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Guideline

The SCARE 2018 statement: Updating consensus **S**urgical **CA**se **RE**port (SCARE) guidelines

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A B S T R A C T

Introduction: The SCARE Guidelines were published in 2016 to provide a structure for reporting surgical case reports. Since their publication, SCARE guidelines have been widely endorsed by authors, journal editors, and reviewers, and have helped to improve reporting transparency of case reports across a range of surgical specialties. In order to encourage further progress in reporting quality, the SCARE guidelines must themselves be kept up to date. We completed a Delphi consensus exercise to update the SCARE guidelines.

Methods: A Delphi consensus exercise was undertaken. All members of the previous Delphi group were invited to participate, in addition to researchers who have previously studied case reports, and editors from the International Journal of Surgery Case Reports. The expert group was sent an online questionnaire where they were asked to rate their agreement with proposed changes to each of the 24 items.

Results: 56 people agreed to participate and 45 (80%) invitees completed the survey which put forward modifications to the original guideline. The collated responses resulted in modifications. There was high agreement amongst the expert group.

Conclusion: A modified and improved SCARE checklist is presented, after a Delphi consensus exercise was completed.

The SCARE 2018 Statement: Updating Consensus **S**urgical **CA**se **RE**port (SCARE) Guidelines.

1. Introduction

Adequate reporting of studies is essential in the field of medicine where the results can directly change patient care. Despite this, research continues to highlight reporting deficiencies across multiple study types. This can render results unreliable and unusable, which has both financial and ethical implications. Reporting guidelines are tools developed to provide a framework for authors, reviewers, and editors, as to the minimum essential elements that should be included in a research article. In recognition of this, a form of reporting guidelines exists for most types of research study.

Case reports are studies which describe and analyze the diagnosis and/or management of one or two patients. They have a long tradition in medicine, and continue to play a fundamental role, especially in the reporting of unique or unusual diseases, side effects, or treatment responses [1,2]. Their short and simple nature has made case reports a frequent subject for submission and teaching.

Although case reports are popular and are frequently published [3], guidance as to the minimum essential elements that need to be reported for publication has been minimal [4]. Furthermore, advice to authors that has been provided by journals is varied, especially across different medical specialties. Incomplete description of methodologies and clinical details can lead to incomplete understanding and erroneous conclusions. In order to provide a minimum standard for reporting surgical case studies, the SCARE Guidelines were developed through a Delphi consensus exercise, and published in 2016 (Surgical CAse REport guidelines, www.scareguideline.com) [5]. These were the first guidelines specific to surgical case reports.

Since then, they have been cited over 1000 times and have been utilised by authors submitting case reports to a number of journals [6]. The SCARE guidelines were also listed on the EQUATOR network website (https://www.equator-network.org) and have been endorsed by a number of journals. The value of the guidelines was underscored by follow-up work that demonstrated an improvement in reporting quality of surgical case reports. In the two years since their publication, we have received feedback on the guidelines from users. Here, we update the guidelines through a new Delphi consensus exercise.

2. Methods

The same Delphi methodology [7] was used, as per the original guideline.

2.1. DELPHI development

Our research group recently conducted a before-after study on the utility of the SCARE guidelines [8]. The feedback gained from the authors undertaking this in-depth analysis of the SCARE items was used a structure from which to suggest changes to the SCARE items to improve their relevance and clarity. One observation, for example, was that SCARE components were often composite items, which makes it possible to ignore subitems if authors feel that at least part of the item has been completed. Experts were also asked to comment on each statement and suggest additional statements.

2.2. Consensus group

The Delphi group comprised experts from a range of countries and surgical specialties. Individuals were considered to be “experts” and make valuable contributions if they had experience in reporting and/or reviewing of surgical case reports. The same Delphi group from the inception of the SCARE guidelines was invited to participate. In order to increase the depth and breadth of the group, individuals from the editorial board and reviewer base of the International Journal of

Surgery Case Reports - a key supporter of the guidelines and a journal where they have been implemented as a mandatory requirement for submission - were also invited to participate.

2.3. Consensus round

Potential contributors were contacted via email. Once participation was confirmed, the Delphi exercise was circulated. In the first consensus round, the expert group was asked to indicate whether they agree or disagreed to suggested changes made to each of the 24 SCARE checklist items, on a scale of 1 (strongly disagree) to 9 (strongly agree). A two-week period was given for the initial round of responses and a reminder email was sent after one week to those who had not yet responded. As per the previous Delphi exercise, consensus was defined as greater than 70% agreement for an item change. If this was not reached, the item would remain unchanged.

3. Results

In total, 56 people agreed to participate and 45 (80%) completed the Delphi survey. 16 of these were from the original Delphi exercise in 2016. A summary of the scores is shown below (Table 1). Table 2 shows the revised SCARE guidelines.

