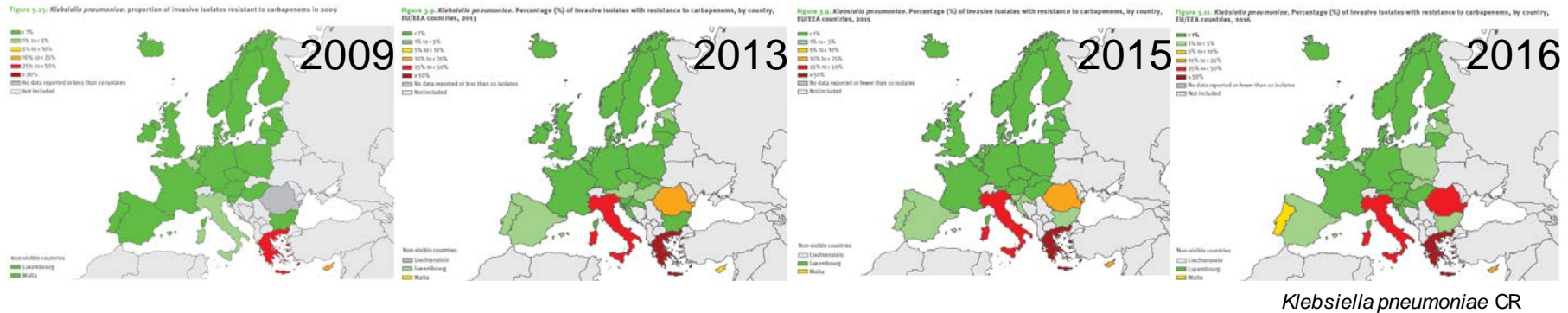**EURECA - Substudy of infections due to carbapenem-resistant Enterobacteriacea (CRE) along Europe.**

Inside COMBACTE network: global information for a global problem.

María Paniagua
22 & 23 October 2018 • IMI Scientific Symposium • Brussels, Belgium

INTRODUCTION. BACKGROUND

2009   2013   2015   2016

Klebsiella pneumoniae CR

EURECA STUDY

EUropean prospective cohort study on Enterobacteriaceae Showing **RE**sistance to **CA**rbapenems
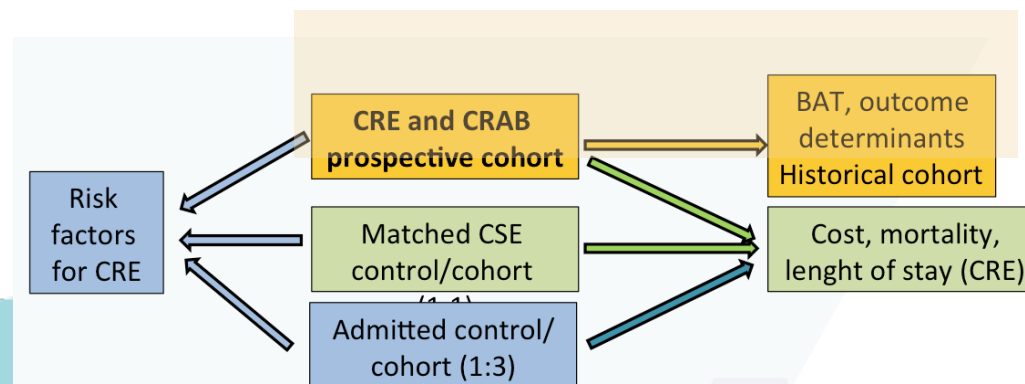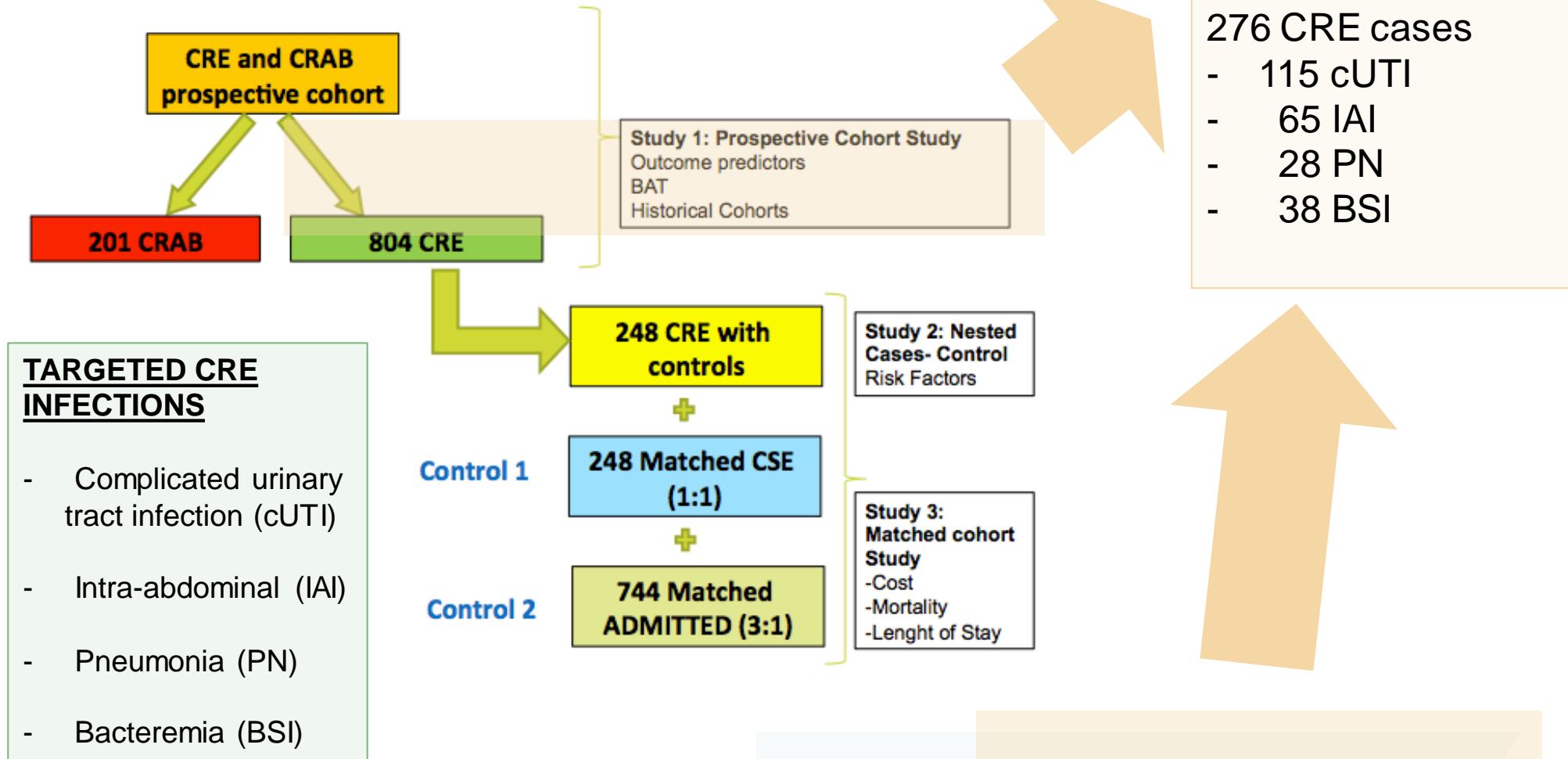
EURECA SITES

