

APPENDIX

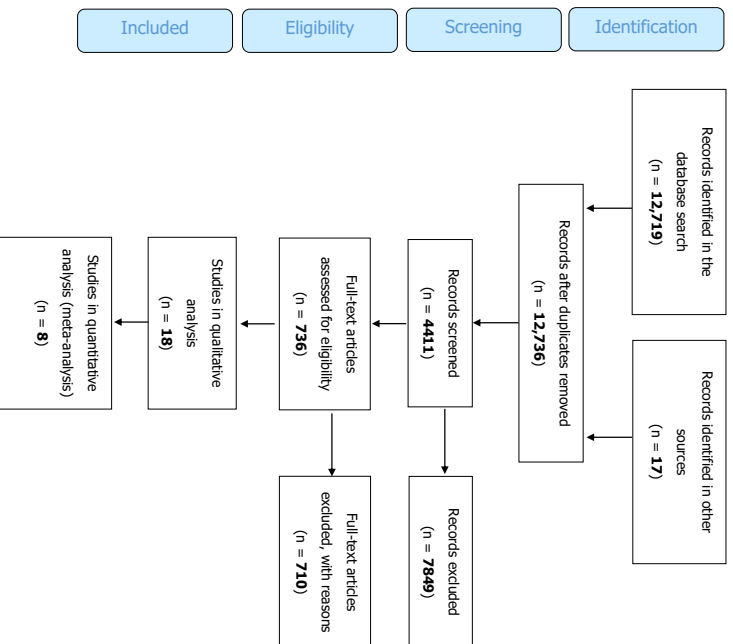


Fig. 1. Prisma Flow Diagram

Table 1. Prisma Eligibility Criteria

| Criteria | Inclusion | Exclusion | Records |
|------------------------|----------------------------------|---|----------------|
| Abstract | Abstract available | No abstract available | 12,259 |
| Free full text | Full text available | Text partially available | 4,411 |
| Humans | Studies involving human subjects | Studies involving non-human subjects | 2,997 |
| Complementary medicine | Studies in general medicine | Studies in specific diseases | 671 |
| Systematic review | Systematic reviews | Studies involving healthcare worker categories, such as head nurses | 736 |

Table 2. Hospital Sample

- #1 Policlinico Universitario A. Gemelli – Rome
- #2 Policlinico Sant’Orsola-Malpighi – Bologna
- #3 Grande Ospedale Metropolitano Niguarda – Milan
- #4 Istituto Clinico Humanitas – Rozzano (Milan)
- #5 Ospedale San Raffaele – Gruppo San Donato – Milan
- #6 IRCCS Arcispedale Santa Maria Nuova – Reggio Emilia
- #7 Azienda Ospedaliera di Padua
- #8 Ospedale Papa Giovanni XXIII – Bergamo
- #9 Ospedale Policlinico San Matteo – Pavia
- #10 Ospedale Borgo Trento – Verona
- #11 Presidio Ospedaliero Spedali Civili di Brescia

- #12 Ospedale Luigi Sacco – Milan
 - #13 Ospedale San Raffaele Turro – Gruppo San Donato – Milan
 - #14 Ospedale San Gerardo – Monza
 - #15 Presidio Ospedaliero Molinette – A.O.U. Città della Salute e della Scienza – Turin
 - #16 Azienda Ospedaliera Ordine Mauriziano – Turin
 - #17 Ospedale San Martino di Genoa
 - #18 Azienda Ospedaliera Universitaria Sant’Andrea – Rome
 - #19 Ospedale di Parma
 - #20 Azienda Ospedaliero Universitaria Pisana – Pisa
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Table 3. Survey

Q0 – For this survey, the term ‘clinical engagement’ means a situation in which physicians are motivated to be involved in management decisions and practices. The term ‘clinical leader’ indicates health professionals with a degree in medicine or the sciences who could take on a leading managerial role.

Please indicate if you work in a private or public hospital.

