MODÈLES PRÉDICTIFS EN MÉDECINE D'URGENCE

Bourse recherche Rotary - 2024

Dr BALEN Frederic
CHU Toulouse

LE CANDIDAT : ACTIVITE CLINQUE

08/09/1988

Hôpitaux de Toulouse

Médecin Urgentiste

- Assistant (2015-2017)
- PHC (2017-2018)
- CCU – AH (2018 – 2020)
- PHC (2020 – 2021)
- PH (2021 – XXX)

Régulation médicale

Service Mobile d'Urgence Réa

Service d'Urgence

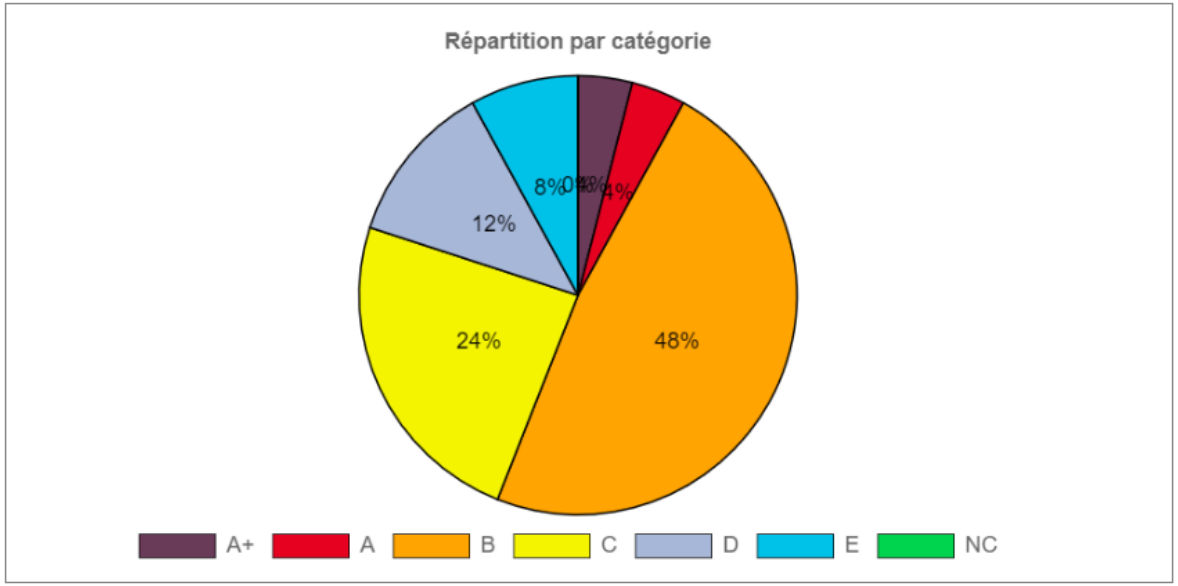
LE CANDIDAT : ACTIVITÉ D'ENSEIGNEMENT

08/09/1988

- DU Pédagogie (2021)
- Responsable séminaires DES MU
- Responsable pédagogique DU échographie clinique MU
- Enseignant pour l'externat

LE CANDIDAT : ACTIVITÉ DE RECHERCHE ET EXPERTISE

Période : 2019 - 2023										
Année	**Total**	**A+**	**A**	**B**	**C**	**D**	**E**	**NC**	**Score**	**Score Frac.**
2019	2	0	0	0	1	0	1	0	24	1.46
2020	6	1	0	3	2	0	0	0	56	2.16
2021	4	0	0	3	0	1	0	0	72	4.38
2022	4	0	0	1	1	1	1	0	51	2.94
2023	9	0	1	5	2	1	0	0	142	9.66
Total	**25**	**1**	**1**	**12**	**6**	**3**	**2**	**0**	**345**	**20.61**



Diagnostic performances of lung ultrasound associated with inferior vena cava assessment for the diagnosis of acute heart failure in elderly emergency patients:

Frederic Balen[a,b,c], Charles-Henri Houze Cerfon[a], Dominique Lauque[a,b], Manon Hebrad[a], Thibault Legour Clement Delmas[d] and Sandrine Charpentier[a,b,c]

Predictive factors for early requirement of respiratory support through phone call to Emergency Medical Call Centre for dyspnoea: a retrospective cohort study

Frederic Balen[a,b], Sebastien Lamy[b], Sarah Fraisse[a], Vincent Bounes[a,c], Xavier Dubucs[a,b,c] and Sandrine

Risk factors and effect of inappropriate treatment of a dyspnea in Emergency Department: a retrospective study.