10 countries
50 sites
More than 200 investigators
More than 2,000 patients

Academic Industry Biotech

Public-Private Partnership

DESIGN. OBJETIVES

CRE and CRAB prospective cohort

201 CRAB

804 CRE

Study 1: Prospective Cohort Study
Outcome predictors
BAT
Historical Cohorts

TARGETED CRE INFECTIONS

- Complicated urinary tract infection (cUTI)

- Intra-abdominal (IAI)

- Pneumonia (PN)

- Bacteremia (BSI)

248 CRE with controls

Study 2: Nested Cases- Control
Risk Factors

Control 1

248 Matched CSE (1:1)

Control 2

744 Matched ADMITTED (3:1)

Study 3: Matched cohort Study
-Cost
-Mortality
-Lenght of Stay

INTERIM ANALYSIS

276 CRE cases
- 115 cUTI
- 65 IAI
- 28 PN
- 38 BSI

CRE and CRAB prospective cohort

BAT, outcome determinants Historical cohort

Risk factors for CRE

Matched CSE control/cohort (1:1)

Cost, mortality, lenght of stay (CRE)

Admitted control/ cohort (1:3)

innovative medicines initiative

EURECA. Substudy 1.
CRE prospective cohort. Interim Analysis Main Results

EPIDEMIOLOGY	All 276 n (%)	cUTI 115 n (%)	IAI 65 n (%)	PN 28 n (%)	BSI 68 n (%)
Healthcare associated	61 (22)	39 (34)	7 (11)	6 (22)	9 (13)
Nosocomial	198 (72)	65 (56)	56 (86)	18 (64)	59 (87)
Medical Service	134 (48)	76 (66)	21 (32)	13 (46)	24 (35)
Surgical					10 (15)
ICU	66 (24)	10 (9)	11 (17)	12 (43)	33 (49)

Nosocomial/Healthcare-associated infections

Presence in all services (Source-related)

RISK FACTORS	All 276 n (%)	cUTI 115 n (%)	IAI 65 n (%)	PN 28 n (%)	BSI 68 n (%)
Antibiotics use (3mo)					57 (84)
Another CRE at ward					30 (44)
Previous Hospitalisation					35 (52)
Central line (3mo)	133 (48)	35 (30)	35 (54)	13 (46)	50 (74)
Urinary catheter					52 (77)
Mechanic Ventilation (3mo)	88 (32)			12 (43)	39 (57)
Surgery last month	89 (32)	22 (19)	34 (52)	9 (32)	24 (35)
Previous colonisation/infection					

High rates of previous ATBs use (85%)

High rates of CRE patients in the same ward

High rates of previous hospitalisation

High rates of previous "hospital procedures" (Source-related)

Considerable rates of previous CRE colonization/infection

OUTCOMES	All 276 n (%)	cUTI 115 n (%)	IAI 65 n (%)	PN 28 n (%)	BSI 68 n (%)
Clinical cure (day 21)					25 (37)
Microbiological cure (day 21)					39 (47)
All cause mortality (day 30)	57 (21)	19 (17)	6 (9)	3 (11)	29 (42)
Related mortality (day 30)	25 (10)	8 (17)	5 (8)	1 (4)	22 (32)
Length of hospital stay (med IQR)				32 (17-30)	16 (10-24)

Low rates of Clinical Cure at day 21 (<50%)

Acceptable Microbiological Cure at day 21 (50-70%)

Variable mortality (Source-related)

Long hospital stay associated

CONCLUSIONS

- GLOBAL PROBLEMS → GLOBAL APPROACH → GLOBAL SOLUTIONS

- PUBLIC-PRIVATE → COLLABORATION → TEAMWORK

- Multinational and multihospital level of information is crucial in Antimicrobial Resistance, given the importance of providing global and confident information

EURECA STUDY

- Adequate recruitment
- Results from interim analysis suggest we will answer the objectives.