- Public hospital
- Private hospital

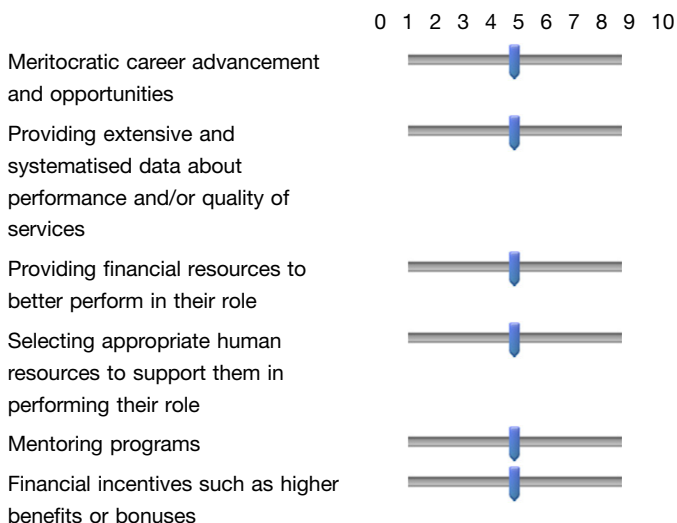
Q1 – In which area do you work?

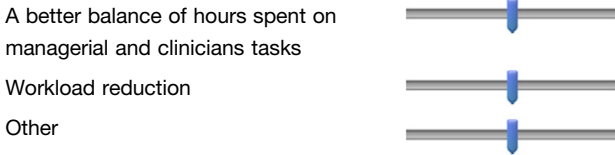
- General management
- Medical area
- Surgical area
- Diagnostic area

Q2 – In your opinion, what prompts clinicians to become engaged as leaders in their hospital (more than one answer is possible)?

- Organisational commitment defined as psychological attachment to the hospital where they work
- Clarity of the responsibilities of the position they hold
- Managerial knowledge
- Mentoring
- Balance between clinical work and managerial work
- Recognition and acknowledgment of the value of the role
- Confidence, pride and passion for the job
- Age
- Experience
- Other _____

Q3 – Please rate from 0 (not useful at all) to 10 (absolutely essential) the routines, activities and tasks of hospital management regarding the effectiveness of enhancing the engagement of clinical leaders.





Q4 – Please rate the statements about clinical engagement in your hospital.

| | Totally Disagree | Disagree | Unsure | Agree | Totally Agree |
|--|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Clinical engagement is sufficient | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Hospital management effectively promotes clinical engagement | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Clinical engagement is essential for achieving our goals | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Clinical engagement is stimulated | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Most clinicians are interested in managerial positions | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q5 – Please order the following managerial competences from the most (= 1) to the least important (= 5) according to which ones you think are most relevant for clinical leaders to effectively perform in their role.

- ___ Working with others, by developing networks, building and maintaining relationships, encouraging contribution and working in teams.
- ___ Managing services by planning, managing resources, people and performance.
- ___ Improving services by ensuring patient safety, critical evaluation, encouraging innovation and facilitating change.
- ___ Setting direction by identifying the context for change, applying knowledge and evidence, making decisions and evaluating their impact.
- ___ Fostering the adoption and development of innovation.

Q6 – Please order the following soft skills from the most (= 1) to the least important (= 6) according to which ones you think are most relevant for clinical leaders to effectively perform in their role.

- ___ Motivating colleagues
- ___ Communication abilities
- ___ Collaborative spirit
- ___ Empathy
- ___ Tolerance for debate and disagreement
- ___ Persuasion and negotiation

Q7 – Please order the following personal qualities from the most (= 1) to the least important (= 5) according to which ones you think are most relevant for clinical leaders to effectively perform in their role.

- ___ Self-awareness, i.e. being aware of one's own principles and learning from experience.

___ Self-management, i.e. organising oneself while taking into account the priorities of others.

___ Self-development, i.e. continuous professional development; learning from experience, feedback and discussion with others.

___ Acting with integrity, i.e. behaving in a transparent and ethical manner.

___ Be a role model able to inspire confidence in all that one performs.

Q8 – In your opinion, how important are the following training initiatives in supporting the development of engagement and capabilities in a clinical leader?

| | Not at All Important | Not Important | Quite Important | Very Important | Extremely Important |
|--|---------------------------------|--------------------------|----------------------------|---------------------------|--------------------------------|
| Managerial training programmes | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Managerial training programmes with final assessment | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Theoretical soft skills training programmes | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Practical soft skills training programmes that have been tested and assessed | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Psychological training programmes to enhance personal qualities | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Others | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q9 – Are there mandatory training initiatives that clinical leaders must attend and/or pass in order to be appointed to a managerial position in your hospital?

