

Table of contents

Preface — v

1 Introduction: clinical laboratory contribution to patient safety — 1

References — 2

2 Inappropriateness in laboratory test requesting in the literature — 5

2.1 Laboratory process-test request — 6

2.2 Definition of inappropriate requests — 8

2.3 Causes of inappropriate test requests — 8

2.3.1 Laboratory — 9

2.3.2 Requesting physician — 10

2.3.3 The patient — 12

2.3.4 Factors inherent in the system — 12

2.4 Reducing inefficiency in the laboratory diagnostic process — 12

2.5 Tools described in the literature for the management of the demand for laboratory tests: before, during, and after the request — 13

2.5.1 Before — 13

2.5.2 During the request — 15

2.5.3 After the request — 16

2.6 The future: where we are going — 16

References — 16

3 Causes and negative effects of inappropriateness in laboratory test requesting — 21

3.1 Introduction — 21

3.2 Causes of inappropriateness in laboratory test requesting — 22

3.2.1 Clinician's unawareness about the test — 22

3.2.2 Communication between clinical and laboratory departments — 27

3.2.3 Others — 31

3.3 Negative effects of inappropriateness in laboratory test requesting — 32

References — 33

4 Strategies to correct inappropriateness in laboratory test requesting — 37

4.1 Introduction — 37

4.2 Types of strategy to correct inappropriateness in laboratory tests — 38

4.2.1 Strategies based on education, audit, and feedback — 40

4.2.2 Rules and agreements aimed at vetting test requests — 41

4.2.3 Re-design of the request formularies — 44

4.2.4 Computer physician order entry — 45

- 4.3 Strategies to correct inappropriateness in laboratory test requesting and phase of intervention — 45
 - 4.3.1 Pre-requesting phase interventions — 46
 - 4.3.2 During requesting interventions — 49
 - 4.3.3 Post-requesting interventions — 49
- 4.4 Laboratory medicine — 54
- 4.5 Epilogue — 56
- References — 57

5 Practical pathway to design, establish, and monitor over time test requesting appropriateness strategies: indicators to detect the inappropriateness and to monitor after interventions — 63

- 5.1 Introduction — 63
- 5.2 The plan-do-check-act cycle as a basis in the design of strategies to correct inappropriateness in laboratory test requesting — 63
- 5.3 Indicators that intervene in strategies to correct inappropriateness in laboratory test requesting — 64
 - 5.3.1 Indicators in clinical laboratory: general considerations — 64
 - 5.3.2 Indicators to detect test inappropriateness and to monitor after the establishment of the different interventions — 65
- 5.4 A step-by-step description of strategies to correct inappropriateness in laboratory test requesting — 67
 - 5.4.1 Identify laboratory test inappropriateness — 68
 - 5.4.2 Selection of the test and target population — 70
 - 5.4.3 Generation of the idea — 71
 - 5.4.4 Pre-design of the strategy — 72
 - 5.4.5 Strategy final design — 72
 - 5.4.6 Strategy establishment — 73
 - 5.4.7 Monitoring through process indicators — 73
 - 5.4.8 Evaluation through outcome indicators — 73
 - 5.4.9 Final decision whether to continue or stop the strategy — 74
- References — 74

6 Potential of computer physician order entry (CPOE) to improve patient safety related to laboratory test requesting — 77

- 6.1 What is a computer physician order entry (CPOE) system? — 77
- 6.2 CPOE interventions — 78
- 6.3 Design strategies — 79
 - 6.3.1 Re-design of the request formularies — 79
 - 6.3.2 Use of clinical (or “disease-specific”) profiles/panels — 80
 - 6.3.3 Customized formularies — 81
 - 6.3.4 Display costs/fees — 83

6.3.5	Search functions — 83
6.3.6	Research/clinical trial formularies — 84
6.4	Clinical decision support rules — 86
6.4.1	Specialty/staff-grade limitations — 86
6.4.2	Minimum retest intervals — 88
6.4.3	Asking for additional information: questions — 90
6.4.4	Suggestions/corrections — 93
6.5	CPOE advantages in pre-analytical phase — 95
6.6	Conclusions — 95
References	— 98