

**Supplementary table 5. Dashboard of priority quality indicators for emergency medical call centers, obtained by means of stakeholder consensus**

Indicator	Yes /No
<b>Material resources</b>	
1. The SAMU's partnership with all the actors of: - urgent medical aid (firefighters, general practitioners, SAMU's corresponding doctors, multidisciplinary health centers, medical transport, medico-psychological emergency cell, regional health agency, prefecture, etc...) - the permanence of care is formalized ( <i>adapted from [5]</i> )	
2. There is a tracking agreement with firefighters	
3. The existence of procedures and protocols is known to all	
4. Procedures and protocols are made available to all personnel concerned	
5. The procedures and protocols you need are easy to access	
6. The methods for triggering the various stakeholders are written and known to all, for: mobile emergency and resuscitation unit (SMUR) / private ambulances / firefighters / civil security / SAMU's corresponding doctors ( <i>adapted from SFMU</i> )	
7. The modalities of choice of intervention vectors (private ambulance / firefighters / other) are defined, at best in an agreement between the various stakeholders (tripartite agreement) ( <i>adapted from SFMU and [26]</i> )	
8. A roadmap is sent to each SMUR either by computer or by fax ( <i>adapted from SFMU</i> )	
9. Situations requiring triggering of effectors before medical regulation (reflexes) are listed and known to all ( <i>adapted from SFMU</i> )	
10. The modalities of access to on-call doctors are defined and known to all SAMU staff ( <i>adapted from SFMU</i> )	
11. The SAMU transmits the information collected during patient care to the receiving department ( <i>adapted from SFMU</i> )	
12. The procedures for triggering the medico-psychological emergency cell (CUMP) are subject to a specific procedure ( <i>adapted from SFMU</i> )	
13. The SAMU has, in the event of a breakdown, a procedure for degraded operating or replacement by another SAMU (having the same regulation software): internet /electrical / telephone / phone software / medical regulation software –breakdown ( <i>adapted from [5] and SFMU</i> )	
14. In case of an Exceptional Health Situation (SSE), the protocol provides for the alert methods of: service managers / hospital management (on-call administrator if necessary) / proximity care establishments depending on the type and number of victims as well as information from health and/or health watch authorities ( <i>adapted from SFMU</i> )	
15. In case of an SSE, the protocol provides for the information of the various establishments receiving the triggering of a rescue plan and its type so that they can be set up to accommodate many victims ( <i>adapted from SFMU</i> )	
16. In case of an SSE, a SIVIC event is created after the activation of SINUS. The SINUS system is triggered from 5 victims. In partnership with the firefighters, the SAMU creates the SIVIC event and links it ( <i>adapted from SFMU</i> )	
17. In case of an SSE, the links with the departmental CUMP and its triggering methods are known ( <i>adapted from SFMU</i> )	
18. In case of an SSE, there is an activation and commissioning procedure for the crisis unit, known and accessible to all CRRA stakeholders; it contains a description in the form of a checklist of actions to be carried out ( <i>adapted from SFMU</i> )	
19. All SSE procedures are available in the crisis room ( <i>adapted from SFMU</i> )	
20. There is a procedure known to all and available in the crisis room to connect to the crisis communication and information software (identifiers, dedicated emails): SIVIC / SINUS /	

various handrails ( <i>adapted from SFMU</i> )	
21. Workstations include at least one dedicated screen for telephony, another for regulation software and another for office automation ( <i>adapted from SFMU</i> )	
22. Agents work with headphones ( <i>adapted from SFMU</i> )	
23. Each workstation is equipped with an adjustable light and an ergonomic chair ( <i>adapted from SFMU</i> )	
24. The telephone system interacts with the medical regulation software (automatic file escalation) ( <i>adapted from SFMU</i> )	
25. Calls can be prioritized into different levels in the waiting room ( <i>adapted from SFMU</i> )	
26. The telephone numbers of the most widely used emergency services or channels are pre-registered ( <i>adapted from SFMU</i> )	
27. The regulation software is coupled with a mapping software ( <i>adapted from SFMU</i> )	
28. A register of remarkable patients is recorded in the regulation software, which makes them easily identifiable on call ( <i>adapted from [13]</i> )	
29. The regulation room equipment includes virtual interconnection with firefighters ( <i>adapted from [3]</i> )	
30. There is interoperability of information systems between firefighters and SAMU with transfer of entered data ( <i>adapted from [3]</i> )	
31. The SAMU is connected to the Emergency Call Location Platform ( <i>PFLAU</i> ), to provide caller location data during an emergency call ( <i>adapted from SFMU</i> )	
32. There is a regular database backup, stored remotely ( <i>adapted from SFMU</i> )	
33. The SAMU has a phone book with the direct numbers of the services likely to receive patients referred by the SAMU ( <i>adapted from SFMU</i> )	
34. A radio and telephone communication recording system works 24/7 ( <i>adapted from SFMU</i> )	
35. Recordings can be replayed immediately if necessary by the parties who took the call ( <i>adapted from SFMU</i> )	
36. Recordings are kept according to the recommended deadlines ( <i>adapted from SFMU</i> )	
37. The unit has Digital Enhanced Cordless Telecommunications ( <i>DECT</i> ) and telephones in sufficient number; their location is appropriate	
38. Staff are trained in the use of the software they use	
39. Telephone communication between the different units of the institution is simple and fast	
40. The crisis room has radios (on channels dedicated to SSE) ( <i>adapted from SFMU</i> )	
41. The main numbers are quickly accessible and ideally displayed in the crisis room: neighboring SAMUs / zonal SAMU / firefighters / police / regional health agency / prefecture / civil security ( <i>adapted from SFMU</i> )	
<b>Human resources</b>	
42. The SAMU manager is a hospital practitioner, emergency physician, with main activity within the SAMU. He is trained in pre-hospital care by a university qualification and by professional experience of at least two years in a SAMU-SMUR; he has received appropriate training to his function, offered by management (Decree n ° 2016-291, 2016) ( <i>adapted from SFMU</i> )	
43. A doctor manager of the CRRA is designated and his role is formalized	
44. The SAMU has a well-sized team of medical regulation assistants (ARM). * ( <i>adapted from [5]</i> )	
45. The ARM is a medico-administrative assistant with specific training in emergency call management ( <i>adapted from SFMU</i> )	
46. The role of the ARM is specified in a document (job description) ( <i>adapted from [5]</i> )	
47. The ARM function is, during the period when he assumes the activity of regulatory assistant, exclusive of any other function ( <i>adapted from SFMU</i> )	
48. The ARM participates in the act of medical regulation under the responsibility of the MR ( <i>adapted from SFMU</i> )	