- Yes
 No

Q10 – If there are mandatory training programmes, what do they entail? Who are they addressed to?

| | Offered Free of Charge by the Hospital, the University or a Public Agency | Offered Free of Charge by the University or a Private Agency Without the Direct Involvement of the Hospital | Offered for a Fee by the Hospitals or a Private Agency |
|--|--|--|---|
| Training programmes in management knowledge | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Soft skills training programmes | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Psychological training programmes | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Soft skills and management training programmes | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Others | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Q11 – Do you feel that the current training programmes offered by your hospital promote the development of managerial competences, soft skills and personal qualities you believe to be relevant?

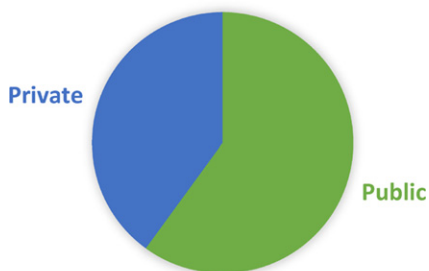


Q12 – This is the final item in this survey. We thank you for participating. Would you be interested in being interviewed?

- Yes, please enter your email and we will contact you to set an appointment.
- _____
- No
- _____

Table 4. Report on Clinical Engagement Survey

Q0 – For this survey, the term ‘clinical engagement’ means a situation in which physicians are motivated to be involved in management decisions and practices. The term ‘clinical leader’ indicates health professionals with a degree in medicine or the sciences who could take on a leading managerial role.

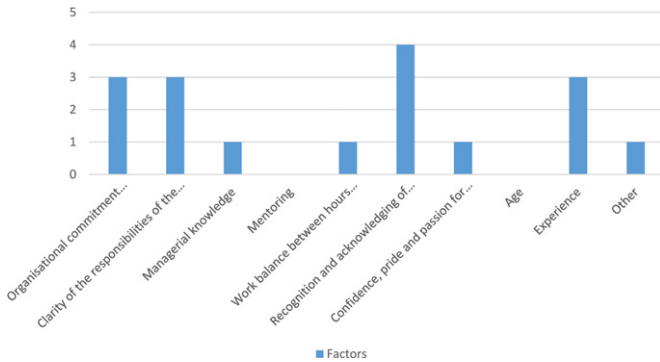


| Answer | Percentage -% | Count |
|---------|---------------|-------|
| Public | 60.00 | 3 |
| Private | 40.00 | 2 |
| Total | 100% | 5 |

Q1 – Which area is related to the role you hold in the hospital?

| Answer | % | Count |
|--------------------|--------|-------|
| General management | 100.00 | 5 |
| Medical area | 0.00 | 0 |
| Chirurgical area | 0.00 | 0 |
| Diagnostic area | 0.00 | 0 |
| Total | 100 | 5 |

Q2 – In your experience, what prompts clinicians to engage as leaders in their hospital (more than one answer is possible)?



| Answer | % | Count |
|---|-----|-------|
| Organisational commitment defined as a psychological attachment to the hospital where they work | 60 | 3 |
| Clarity of the responsibilities of the role | 60 | 3 |
| Managerial knowledge | 20 | 1 |
| Mentoring | 0 | 0 |
| Balance between clinical and managerial duties | 20 | 1 |
| Recognition and acknowledgment of the value of the role | 80 | 4 |
| Confidence, pride and passion in the job they do | 20 | 1 |
| Age | 0 | 0 |
| Experience | 60 | 3 |
| Other | 20 | 1 |
| Total | 100 | 5 |

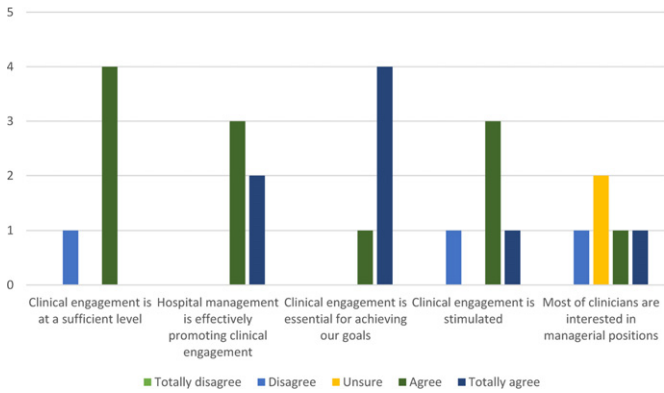
Q3 – Please rate from 0 (= not useful at all) to 10 (absolutely critical) the routines, activities and tasks done by hospital management regarding the effectiveness of enhancing the engagement of clinical leaders.

