programmes together with Brooke UK should periodically review mentors non-technical skills to assess mentors and their trainers' requirements for further capacity building support.

4.5 Resources

The length of time that it takes for service providers to be classified as competent in the delivery of quality health care should also be monitored to gauge the use of resources by different projects within a country programme and also by a country programme.

4.6 A multi-species framework

Brooke should consider adapting the framework to cover all species and introduce this as the framework of choice across its programmes for the reasons explained in section 3.3.4. i.e. better motivation of AHPs, more opportunity for mentoring, long term sustainability of competency levels.

The multi-species framework has potential for use on a wider scale with other organizations and institutions working in animal health – it would be more relevant and wide reaching than an equine specific framework. However, the availability of resources (human and financial) to implement a

mentoring scheme is likely to be a limiting factor particularly for developing country governments and NGOs, and the cost implications and cost benefits would have to be carefully assessed. Due to this limitation, there may be more scope for its use within training institutions as a Day One Competency Framework for veterinarians and paraveterinarians.

In order to influence key institutions and organizations such as OIE, FAO, governments and INGOs, supporting evidence from the field would help introduce the concept of a competency based framework and mentoring scheme. For example, Brooke could encourage current or potential partners who implement wider animal health projects, to pilot the framework across all species. Using pilot information and experiences from implementing the tool across Brooke programmes would allow for adaptations to be made to the current framework.

Together with the experiences of the use of the framework by the Ethiopian government animal health services, a short discussion paper could be produced, which focuses on some of the main elements of this review – namely validity, useability, resources and best practice.

4.7 Participatory Impact Assessment and Participatory Epidemiology

The Brooke has a number of tools that are used to measure outcomes and impact. The main tool for measuring impact on equine welfare is SEBWAT. SEBWAT measures change in individual animal based indicators, recording the symptoms e.g. wounds, lameness, body condition. However it does not record disease diagnosis and therefore it does not give an overall welfare status that takes other elements into consideration such as disease related morbidity and mortality rates.

Undertaking structured PIAs every two to three years along with more targeted participatory epidemiology studies would complement the tools that Brooke is using, such as SEBWAT and the competency tool. PIAs would provide evidence of impact on equine health and welfare alongside other potential benefits as previously detailed. PIA would also be a means of collecting information to look for evidence of progress towards Brooke's vision for functioning animal health systems.

References 14, 23, 24, 25 and 29 provide examples of how PIA and PE have been used effectively in animal health programmes.

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Annex 1

Review of the Healthcare Work-Based Assessment
Terms of Reference - September 2017

Overview
This document sets out the terms of reference for a consultant to review Brooke's Healthcare Work-Based Assessment (WBA) tool. Brooke would like to review the design and use of this tool, to ensure it is adequate and appropriate for the tasks it is intended for. The results of this review will be used to identify what revisions (if any) should be made to the tool, and will be used by:

- Brooke UK's Global animal healthcare team (Programmes Directorate)
- The Performance & Evaluation team (Planning & Performance Directorate)

Background
Brooke is an international animal welfare charity dedicated to improving the lives of working horses, donkeys and mules. Operating in Africa, Asia, Latin America and the Middle East, we reach over 2 million working animals – more than any other organisation. We employ around 900 staff worldwide, including vets, animal welfare experts and development specialists. Working donkeys, horses and mules make up approximately 112 million of the global livestock population in less developed countries. They support people's livelihoods in a wide range of sectors including; agriculture, construction, tourism, mining, and public transport. It is estimated that working equine animals help approximately 600 million people globally, very often in the poor and marginalised communities.

In Brooke, Global Animal Healthcare refers to the systems that exist to restore or maintain the health in a population of animals, while also ensuring that people do not suffer financial hardship when paying for these services. Our work involves navigating private and government animal healthcare systems to ensure activities build on existing infrastructure. This sustainable approach requires complex interventions with multiple stakeholders at different levels; for example improving veterinary education by working with training institutions or accessing essential medicines by liaising with pharmaceutical companies. In addition, by working closely with primary animal health practitioners, we develop an understanding of their challenges and motivations and can support provision of a good quality healthcare service that responds to the needs of animals as direct beneficiaries. An animal healthcare system does not act in isolation of the people that use and pay for the services. Careful analysis and understanding of issues affecting animal owners and their treatment seeking behaviour identifies opportunities for change, and the facilitation of a process of change, with positive outcomes for the animals.