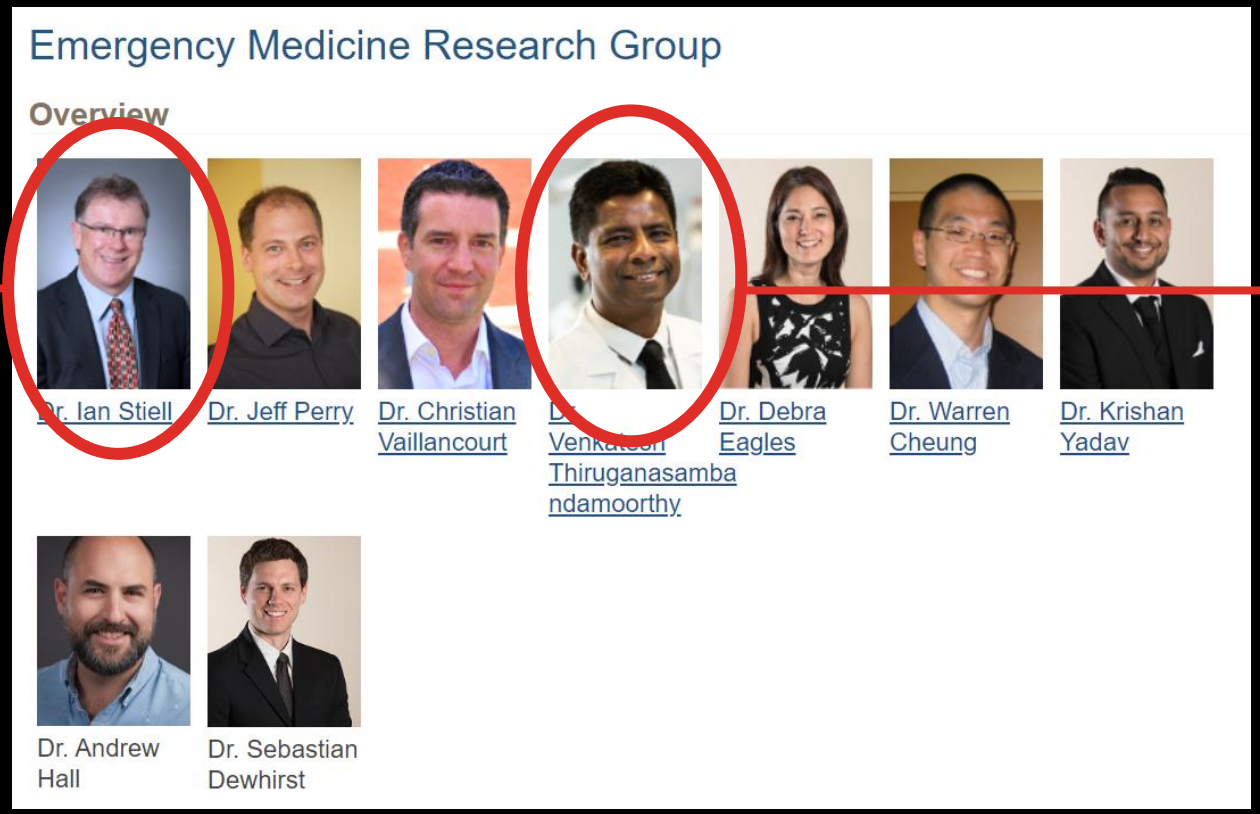
Frederic BALEN[1,2], Sebastien LAMY[2], Léa FROISSART[1], Thomas MESNARD[1], Benjamin SANCHEZ[1], Xavier DUBUCS[1,2,3], Sandrine CHARPENTIER[1,2,3]

Société Française de Médecine d'Urgence

L'EQUIPE D'ACCUEIL

The Ottawa Hospital Research Institute | L'Hôpital d'Ottawa Institut de recherche