| Field | Min | Max | Mean | S.D. | Variance | Count |
|--|------------|------------|-------------|-------------|-----------------|--------------|
| Meritocratic career advancement and opportunities | 2.00 | 10.00 | 6.80 | 2.64 | 6.96 | 5 |
| Providing extensive and systematic data about performance and/or quality of services | 1.00 | 9.00 | 6.20 | 2.99 | 8.96 | 5 |
| Providing financial resources to better perform in their role | 5.00 | 9.00 | 6.60 | 1.62 | 2.64 | 5 |
| Selecting appropriate human resources to support them in performing in their role | 1.00 | 9.00 | 6.60 | 2.87 | 8.24 | 5 |
| Mentoring programmes | 6.00 | 8.00 | 7.00 | 0.63 | 0.40 | 5 |
| Financial incentives such as higher benefits or bonuses | 6.00 | 8.00 | 7.20 | 0.98 | 0.96 | 5 |
| A better balance of hours spent on managerial and clinician tasks | 4.00 | 8.00 | 6.20 | 1.60 | 2.56 | 5 |
| Workload reduction | 2.00 | 6.00 | 3.60 | 1.50 | 2.24 | 5 |
| Other | 0.00 | 10.00 | 3.80 | 3.82 | 14.56 | 5 |

Other – text.

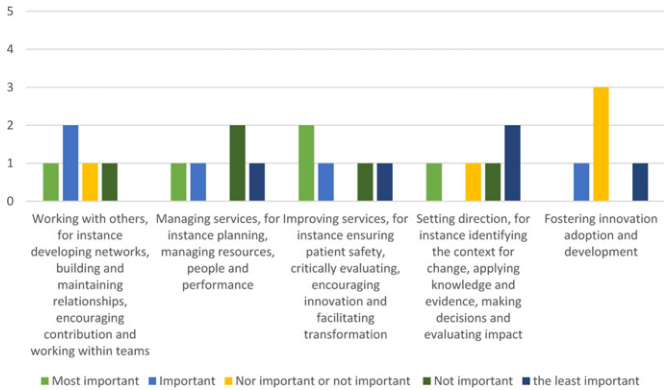
Possibility to influence decisions (investments, research, ...).

Q4 – Please evaluate the following statements on clinical engagement in your hospital.



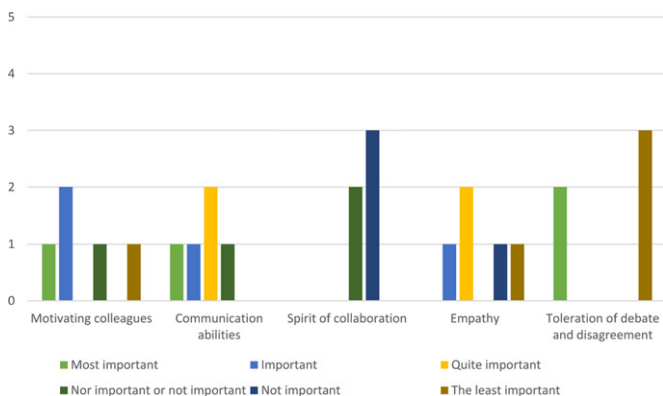
| Field | Totally Disagree (%) | | Disagree (%) | | Unsure (%) | | Agree (%) | | Totally Agree (%) | | Total (No.) |
|--|-----------------------------|---|---------------------|---|-------------------|---|------------------|---|--------------------------|---|--------------------|
| Clinical engagement is sufficient | 0.00 | 0 | 20.00 | 1 | 0.00 | 0 | 80.00 | 4 | 0.00 | 0 | 5 |
| Hospital management effectively promotes clinical engagement | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 60.00 | 3 | 40.00 | 2 | 5 |
| Clinical engagement is essential for achieving our goals | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 20.00 | 1 | 80.00 | 4 | 5 |
| Clinical engagement is stimulated | 0.00 | 0 | 20.00 | 1 | 0.00 | 0 | 60.00 | 3 | 20.00 | 1 | 5 |
| Most clinicians are interested in managerial positions | 0.00 | 0 | 20.00 | 1 | 40.00 | 2 | 20.00 | 1 | 20.00 | 1 | 5 |

