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Development of an Encounter Review Standard

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Development of an Encounter Review Standard

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1. Purpose

This paper describes the process followed by New Zealand to develop an “Encounter¹ Review Standard”, to be submitted to the 12th Meeting of the Scientific Committee (SC). The development of the Standard is set as a subtask (“Develop and encounter review standard”) to be fulfilled by 2024 in the [SC’s 2024 Multiannual Workplan](#). The proposed Standard includes clear guidelines for Members and Cooperating non-Contracting Parties (CNCs) for undertaking reviews of encounters with potential vulnerable marine ecosystems (VMEs) in bottom fisheries. The Standard also includes a clear process for the SPRFMO Scientific Committee (SC) to implement when reviewing encounter reviews submitted by Members and CNCs and providing management advice to the Commission.

2. Background

[CMM03-2023](#) provides a detailed description of procedures following encounters that need to be undertaken by Members and CNCs, the SC and the Commission:

32. Members and CNCs shall submit to the Scientific Committee a detailed description of each encounter by vessels flying their flag that resulted in a temporary suspension pursuant to paragraph 28, a comparison of the encounter with the existing model prediction, and suggested management actions to prevent significant adverse impacts on VMEs. Members should provide as much detail as possible to verify whether a VME is likely to be present at the encounter area and/or the surrounding area, whether a significant adverse impact has occurred, and the risk of a significant adverse impact occurring in the future.

33. The Scientific Committee, at its next annual meeting, shall review all encounters reported pursuant to paragraph 28(b) once the relevant Member or CNC has provided its review pursuant to paragraph 32, and provide advice on management actions proposed by the relevant Member or CNC under paragraph 32 and any alternate or additional management actions the Scientific Committee considers appropriate. The Scientific Committee shall:

a) Apply the Convention, including Article 3(2)(a);

b) Consider the detailed analyses provided by a Member or CNC pursuant to paragraph 32 including:

- i. historical fishing events within 5nm of the encounter tow, in particular, any previous encounters, and all information on benthic bycatch;*
- ii. model predictions for all VME indicator taxa;*
- iii. details of the relevant fishing activity, including the bioregion; and*
- iv. any other information the Scientific Committee considers relevant;*

c) review the adequacy of the information submitted pursuant to paragraph 31, including the robustness of the analysis;

¹ 1 The term “Encounter” means catch of one or more VME indicator taxa above threshold levels, as set out in paragraph 28 of CMM-03-2023.

- d) apply the FAO Deep-sea Fisheries Guidelines, including to use the full set of criteria contained therein to identify where VMEs occur or are likely to occur, as well as for assessing significant adverse impacts on such ecosystems, including their associated and dependent species;*
- e) consider whether an area or areas should be closed to prevent significant adverse impacts on VMEs; and*
- f) ensure its advice and recommendations arising from the review are provided with the objective of avoiding significant adverse impacts on VMEs.*

The considerations and requirements outlined in [CMM03-2023](#) are based on the contents of a paper that New Zealand submitted in 2021 to the SC, which described a process to review encounters ([SC09-DW08](#)). The process described in [SC09-DW08](#) was subsequently adopted as an interim encounter review process by both the SC and the Commission, but it has been acknowledged that a more definitive standard should be developed, with an embedded “task” in [CMM03-2023](#) explicitly referring to it:

- 41. By no later than its 12th meeting, the Scientific Committee shall develop an Encounter Review Standard taking into account the guidance contained in paragraph 166(f) of Bottom Fishing Review (COMM11-Doc07).*

While the interim encounter review process provided in [SC09-DW08](#) was only trialled once ([SC09-DW09 rev1](#)), the Bottom Fishing Intersessional Working Group (IWG) at the 11th Meeting of the Commission in 2023 reviewed the interim encounter review process and provided clear guidelines and recommendations ([COMM11-Doc07](#)) to help streamline and improve the process defined in [SC09-DW08](#). The IWG specifically recommended:

- f. Request that the Scientific Committee develops an Encounter Review Standard which:*
 - i. Builds on SC9-DW08 and aligns with the FAO Deep-sea Fisheries Guidelines.*
 - ii. Clarifies the process for identifying the potential presence, scale/extent of the VME and other biologically relevant scales for assessing whether SAI on VME has occurred, and the risk of it occurring in the future, i.e., the multi-scale risk-based approach to assessing encounters with VME indicator taxa, as recommended in Topic 1.*
 - iii. Considers a streamlined, time-efficient approach that meets the relevant requirements of the CMM.*
 - iv. Has regard to the different capacities of Members and CNCPs to undertake and participate in encounter reviews.*
 - v. Operationalises the requirements of paragraphs 31 and 32 of CMM 03-2022, or as amended by COMM 10.*
 - vi. Clarifies whether/how data is to be accessed by other Members for the purposes of the review.*

- vii. *Includes a dedicated section outlining gaps in knowledge and uncertainties when considering how cautious management advice should be.*
- viii. *Clarifies which information should be confidential for the purposes of the review.*
- ix. *In the Member review process:*
 - 1. *Seek a description of the biological and ecological characteristics of the impacted VME Indicator Taxa and an explicit assessment against paragraph 17 of the FAO Deep-sea Fisheries Guidelines in the Member review process.*
 - 2. *Seeks maps showing consolidated multi-taxa bycatches in a large and clear enough resolution for the Scientific Committee to make an assessment of whether VMEs may be present.*
 - 3. *Provides for bathymetry data to be presented in high resolution format.*
 - 4. *Provides information on trawl effort if applicable based on the available data.*
 - 5. *Provides an evaluation of uncertainties in the information presented in the assessment.*
- x. *Considers the merit of incorporating climate change and ocean acidification considerations into the Encounter Review Standard.*
- xi. *Specifically identifies the types of models being referred to (e.g., habitat suitability models or abundance models rather than model predictions).*

Accordingly, New Zealand has considered the guidance and recommendations provided by the IWG when developing the Encounter Review Standard.

3. Development Process

The proposed Encounter Review Standard is based largely on the content provided by New Zealand in [SC09-DW08](#), with some changes to address the recommendations made by the IWG at the 11th Meeting of the Commission in 2023 ([COMM11-Doc07](#)) and suggestions from environmental Non-Governmental Organisations and the Fishing Industry through the South Pacific Working Group.

The structure of the proposed Encounter Review Standard is similar to that of [SC09-DW08](#), where clear steps are provided for both the Member or CNCP and the SC to follow after an encounter has been notified. The Member or CNCP must:

1. Provide a detailed description of each encounter
2. Provide an assessment of whether a VME is known or likely to occur within the encounter area
3. Determine if reopening the encounter area will expose any VMEs to SAIs
4. Identify management actions they consider necessary to prevent SAIs on VMEs

And following on from the assessment by the Member or CNCP, the SC must:

1. Review the encounter(s)

2. Provide advice to the Commission on management actions it considers appropriate for each reviewed encounter.

All the suggestions provided by the IWG and the South Pacific Working Group, sorted by whether they have been addressed by the proposed Encounter Review Standard or not (and the reason/s why), can be found in Table A1. The most significant changes between the Encounter Review Standard and the interim review process described in [SC09-DW08](#) are reflected in Table A2.

4. Future improvements

We acknowledge there are some areas requiring future improvement within the proposed Encounter Review Standard. These include:

1. additional specificity for how catchability should be considered in determining if VMEs are likely to be within the encounter areas and if reopening an encounter is likely to result in SAIs on VMEs
2. determination of the spatial scales at which SAIs should be assessed
3. the specification of a risk assessment approach for assessing SAIs on VMEs
4. the incorporation of climate change and ocean acidification considerations

There is ongoing work to address some, if not all, of these considerations and the proposed Encounter Review Standard should be iteratively updated outside of the proposed 5 yearly review process (see recommendations) as that work is completed.

5. Recommendations

It is recommended that the Scientific Committee:

- **Notes:**
 - That New Zealand has developed a VME Encounter Review Standard for SPRFMO bottom fisheries that builds on SC9-DW08.
- **Agrees:**
 - That the Encounter Review Standard submitted by New Zealand:
 - Aligns with the FAO Deep-sea Fisheries Guidelines;
 - Takes into account the guidance contained in paragraph 166(f) of the 2023 Report of Bottom Fishing Intersessional Working Group (COMM11-Doc07) as required by paragraph 41 of CMM03-2023.
- **Recommends:**
 - That the Commission adopts the Encounter Review Standard submitted by New Zealand;
 - The Scientific Committee shall review, and update if required, the Encounter Review Standard every 5 years, starting in 2029, to ensure that it reflects best practice;
 - The Scientific Committee shall, in addition to the 5 yearly reviews, update the Encounter Review Standard as needed to account for the best available scientific information relevant to determining the presence of VMEs or to assessing adverse impacts on VMEs.