49. The work of ARM is secure **	
50. The SAMU has a well-supervised team of ARMs ( <i>adapted from [5]</i> )	
51. The SAMU has a well-sized team of MRs: number of regulatory lines (urgent medical aid and ambulatory care permanence) compared to the number of calls ( <i>adapted from [5]</i> )	
52. All positions are filled; the service schedule does not include a vacant slot ( <i>adapted from SFMU</i> )	
53. Medical regulation time slots are defined for: ARMs / MRs	
54. Medical regulation time slots are respected for: ARMs / MRs	
55. At least one MR is permanently on duty at his workstation ( <i>adapted from [5]</i> )	
56. The call handling and resulting decisions are carried out under the responsibility of the MR ( <i>adapted from SFMU</i> )	
57. The MRs of urgent medical aid all have qualification in emergency medicine; otherwise, they have acquired professional experience of at least 2 years in an emergency department, and are in the process of validating an emergency medicine diploma ( <i>adapted from SFMU</i> )	
58. The involvement of the SAMU within the emergency network is organized, in particular by the appointment of a referent doctor (medical director of the SAMU) ( <i>adapted from [5]</i> )	
<b>Quality approach</b>	
59. The SAMU provides (initial and continuous) training for SAMU's corresponding doctors ( <i>adapted from SFMU</i> )	
60. Scientific watch and internal dissemination of external recommendations are organized for emergency medicine and medical regulation ( <i>adapted from [5]</i> )	
61. The ARMs are supported by their peers and supervisor upon their arrival for a training period alternating between theoretical courses, practical workshops with simulation and scenario, work experience in CRRA in double listening, then progressive empowerment according to assessment by managers and tutor ( <i>adapted from SFMU</i> )	
62. The SAMU participates in departmental / prefectural exercises organized with the SAMU, firefighters and the prefecture, the regional health agency, the police, civil security, ... ( <i>adapted from SFMU</i> )	
63. A regular analysis of the deviations from the agreement between firefighters and SAMU is set up: firefighters-SAMU joint meetings are planned (defined frequency)	
<b>Call handling</b>	
64. Each effector sends a report to the CRRA ( <i>adapted from SFMU</i> )	
65. All the reports are entered into the medical regulation file ( <i>adapted from SFMU</i> )	
66. The reason for call is always contained in the patient file ( <i>adapted from [3]</i> )	
67. Minor emergencies are put on hold to allow a quick answer to assess the severity of other calls ( <i>adapted from [3]</i> )	
68. Relations with ambulatory care permanence doctors are of sufficient quality to allow optimal call handling	
69. It is easy to transfer a call to another medical regulation center	
70. For any call transfer from one medical regulation center to another, the initial ARM ensures that the call is received by the receiving center. In the case of medical transmission, a direct exchange takes place between the two MRs ( <i>adapted from [40]</i> )	

\* The equation for the required number of ARMs is found in the recommendations of emergency medical societies

\*\* Work security of ARM depends on: size of the regulation room / organization of the regulation room (proximity to workstations) / equipment available/soundproofing of the regulation room/computer software performance/organization of work (hours, breaks...)/ existence and accessibility of regulatory protocols / ease of recourse to other doctors in case of questioning, doubt, discomfort about a care / availability of supervisors in the event of a problem or discomfort related to work or personal life / continuous training / participation in service meetings