Q5 – Please order the following managerial competences from the most (= 1) to the least important (= 5) according to which ones you think are most relevant for clinical leaders to effectively perform in their role.



| Field | 1 (%) | 2 (%) | 3 (%) | 4 (%) | 5 (%) | Total |
|--|-------|-------|-------|-------|-------|-------|
| Working with others, developing networks, building and maintaining relationships, encouraging feedback and working on teams | 20.00 | 40.00 | 20.00 | 20.00 | 0.00 | 5 |
| Managing services by planning, managing resources, people and performance | 20.00 | 20.00 | 0.00 | 40.00 | 20.00 | 5 |
| Improving services by ensuring patient safety, critically evaluating, encouraging innovation and facilitating transformation | 40.00 | 20.00 | 0.00 | 20.00 | 20.00 | 5 |
| Setting direction by identifying the context for change, applying knowledge and evidence, making decisions and evaluating their impact | 20.00 | 0.00 | 20.00 | 20.00 | 40.00 | 5 |
| Fostering the adoption and development of innovation | 0.00 | 20.00 | 60.00 | 0.00 | 20.00 | 5 |

Q6 – Please order the following soft skills from the most (= 1) to the least important (= 6) according to which ones you think are most relevant for clinical leaders to effectively perform in their role.



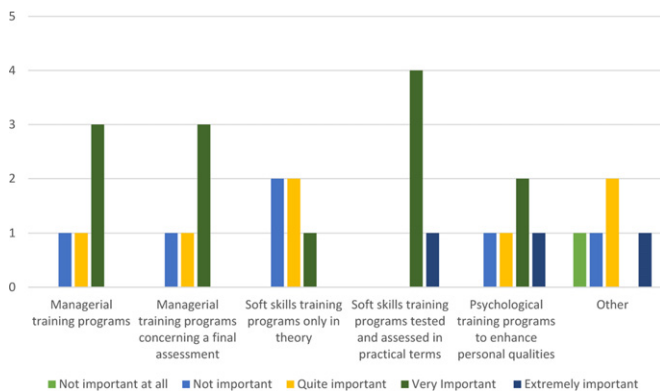
| Field | 1 (%) | 2 (%) | 3 (%) | 4 (%) | 5 (%) | 6 (%) | Total | | | | | | |
|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|---|-------|---|-------|---|---|
| Motivating colleagues | 20.00 | 1 | 40.00 | 2 | 0.00 | 0 | 20.00 | 1 | 0.00 | 0 | 20.00 | 1 | 5 |
| Communication abilities | 20.00 | 1 | 20.00 | 1 | 40.00 | 2 | 20.00 | 1 | 0.00 | 0 | 0.00 | 0 | 5 |
| Collaborative spirit | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 40.00 | 2 | 60.00 | 3 | 0.00 | 0 | 5 |
| Empathy | 20.00 | 1 | 20.00 | 1 | 20.00 | 1 | 20.00 | 1 | 20.00 | 1 | 0.00 | 0 | 5 |
| Tolerance of debate and disagreement | 0.00 | 0 | 20.00 | 1 | 40.00 | 2 | 0.00 | 0 | 20.00 | 1 | 20.00 | 1 | 5 |
| Degree of persuasion and negotiation | 40.00 | 2 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 60.00 | 3 | 5 |

Q7 – Please order the following personal qualities from the most (= 1) to the least important (= 5) according to which ones you think are most relevant for clinical leaders to effectively perform in their role.