4. Discussion

The SCARE guidelines have provided a useful guidance to those writing case reports. Research on their implementation found a statistically significant 10% increase in reporting completeness when utilised [8].

Surgical journals have been slow to take up reporting guidelines. We have previously reported that of the 193 surgical journals listed in the surgery category in the Journal Citation Report 2014, the majority (62%) made no mention of reporting guidelines within their guide for authors [9].

This update to the SCARE guidelines will help further improve the reporting quality of case reports and we encourage authors, reviewers, editors and journals to adopt them. Authors should cite the guidelines in their methods section and upload a completed checklist of compliance for reviewers and editors to inspect. Such checklists will be provided in a variety of formats for easy usage on the SCARE website www.scareguideline.com. Additionally, we would encourage ongoing research to try and gauge the effectiveness of this revised guideline.

This approach to guideline development has a number of limitations. Firstly, there may be overrepresentation of the editors of a single journal – IJS Case Reports. However, this journal has published 3500 case reports and journal editors often work across multiple journals and bring a broad breadth of surgical experience. This was also supplementary to the existing SCARE group – a broad multidisciplinary group representing 21 countries and all ten surgical specialties as well as allied specialties including; dermatology, pathology, oncology, clinical pharmacology, acute care surgery, with many participants also occupying positions on journal editorial boards. Secondly, there are likely to be specific surgical scenarios where other information is pertinent that may not be captured by a generic checklist, we encourage the development of extensions to these guidelines for such scenarios.

Table 1
SCARE 2.0 Delphi scores. Items indicated are changes made to individual sections of SCARE. Score 1 – Strongly disagree Score 9 – Strongly agree.

	Scoring (%)		
	1–3	4–6	7–9
Item 1	4.4	13.3	82.2
Item 3a	2.2	13.3	84.4
Item 3b	4.4	8.9	86.7
Item 3d	6.6	15.5	77.8
Item 4	11.1	11.1	77.8
Item 5a	4.4	13.3	82.2
Item 5b	4.4	13.3	82.3
Item 5d	4.4	17.7	77.8
Item 6	2.2	13.3	84.4
Item 8a	4.4	13.4	82.3
Item 8b	2.2	17.8	80.0
Item 8c	4.4	11.1	84.4
Item 8d	2.2	11.1	86.6
Item 9a	6.6	8.9	84.4
Item 9b	2.2	11	86.6
Item 9c	4.4	6.6	88.9
Item 9d	8.8	20	71.2
Item 9e	11.1	13.4	75.5
Item 9f	2.2	6.6	91.1
Item 10a	2.2	11.1	86.7
Item 10b	2.2	8.9	88.9
Item 10c	4.4	19.9	75.5
Item 10d	4.4	11.1	84.4
Item 11a	2.2	17.8	80.0

Following the above, the revised SCARE statement is shown below.

5. Conclusion

Updated SCARE guidelines are presented which should now be implemented by authors, reviewers, editors and journals with the aim of improving reporting quality of surgical case reports in the literature.

Provenance and peer review

Not Commissioned, internally reviewed.

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Ethical approval

NA.

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None.

Author contribution

RAA - Concept and design, data collection, data interpretation and analysis, drafting, revision and approval of final manuscript; MRB, RF, KK, & AF, data collection, revision and approval of final manuscript; DPO - Design of study, revision, approval of final manuscript. The SCARE 2018 Statement: Updating Consensus **S**urgical **CA**se **RE**port (SCARE) Guidelines.

Conflicts of interest

None.

Research registration number

NA.

Table 2
Revised SCARE guidelines.