A key element of our work in all countries are activities to improve the capacity of animal healthcare practitioners (vets, paravets, animal health assistants etc.). Our aim here is to ensure they have the competencies to provide an acceptable standard of care to equine animals. We have developed an approach to monitoring the quality of clinical services animal health practitioners provide in order to help us mentor them over time, and to assess how successful our efforts are. A key element of this is a competency framework called the Work-Based Assessment. Other elements (not in the scope of this assignment) include an assessment of the satisfaction of animal owners and users with animal healthcare services provided, an assessment of the economic sustainability of the animal healthcare service provided as well as mapping of the animal healthcare system.

The Healthcare WBA was first developed by Brooke in 2013, on the basis of a review of different approaches used in clinical quality monitoring in human and veterinary medicine. The concept was developed into a rubric through a participatory approach with Brooke colleagues internationally and reviewed by an external veterinary consultant (Tim Brazil). Further iterations followed pilots in Jordan and Ethiopia. Brooke's East Africa programme team has since taken a lead in implementing the tool, presenting results at the Veterinary Education Symposium in 2016. Other Brooke country programmes are either already using the tool to collect data, or beginning to roll it out. A recent international review of the tool has collated lessons learnt through four years of application.

Aspects for improvement included;

- Clearer guidance required to ensure the tool was objective
- High scores were possible even if practitioners were not clinically competent or caused severe welfare compromise to animals
- There was a focus on use as a monitoring tool rather than taking action to make improvements

This has resulted in a revision of the rubric and additional resources including comprehensive guidance notes and a training course for assessors, to support reliable use of this tool.

Healthcare WBA results are used for two main purposes:

1. Programme monitoring. The results provide an indication of the success (or otherwise) of Brooke's work to build the capacity of animal healthcare practitioners and the animal health system in which they are working. They may also serve for related purposes, e.g. to contribute to deciding if a project has reached its objectives and can be closed down.

2. Veterinary education, through mentoring animal healthcare practitioners in the field or training institution. An initial assessment using the tool allows key competencies and equipment to be determined, and areas for improvement identified. This assessment provides the basis for ongoing mentoring with the service provider about how clinical quality can be improved and to acknowledge good practice. Subsequent assessments are then carried out periodically (at least once every three months); to identify any improvements, and where further mentoring is required. Informal feedback from veterinary education experts at the Royal Veterinary College and Nottingham vet school has been supportive of this approach.

To date, we have done more work in developing the healthcare version of this tool. A version to assess the competencies of farriers (Farriery Work Based Assessment) also exists, but is not included in the scope of this review.

Objectives

As we move into a second phase of use of this tool we have commissioned a review of the concept prior to roll out, there are not yet results available for use of the new version. We would like to gather information on whether the requirements will be fulfilled in theory. It is recognised that it can be very difficult to determine if practical tools are fit for purpose when not used in the field. There is a plan for a second phase of consultation a year following roll out of the new rubric, guidance notes and training course so that use of these tools can be assessed in the field.

The review should provide clear and detailed answers to the following questions. In the consultant's view, does the animal healthcare work based assessment provide a reasonable level of:

1. Content validity e.g. do the issues tracked using the tool properly reflect the clinical competencies we want to assess? Are the levels of competencies appropriate and relevant?

2. Internal validity e.g. if results obtained using the tool show an improvement, does this correspond to an improvement in clinical competencies?

3. Usability e.g. is the tool appropriate for use in different contexts?

4. Proportionality e.g. is the time required to implement WBA proportionate to the value of information gained? (note that the work based assessment tool is also used an intervention to improve animal health services)

5. Does WBA provide data for monitoring results (outcomes), or does it also provide information for monitoring processes (inputs and activities)? This question should be answered with respect to the definitions and explanation provided in the Annex 1.