| Field | 1 (%) | 2 (%) | 3 (%) | 4 (%) | 5 (%) | Total | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|---|-------|---|---|
| Self-awareness, i.e. being aware of one's own principles and learning from experience | 20.00 | 1 | 20.00 | 1 | 20.00 | 1 | 40.00 | 2 | 0.00 | 0 | 5 |
| Self-management, i.e. organising oneself while taking into account of the priorities of others | 0.00 | 0 | 0.00 | 0 | 20.00 | 1 | 20.00 | 1 | 60.00 | 3 | 5 |
| Self-development, i.e. continuous professional development; learning from experience, feedback, and discussion with others | 0.00 | 0 | 0.00 | 0 | 20.00 | 1 | 40.00 | 2 | 40.00 | 2 | 5 |
| Acting with integrity, i.e. behaving in a transparent and ethical manner | 20.00 | 1 | 40.00 | 2 | 40.00 | 2 | 0.00 | 0 | 0.00 | 0 | 5 |
| Be a role model, able to inspire confidence in what one does | 60.00 | 3 | 40.00 | 2 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 5 |

Q8 – In your opinion, how important are the following training initiatives in supporting the development of engagement and capabilities in a clinical leader?



| Field | Not at All | | Not | | Quite | | Very | | Extremely | | Total (No.) |
|--|---------------|---|---------------|---|---------------|---|---------------|---|---------------|---|-------------|
| | Important (%) | | Important (%) | | Important (%) | | Important (%) | | Important (%) | | |
| Managerial training programmes | 0.00 | 0 | 20.00 | 1 | 20.00 | 1 | 60.00 | 3 | 0.00 | 0 | 5 |
| Managerial training programmes with final assessment | 0.00 | 0 | 20.00 | 1 | 20.00 | 1 | 60.00 | 3 | 0.00 | 0 | 5 |
| Theoretical soft skills training programmes | 0.00 | 0 | 40.00 | 2 | 40.00 | 2 | 20.00 | 1 | 0.00 | 0 | 5 |
| Practical soft skills training programmes that have been tested and assessed | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 80.00 | 4 | 20.00 | 1 | 5 |
| Psychological training programmes to enhance personal qualities | 0.00 | 0 | 20.00 | 1 | 20.00 | 1 | 40.00 | 2 | 20.00 | 1 | 5 |
| Other | 20.00 | 1 | 20.00 | 1 | 40.00 | 2 | 0.00 | 0 | 20.00 | 1 | 5 |

Q9 – Are there mandatory training initiatives that clinical leaders must attend and/or pass in order to be appointed to a manager position in your hospital?



| Answer | % | Count |
|---------------|----------|--------------|
| Yes | 40.00 | 2 |
| No | 60.00 | 3 |
| Total | 100 | 5 |

Q10 – If there are mandatory training programmes, what do they entail? Who are they addressed to?

| Field | Offered Free of Charge by the Hospital, the University or a Public Agency | | Offered Free of Charge by the University or a Private Agency Without the Direct Involvement of the Hospital | | Offered for a Fee by the Hospital or a Private Agency | | Total |
|--|---|---|---|---|---|---|-------|
| Training programmes in management knowledge | 66.67 | 2 | 33.33 | 1 | 0.00 | 0 | 3 |
| Soft skills training programmes | 33.33 | 1 | 33.33 | 1 | 33.33 | 1 | 3 |
| Psychological training programmes | 0.00 | 0 | 50.00 | 1 | 50.00 | 1 | 2 |
| Soft skills and management training programmes | 50.00 | 1 | 50.00 | 1 | 0.00 | 0 | 2 |
| Other | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0 |

Q11 – Do you feel that the current training programmes offered by your hospital promote the development of managerial competences, soft skills and personal qualities you believe to be relevant? (from 0 to 10).

| Field | Min | Max | Mean | S.D. | Variance | Count |
|------------------------|------------|------------|-------------|-------------|-----------------|--------------|
| Managerial competences | 2.00 | 7.00 | 5.60 | 1.85 | 3.44 | 5 |
| Soft skills | 3.00 | 7.00 | 5.00 | 1.26 | 1.60 | 5 |
| Personal qualities | 3.00 | 9.00 | 5.20 | 2.71 | 7.36 | 5 |

Q12 – This is the final item in this survey. We thank you for participating. Would you be interested in being interviewed?

| Answer | % | Count |
|---|----------|--------------|
| Yes, enter your email and we will contact you to set an appointment | 0.00 | 0 |
| No | 100.00 | 5 |
| Total | 100 | 5 |

Table 5. Reference Model Timetable