6. Acknowledgements

We are grateful for comments and advice from members of the New Zealand South Pacific Working Group. Particularly we thank Australia's head of delegation for SC Trent Timmiss (ABARES), Andy Smith and Ben Sharp (representing High Seas Fishing Group), Jack Fenaughty (representing Sanford Ltd), Barry Weeber and Cath Wallace (representing ECO) and Karli Thomas (representing the Deep Sea Conservation Coalition) for the useful comments.

7. Annex

Table A1 | Recommended updates to the interim Encounter Review Standard proposed by the Bottom Fishing Intersessional Working Group (IWG), and by members of the South Pacific Working Group (SPACWG) including environmental non-governmental organizations (eNGOs) and Fishing Industry. Each recommendation includes commentary on how it has been incorporated within the proposed Encounter Review Standard. Grey rows indicate recommendations that have not been incorporated within the proposed Encounter Review Standard, with the commentary providing justification for why not.

Source	Recommendation	Commentary
IWG	Builds on SC9-DW08 and aligns with the FAO Deep-sea Fisheries Guidelines.	The proposed Encounter Review Standard updates SC9-DW08. It explicitly requires Members or CNCPs to use Sections 3.2 and 5.2 of the FAO Deep-Sea Fisheries Guidelines when assessing whether a VME is known or likely to occur within an encounter area, and Section 3.3 and para 47 of the FAO Deep-Sea Fisheries Guidelines when determining if reopening the encounter area will expose VMEs to SAls.
IWG	Clarifies the process for identifying the potential presence, scale/extent of the VME and other biologically relevant scales for assessing whether SAI on VME has occurred, and the risk of it occurring in the future, i.e., the multi-scale risk-based approach to assessing encounters with VME indicator taxa.	The proposed Encounter Review Standard requires assessments to be conducted at multiple spatial scales (i.e., within the individual encounter tow track, within the encounter area and within a 5 nm buffer area around the encounter tow track and at the scale of the Management Area (Bottom Trawl or Midwater Trawl)).
IWG	Considers a streamlined, time-efficient approach that meets the relevant requirements of the CMM.	The proposed Encounter Review places the burden of the review process on the Member or CNCP, streamlining the SCs involvement. It also provides provision for the Member or CNCP to defer their review where an encounter occurred less than 90 days prior to the start of the SC meeting, or where the encounter has legal implications that may affect the review process.
IWG	Has regard to the different capacities of Members and CNCPs to undertake and participate in encounter reviews.	The proposed Encounter Review Standard allows flexibility in the approaches used to determine if VMEs are known or likely to occur within an encounter area and for determining if SAls are likely to occur if fishing resumes. This allows Members and CNCPs to tailor encounter reviews, taking into consideration their capacity to participate in encounter reviews as well as the limitations of the data they may deem relevant of use in each review.
IWG	Operationalises the requirements of paragraphs 31 and 32 of CMM 03-2022, or as amended by COMM 10.	The proposed Encounter Review Standard explicitly requires Members and CNCPs to provide a detailed description of each encounter, comparisons of the encounter with habitat suitability model predictions and suggested management actions (sensu para 31 of CMM03-2022). It also requires the SC to review Members/CNCPs encounter reviews, taking into consideration the components identified in para 32 of CMM03-2022.
IWG	Clarifies whether/how data is to be accessed by other Members or CNCPs for the purposes of the review.	The proposed Encounter Review Standard includes an Appendix that identifies relevant data for informing review processes, and where that data can be accessed.
IWG	In the Member or CNCP review process: 1. Seek a description of the biological and ecological characteristics of the impacted VME Indicator Taxa and an explicit assessment against paragraph 17 of the FAO Deep-sea Fisheries Guidelines in the Member or CNCP review process. 2. Seeks maps showing consolidated multi-taxa bycatches in a large and	The proposed Encounter Review Standard explicitly includes: 1. a description of the biological and ecological characteristics of the impacted VME Indicator Taxa and an explicit assessment against paragraph 17 of the FAO Deep-sea Fisheries Guidelines in the Member review process. 2. Requirements for maps to show multi-taxa bycatch data. It also includes a list of relevant characteristics that maps should have. 3. Requirements for maps to include oceanographic, topographical, hydro-physical, or geomorphological