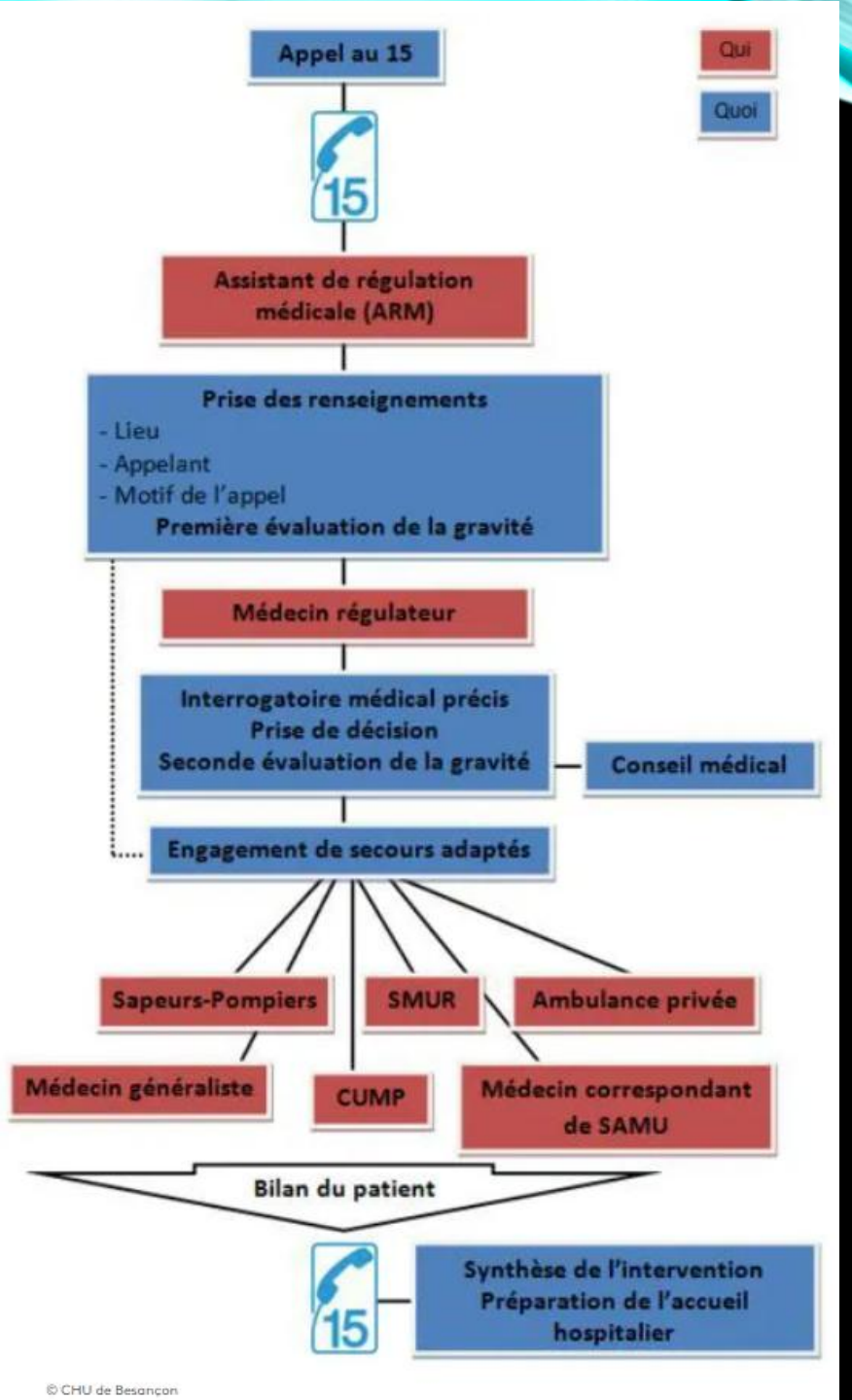
- Ottawa cheville
- Ottawa genou
- C-spine rule
- CT head rule



- Canadian syncope risk score

CENTRE DE RECEPTION ET DE RÉGULATION DES APPELS

« CRRA » / CENTRE 15



LE PROJET : DYSPNÉE EN RÉGULATION

Contexte et enjeu : détecter la dyspnée « grave »

- Dyspnée = 8% des appels [1]
- Support respiratoire précoce= diminution morbi-mortalité [2]
- Peu de données sur la régulation [3]

[1] Ibsen S, Lindskou TA, Nickel CH, Kløjgård T, Christensen EF, Søvsø MB. Which symptoms pose the highest risk in patients calling for an ambulance? A population-based cohort study from Denmark. Scand J Trauma Resusc Emerg Med 2021;**29**:59
[2] Goodacre S, Stevens JW, Pandor A, Poku E, et al. Prehospital noninvasive ventilation for acute respiratory failure: systematic review, network meta-analysis, and individual patient data meta-analysis. Acad Emerg Med 2014;**21**:960–970.
[3] Ponnapalli A, Khare Y, Dominic C, Ganesh S, Bhalla G, Gokani SA. Remote risk-stratification of dyspnoea in acute respiratory disorders: a systematic review of the literature. J R Coll Physicians Edinb 2021;**51**:221–229.