SCARE Checklist			
Topic	Item	Checklist item description	Page Number
Title	1	The words “case report” should appear in the title. The title should also describe the area of focus (e.g. presentation, diagnosis, surgical technique or device or outcome).	
Key Words	**2**	3 to 6 key words that identify areas covered in this case report (include "case report" as one of the keywords).	
Abstract	**3a**	Introduction — Describe what is unique or educational about the case (i.e. what does this work add to the surgical literature, and why is this important?).	
	3b	Presenting complaint and investigations – describe the patient's main concerns and important clinical findings.	
	3c	The main diagnoses, therapeutics interventions, and outcomes.	
	3d	Conclusion — Describe the main lessons to “take-away” from this case study	
Introduction	**4**	Background – summarise what is unique or educational about the case. Give reference to the relevant surgical literature and current standard of care. The background should be referenced, and 1–2 paragraphs in length.	
Patient Information	**5a**	Demographic details – include de-identified demographic details on patient age, sex, ethnicity, occupation. Where possible, include other useful pertinent information e.g. body mass index and hand dominance.	
	5b	Presentation - describe the patient's presenting complaint (symptoms). Describe the patient's mode of presentation (brought in by ambulance or walked into Emergency room or referred by family physician).	
	5c	Past medical and surgical history, and relevant outcomes from interventions	
	5d	Other histories – Describe the patient's pharmacological history including allergies, psychosocial history (Drug, smoking, and if relevant, accommodation, walking aids), family history including relevant genetic information.	
Clinical Findings	**6**	Describe the relevant physical examination and other significant clinical findings. Include clinical photographs where relevant and where consent has been given.	
Timeline	**7**	Inclusion of data which allows readers to establish the sequence and order of events in the patient's history and presentation (using a table or figure if this helps). Delay from presentation to intervention should be reported.	
Diagnostic Assessment	**8a**	Diagnostic methods – describe all investigations taken to arrive at methods: physical exam, laboratory testing, radiological imaging, histopathology.	
	8b	Diagnostic challenges – describe what was challenging about the diagnoses, where applicable, for example access, financial, cultural.	
	8c	Diagnostic reasoning – Describe the differential diagnoses and why they were considered.	
	8d	Prognostic characteristics when applicable (e.g. tumour staging or for certain genetic conditions). Include relevant radiological or histopathological images in this section.	
Therapeutic Intervention	**9a**	Pre-intervention considerations – if there were patient-specific optimisation measures taken prior to surgery or other intervention these should be included e.g. treating hypothermia/hypovolaemia/hypotension in a burns patient, Intensive care unit treatment for sepsis, dealing with anticoagulation/other medications, etc.	
	9b	Interventions – describe the type(s) of intervention(s) deployed (pharmacologic, surgical, physiotherapy, psychological, preventive). Describe the reasoning behind this treatment offered. Describe any concurrent treatments (antibiotics, analgesia, anti-emetics, nil by mouth, Venous thrombo-embolism prophylaxis, etc). Medical devices should have manufacturer and model specifically mentioned.	
	9c	Intervention details – describe what was done and how. For surgery include details on; anaesthesia, patient position, use of tourniquet and other relevant equipment, prep used, sutures, devices, surgical stage (1 or 2 stage, etc). For pharmacological therapies include information on the formulation, dosage, strength, route, duration, etc. Include intra-operative photographs and/or video or relevant histopathology in this section. Degree of novelty for a surgical technique/device should be mentioned e.g. "first in human".	
	9d	Who performed the procedure - operator experience (position on the learning curve for the technique if established, specialisation and prior relevant training). For example, “junior resident with 3 years of specialised training”	
	9e	Changes – if there were any changes in the interventions, describe these details with the rationale.	
Follow-up and Outcomes	**10a**	Follow-up – describe 1) When the patients was followed up. 2) Where. 3) How (imaging, tests, scans, clinical examination, phone call), and 4) whether there were any specific post-operative instructions. Future surveillance requirements - e.g. imaging surveillance of endovascular aneurysm repair or clinical exam/ultrasound of regional lymph nodes for skin cancer.	
	10b	Outcomes - Clinician assessed and (when appropriate) patient-reported outcomes (e.g. questionnaire details). Relevant photographs/radiological images should be provided e.g. 12 month follow-up.	
	10c	Intervention adherence/compliance - where relevant how well patient adhered to and tolerated their treatment. For example, post-operative advice (heavy lifting for abdominal surgery) or tolerance of chemotherapy and pharmacological agents	
	10d	Complications and adverse events – all complications and adverse or unanticipated events should be described in detail and ideally categorised in accordance with the Clavien-Dindo Classification. How they were prevented, diagnosed and managed. Blood loss, operative time, wound complications, re-exploration/revision surgery, 30-day post-op and long-term morbidity/mortality may need to be specified. If there were no complications or adverse outcomes this should also be included.	
Discussion	**11a**	Strengths – describes the strengths of this case	
	11b	Weaknesses and limitations in your approach to this case. For new techniques or implants - contraindications and alternatives, potential risks and possible complications if applied to a larger population. If relevant, has the case been reported to the relevant national agency or pharmaceutical company (e.g. an adverse reaction to a device)	
	11c	Discussion of the relevant literature, implications for clinical practice guidelines and any relevant hypothesis generation.	
	11d	The rationale for your conclusions.	
	11e	The primary “take-away” lessons from this case report.	
Patient Perspective	**12**	When appropriate the patient should share their perspective on the treatments they received.	
Informed Consent	**13**	Did the patient give informed consent for publication? Please provide if requested by the journal/editor. If not given by the patient, explain why e.g. death of patient and consent provided by next of kin or if patient/family untraceable then document efforts to trace them and who within the hospital is acting as a guarantor of the case report.	
Additional Information	**14**	Conflicts of Interest, sources of funding, institutional review board or ethical committee approval where required.	

Guarantor

Riaz A Agha.

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