Source	Recommendation	Commentary
	clear enough resolution for the Scientific Committee to make an assessment of whether VMEs may be present. 3. Provides for bathymetry data to be presented in high resolution format. 4. Provides information on trawl effort if applicable based on the available data. 5. Provides an evaluation of uncertainties in the information presented in the assessment.	features (e.g., bathymetry, seamount polygons, hydrothermal vents) as available. 4. Requests for information on historical trawl effort. 5. An explicit request for Members or CNCPS to provide a summary of key points for the Scientific Committee to consider, including assumptions, limitations and uncertainties of their analysis, identifying how those assumptions, limitations and uncertainties are reflected in the formulation of the Member or CNCPS management recommendations.
IWG	Considers the merit of incorporating climate change and ocean acidification considerations into the Encounter Review Standard.	Not explicitly included in the proposed Encounter Review Standard. The SC multi-annual workplan includes a task to “Identify management implications of climate change on habitat and fisheries in the SPRFMO area (Decision 13-2023)”. At the conclusion of that task the Encounter Review Standard can be updated to incorporate climate change considerations as necessary.
IWG	Specifically identifies the types of models being referred to (e.g., habitat suitability models or abundance models rather than model predictions).	The proposed Encounter Review Standard explicitly refers to the need to consider predictive habitat suitability and abundance models in the description of encounters and when identifying the known or likely presence of VMEs and assessments of SAls.
SPACWG	To provide guidance to navigate Members/CNCPS data confidentiality requirements.	The standard provides an option to either 1) establish a data confidentiality agreement on a case-by-case basis, or 2) to withhold data while ensuring the nature of the data being is fully described, along with its limitations, allowing the Scientific Committee to evaluate if the withheld information could materially change the conclusions and recommendations of the review process.
SPACWG	To clarify and facilitate the availability of relevant data to inform the Member or CNCP review process.	The proposed Encounter Review Standard states that the Secretariat may request all Members and CNCPS to provide relevant data (either directly to the Member/CNCP or through the Secretariat) once an encounter occurs. If data cannot be provided by other bottom fishing Members or CNCPS within 90 days since the Secretariat’s request, for example because of confidentiality concerns and time or legal challenges, the Member or CNCP should have the discretion to conduct a review with the information available.
SPACWG	To publish a list of relevant available data to inform the Member or CNCP review process.	The proposed Encounter Review Standard provides a compilation of relevant data sources (i.e., datasets, publications) that may be helpful to inform a review by a Member or CNCP.
SPACWG	To better structure and detail the data to be provided by Member or CNCP.	The proposed Encounter Review Standard identifies the nature of the data required to be provided by the Member or CNCP: ○ Event details ○ Bycatch details (including historical bycatch) ○ Maps (including characteristics such as spatial resolution) Data requirements are streamlined by the inclusion and improvement of well-structured checklists provided in the proposed Encounter Review Standard.
SPACWG	Address lack of adopted methods to identify VMEs and assess risk of impacts to VMEs.	The proposed Encounter Review Standard provides guidance on existing methods that may suit the Member or CNCP capabilities when trying to identify the presence/likelihood of a VME and the risk of exposing VMEs to SAls. Similarly to the Bottom Fishing Impact Assessment Standard, examples and references to relevant methods are provided in an Annex.
SPACWG	Clarify how VMEs are added to the Annex 9 of CMM03-2023 (when appropriate).	The proposed Encounter Review Standard allows the Member or CNCP and the SC to propose registering a VME in Annex 9 of