6. Is the tool as currently configured in line with international good practice in this field?

7. Are there any improvements that could be made to the tool from a programme monitoring point of view?

The reviewer should also comment on any other issues they consider relevant.

Brooke UK has separately looked at the issue of reliability e.g. will application of the tool in the same situation by different testers provide the same (or acceptably similar) results? While this issue is not included in the scope for the review (as it has been separately assessed recently), the consultant should be aware of it.

Scope and methodology
The review should be carried out using a combination of a desk review of documents, interviews with selected staff in Brooke UK and Brooke country programmes, and the consultant's own knowledge and experience. If the consultant is able to travel to London then a practical demonstration of the work based assessment tool can be arranged.

Expected outputs
The outputs from Stage 1 are:

A written report which answers the questions listed in the objectives above, providing evidence and argument for the conclusions drawn. The report should follow the following structure:
- Cover page
- Introduction and scope of the review
- Findings (this should cover the following sub-headings)
  - Monitoring results or processes?
  - Validity

- Usability
- Reliability
- Proportionality
- Is the tool in line with good practice in this field?

• Potential for improvements
• Recommendations
• Annex, with details of documents reviewed, and interviews conducted

2. A presentation / question and answer session, to be held following submission of the report. This may be held virtually (e.g. Skype), depending on where the consultant is based.

Annex 1: Distinction between monitoring processes and monitoring results

This explanation is included to provide the context when considering Question 5 (Stage 1). Development programmes commonly use "results chains" when planning, monitoring and evaluating an intervention. A results chain maps out the causal path by which the intervention is expected to contribute to the ultimate goal. The key elements of a results chain are set out in the diagram. In this diagram:

• "Inputs" are the financial, human, and material resources used for an intervention (i.e. a project or programme).
• "Activities" comprise the work performed by which inputs are mobilised to produce specific outputs. For example: visiting animal healthcare providers at their place of work, observing their clinical practice and providing advice on how to improve this.
• "Outputs" are the services which result from an intervention. They may also include changes resulting from the intervention which are relevant to the achievement of outcomes. In the Brooke context, these may include the knowledge of good veterinary practice that animal healthcare practitioners gain from being mentored over time.
• "Outcomes" are the short-term and medium-term effects that result from an intervention's outputs (effects that have already been achieved, or are likely to be achieved in future). For instance, an outcome of receiving ongoing mentoring from Brooke staff could be that animal healthcare providers consider animal welfare during the clinical process, for example having the ability to recognise and treat pain.
• "Impact" is the ultimate result of a development intervention. These may be positive or negative, and intended or unintended, and might be produced either directly or indirectly by the intervention. At Brooke, the key positive impact that we are trying to promote is improved animal welfare. A positive impact could for instance results where animals are healthier over time because they receive better quality healthcare.

  Our approach to monitoring makes an important distinction between monitoring process, and monitoring results. As indicated in the diagram:
• "Process" issues are indicated by Inputs, Activities, and Outputs. This includes, among other things, the resources (e.g. project funds) we spend on an intervention, the activities that we implement (e.g. a mentoring programme), and the outputs (e.g. the number of mentoring sessions held).
• "Results" are indicated by Outputs, Outcomes and Impacts. This includes, for instance, how many owners gain sufficient knowledge of how to promote equine welfare (outputs), how many change their behaviour in ways that promote welfare (outcomes), how many animals reach an acceptable standard of welfare (impact).

Annex 2

List of Brooke staff consulted

Klara Saville	Senior Advisor in Global Animal Health, Brooke UK
Shereene Williams	Veterinary Advisor in Global Animal Health, Brooke UK
Cecilia Gath	Veterinary Advisor in Global Animal Health, Brooke UK
Ebony Escalana	Advisor in Global Animal Health, Brooke UK
Fionn O'Sullivan	Project Lead Effectiveness Framework, Brooke UK
Alexia Deleligne	Head of Performance and Evaluation, Brooke UK
James Kithuka	Senior Veterinarian, Brooke East Africa
Alemayhu Hailemariam	Senior Veterinarian, Brooke Ethiopia
Saurabh Singh	Senior Veterinarian, Brooke India