IMPEC
IMPROVING EMERGENCY CARE

The IMPEC FHU
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Emergency Medicine: 
Cornerstone of most acute conditions and critical illness

Facing several issues to deliver best care to patient:

- Specificity of **emergency physician’s work**
  (multiple patients, incomplete information, rapid decision)

- **Shortcomings** from a specific system
  (hospitals’ bed restriction, access blocks, manpower shortage)

- **Difficult environment**
  (comorbid and fragile population, geopolitical evolution)
Research in emergency medicine

Late comer compared to others specialties

Worldwide (Leading societies and leading journal at lower grade)

Emergency Medicine @APHP in the last 10 years

Despite few & disseminated researchers, achieved:

- Several national grants funded (> 6 Million €) and European RCTs
- Landmark publications in major journals (1 NEJM, 4 JAMA, 1 Lancet, 1 BMJ)
IMPEC FHU: Aim of the project

The creation of IMPEC FHU will allow to:

- Federate all Emergency Med, Researcher in Paris Metro area
- Encourage collaborations between hospitals and EDs
- Enhance attractiveness of research in a difficult environment
- Improve international visibility of French EM research
IMPEC FHU: General structure

- Core group: ED researchers APHP.SU, APHP.P13, APHP.Univ Paris
- Support group: All academic APHP EDs (17) + 2 non APHP EDs
- Linked with Regional ED observatory (120 EDs)
- First research consortium in EM in France
Aim of the structure:
Improving emergency care through 5 workpackages

WP1: Early therapy in the critically ill  Pr F Adnet

WP2: Healthcare access and suboptimal care for fragile population  Dr AL Feral

WP3: Resource allocation and precision medicine  Pr Y Freund

WP4: Paramedical research  J Leblanc

WP5: Medical education, medical errors and human factors  Dr AL Philippon
WP1: Early therapy in the critically ill

Aim:

to improve prognosis in acute emergency condition
WP1: Early therapy in the critically ill
Aim: to improve prognosis in acute emergency condition

**Cardiac arrest:** leading cause of death
Ongoing research on early management – optimisation of early care (drug’s efficacy)
Project: tailor the decision about when to stop resuscitation efforts

**Sepsis:** tightening definition and early detection – biomarkers / clinical scores
Project: test sepsis bundles and validate the SSC guidelines

**Trauma:** leading cause of death and global burden
Project: improve pre-hospital management by testing risk and benefit of hyperoxia
WP2: Healthcare access

Suboptimal care to specific population
Inequal access to healthcare
WP2: Healthcare access
Suboptimal care to specific population - Inequal access to healthcare

Transdisciplinary research from epidemiology to randomized clinical trials

Identify pitfalls and needs – Collaboration with INSERM 1153

Root cause analysis

Build and conduct clinical trials

WP1  WP4

Perspective: migrant patients, uninsured, foregoing medical care...
Rationalising diagnostic tests and treatment without impairing safety and efficacy of care
WP3: Resource allocation / precision medicine

Rationalising diagnostic tests and treatment - Without impairing safety and efficacy of care

Reducing imaging studies use and need for invasive treatment
International RCT on clinical decision rule for PE
International RCT on coma patients (NICO) With medico-eco evaluation (URC-eco)

Biomarkers and diagnostic tests
ED triage and early rule-out With INSERM U942

Big data analysis on ED visit data
Forecasting ED flow – improving patients’ pathway With Harv Med School & EDS
WP4: Paramedical research

Nurses and other Paramedical providers are pivot for ED care
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Nurses and other paramedical providers are pivot for ED care

Targeted screening for HIV in the ED

Advanced practice nursing (Ministry of health and ARS)
Cooperation protocol for Xray order and therapy administration

Reducing risk of psychotrauma after cardiac arrest for family
WP5: Medical errors - medical education

Study humans factors → system based changes and improved patient's safety
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Study humans factors → system based changes and improved patient's safety

Improving simulation based teaching
Internal and external international validation of student’s assessment

Develop cross checking procedures, beyond emergency care
Intervention trial for shifted resident’s work hours

Introduce and assess benefit of checklist in emergent situation
Acute heart failure, sepsis, cardiac arrest
Governance of IMPEC

**Executive committee / Monthly meeting**
Pr Y Freund, Pr T Simon, Pr F Adnet, Dr AL Feral, J Leblanc, Dr AL Philippon

**Research committee / Quarterly meeting**
One researcher from involved hospitals and research structures (N=19) + Inserm U942 + URCEST + ORUIIdF

**International advisory board / Yearly meeting**
Pr Hugli (Switzerland), Dr Bloom (UK), Dr Penaloza (Belgium) & Dr Miro (Spain)
Strengths of IMPEC

First research consortium in emergency medicine in France (Already exist in UK, Spain, Belgium, Denmark...)
Strengths of IMPEC

Unsurpassed recruitment potential of 800K patients per year (APHP)

And up to 4 million visits per year (Regional observatory)
Strengths of IMPEC

Large diversity of recruiting center Pre hosp / ED, semi rural / urban, underprivileged ...

Strong support of INSERM 3 universities and APHP
Consolidate European networks for ERC application

Île-de-France
19 centres

France
33 centres

Europe
Espagne, Suisse, Belgique, UK

America
USA, Canada, Chile

Develop existing collaboration with USA, Canada, and Chile