Source	Recommendation	Commentary
		CMM 03 and updating Management Area Boundaries established in paragraph 14 and Annex 4 of CMM 03 to exclude the VME from areas open to fishing where the review identifies areas as VMEs
SPACWG	Improve the data requirements that a Member or CNCP needs to provide to inform the review process regarding the fishing gear of the vessel that triggers an encounter.	The proposed Encounter Review Standard indicates the Member or CNCP to provide a detailed description of fishing methods used, providing the information needed to evaluate potential impacts, such as net type, net dimensions, trawl-door type, size and weight, footrope dimensions and type, ground gear (bobbins, rock-hopper gear, etc.), range in fishing height off bottom, net opening and any factors affecting gear selectivity.
SPACWG	To publish datasets derived from New Zealand's recent work on VMEs (VME indicator taxa HSI models and historical VME indicator taxa bycatch data)	The VME indicator taxa HSI models are held by the Secretariat and available to Members or CNCPs upon request. The publication of geospatial datasets such as historical VME indicator taxa bycatch is to be done at the discretion of each Member or CNCP, and therefore not part of the proposed Encounter Review Standard.
SPACWG	To clarify that where full disclosure cannot be made by a Member or CNCP, the SC defers consideration of the encounter until full disclosure can be made.	The proposed Encounter Review Standard indicates that when a Member or CNCP, for any given reason, must withhold data, the data being withheld is clearly described, along with its limitations, allowing the Scientific Committee to evaluate if the withheld information could materially change the conclusions and recommendations of the review process.
SPACWG	To provide an accompanying paper to the proposed Encounter Review Standard that highlights and justifies proposed changes to the existing interim process (as defined in SC9-DW08).	The current paper provides commentary and justifications regarding the development of the proposed Encounter Review Standard.
SPACWG	To highlight the application of the Precautionary Approach throughout the proposed Encounter Review Standard.	The proposed Encounter Review Standard provides clear guidelines for Members or CNCPs and the SC to apply the precautionary approach, and explicitly states that SC's advice to the Commission should: • be more cautious when information is uncertain, unreliable, or inadequate; • not use the absence of adequate scientific information as a reason for postponing or failing to provide advice and recommendations; and • take account of best international practices regarding the application of the precautionary approach, including Annex II of the 1995 Agreement and the Code of Conduct.
SPACWG	Allow the vessel triggering the encounter to collect data from within the trawl track and/or the larger surrounding area.	The proposed Encounter Review Standard provides Members and CNCPs the option to conduct a direct assessment to detect the presence or likelihood of a VME in the encounter area. This type of assessment should make use of survey data such as seabed imagery. Whether commercial fishing vessels are to be allowed to stay within the encounter area for the purposes of collecting data should be addressed by the CMM and each Member or CNCP's internal regulations but not by the proposed Encounter Review Standard.
SPACWG	Allow the vessel triggering the encounter to perform a limited number of tows within the same area.	This behaviour may result in further damage if a VME is present in the area, potentially increasing the likelihood of a significant adverse impact (SAI), so has not been incorporated within the review standard.

Table A2 | Significant changes in the proposed Encounter Review Standard in relation to the interim review proceed described in SC09-DW08.

Section	Commentary
Requirements to review encounters with potential VMEs.	This section has been updated to include reference to relevant sections of the current bottom fishing CMM (CMM03-2023). It outlines the procedures for when a bottom fishing event triggers the encounter protocol, and the Member or CNCPs obligations to conduct an encounter review, the SCs role in the encounter review process and the Commissions role in determining the management response. Updates to this section are largely stylistic.
Steps of the encounter review process.	This is a section that was included in the interim Review Standard but has been removed from the proposed Encounter Review Standard because it repeated the following sections that outline the required steps for Members or CNCPs and the SC in the encounter review process.
Member Review	
Member or CNCP provides a detailed description of each encounter.	The proposed Encounter Review Standard requests the following additional information to describe each encounter: 1. The time the encounter occurred 2. The date of the encounter notification 3. Detailed description of fishing methods used, providing the information needed to evaluate potential impacts, such as net type, net dimensions, trawl-door type, size and weight, footrope dimensions and type, ground gear (bobbins, rock-hopper gear, etc.), range in fishing height off bottom, net opening and any factors affecting gear selectivity 4. Target species 5. The composition and weight of all benthic invertebrate bycatch within the tow that triggered the encounter, including but not limited to: • The number of VME indicator taxa encountered; • A description of the biological and ecological characteristics of each VME indicator taxa encountered • The total weight of each VME indicator taxon encountered (including any under encounter thresholds); • The number of other benthic invertebrate taxa (non-VME indicator taxa) encountered; • The total weight of each other benthic invertebrate taxon encountered. This section now includes a description of the characteristics that maps should have to allow the Scientific Committee to assess whether VMEs may be present. This section now also includes information on data confidentiality considerations, options for addressing data confidentiality. It also includes options for addressing legal implications arising from encounters (e.g., ongoing investigations that could lead to legal prosecutions).
Member or CNCP provides an assessment of whether a VME is known or likely to occur within the encounter area.	The proposed Encounter Review Standard requests that the assessment of whether a VME is known or likely to occur within the encounter area should be made on a case-by-case basis through application of relevant provisions in the FAO Deep-Sea Fisheries Guidelines, particularly Sections 3.2 and 5.2, which are embedded within the body of the section. Additionally, the sub-sections describing both the indirect and the direct assessment have been expanded, providing examples and references to help the Member or CNCP conducting the review. For the indirect assessment, specific guidance on the use of spatial predictions of VME indicator taxa and historical bycatch data is now provided.
Member or CNCP determines if reopening the encounter area will expose any VMEs to SAls.	The proposed Encounter Review Standard requests that the assessment of whether reopening the encounter area will expose any VMEs to SAls should be made on a case-by-case basis through application of relevant provisions in the FAO Deep-Sea Fisheries Guidelines, particularly Section 3.3 and Article 47, which are embedded within the body of the section. In the absence of a 'formal ecological risk assessment' specified within this review standard, references to methods and examples that have been used elsewhere have been added to help the Member or CNCP conducting the review.

Section	Commentary
Member or CNCP identifies management actions they consider necessary to prevent SAIs on VMEs.	The member identification of management actions has been given its own section in the proposed Encounter Review Standard. This section requests that the Member or CNCP, based on their assessment of the scale and significance of historical and likely future fishing impacts, provides a description and justification for recommended management actions, if any, that they consider necessary to prevent SAIs on VMEs. This section has been improved by asking the Member or CNCP to summarised proposed management actions the SC to consider, and explicitly asks for the inclusion of assumptions, limitations and uncertainties relating to the Member or CNCP analysis, identifying how those assumptions, limitations and uncertainties are reflected in the formulation of the Member or CNCP management recommendations.
Scientific Committee Review	
Scientific Committee reviews encounters.	The proposed Encounter Review Standard expands this section (with regards to SC09-DW08) and explicitly states that the SC must apply the FAO Deep-Sea Fisheries Guidelines to identify if VMEs occur or are likely to occur in the encounter area. The section also provides clear outcomes that the SC needs to achieve: • determine if a VME is known or likely to occur within the encounter area. • determine if reopening the encounter area will expose any VMEs to SAIs • provide meaningful advice and recommendations.
Scientific Committee develops advice on management actions it considers appropriate and provides advice to the Commission.	This section provides guidance to the SC on the advice it needs to provide to the Commission, using the Member or CNCP management recommendations as a starting point. This section is now explicit that SC's advice and the recommendations arising must be provided with the objective of avoiding SAIs on VMEs. It now also explicitly directs the SC to apply the Convention, including the precautionary approach.
Potential challenges with the review process.	This section has been removed from the proposed Encounter Review Standard, but its contents have been re-distributed across other sections as appropriate. For example, legal implications related to a given encounter are now addressed in Step 1 of the Member or CNCP review process of the proposed Encounter Review Standard. Other contents, such as the lack of VME indicator taxa HSI models for certain taxa are no longer relevant, and therefore have been fully removed from the proposed Encounter Review Standard. The list of VME indicator taxa modelled is provided in an appendix of the proposed Encounter Review Standard.
Appendices.	Improved checklists are included in the proposed Encounter Review Standard for both Members/CNCPs and the SC to consider. Checklists are provided for each step of the review, and they have been improved in relation to the checklists provided by the interim review process described in SC09-DW08; the lists are better structured, and the nature of the data being referred to (in the appropriate sections of the lists) is clearly stated. A compilation of relevant sources of information (e.g., datasets, scientific papers) sorted by year of publication deemed useful to inform encounter review processes has been added to the proposed Encounter Review Standard. A compilation of relevant sources of information (e.g., datasets, scientific papers) sorted by year of publication deemed useful to inform surveys to collect data to help identify the presence of VMEs has been added to the proposed Encounter Review Standard. Guidance and reference to quantitative methods to identify the presence or likelihood of VMEs, as well as to evaluate risks to VMEs, have been added as an appendix.