LE PROJET : DYSPNÉE EN RÉGULATION

Contexte : les résultats de ReDy [4]

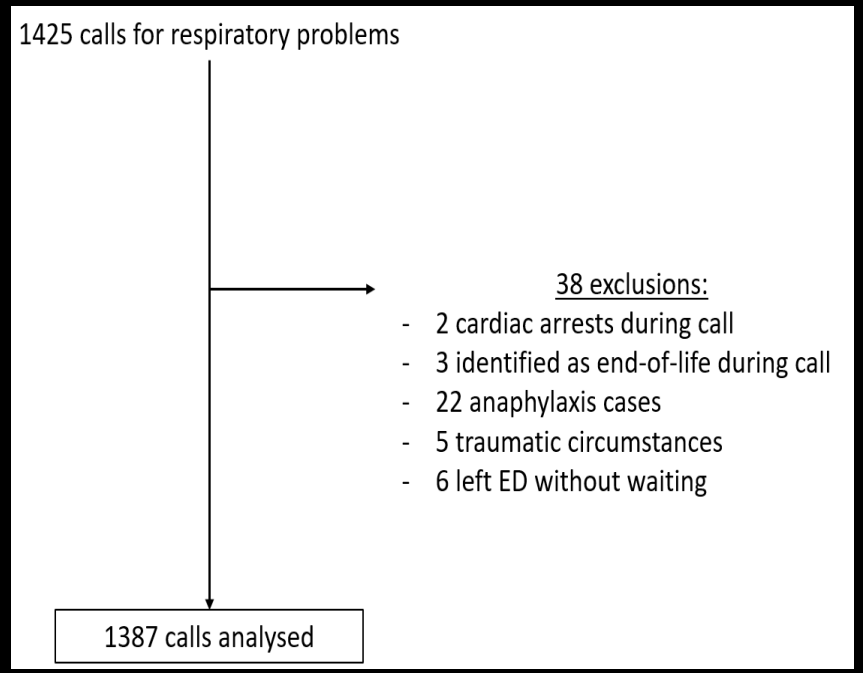


Table 3 Predictive factors at call of requirement of respiratory support

	OR	95% CI
B2-mimetics as usual treatment	2.35	1.61–3.44
Polypnea	5.78	2.74–12.22
Altered ability to speak complete sentences	2.35	1.55–3.55
Cyanosis	2.79	1.81–4.32
Sweats	1.93	1.25–3
Altered consciousness	1.84	1.1–3.08

15% de supports respiratoires précoces

Table 4 Risk of requirement of respiratory support according to the number of predictive factors in complete case population (AUC = 0.781)

Number of predictive factors	Patients (n (%))	Respiratory support (n)	Risk, % (95 CI)
0	141 (16%)	3	2% (0–6)
1	305 (35%)	17	6% (3–9)
2	219 (25%)	37	17% (12–23)
3	126 (15%)	33	26% (19–35)
≥4	75 (9%)	41	55% (43–66)
Total	866	131	15% (13–18)

[4] Balen F, Lamy S, Fraisse S, Trinari J, Bounes V, Dubucs X, Charpentier S. Predictive factors for early requirement of respiratory support through phone call to Emergency Medical Call Centre for dyspnoea: a retrospective cohort study. Eur J Emerg Med. 2023 Dec 1;30(6):432-437.

QUOI DE NEUF DEPUIS NOTRE DERNIÈRE RENCONTRE?

SOUTENANCE PHD

NOUVEL ARTICLE EN COURS DE PUBLICATION

Table 1. Population characteristics assessed via telephone call

	Population (n = 649)	No respiratory support (n = 600)	Respiratory support required (n = 49)	p-value
Age (years)	77 (65 - 87)	78 (64 - 87)	72 (65 - 78)	**0.04**
Women	366 (56)	341 (57)	25 (51)	0.430
Medical history:				
- Heart disease	344 (53)	316 (53)	28 (57)	0.546
- Lung disease	307 (47)	277 (46)	30 (61)	**0.042**
- Chronic renal failure	51 (8)	47 (8)	4 (8)	0.934
- Diabetes	107 (17)	96 (16)	11 (23)	0.242
- Dementia	49 (8)	46 (8)	3 (6)	0.694
Usual treatment:				
- Furosemide	182 (28)	172 (29)	10 (20)	0.216
- B2-mimetics	179 (28)	164 (27)	15 (31)	0.621
Duration of symptoms before call (hours)	13 (2 - 57)	13 (2 - 57)	5 (1 - 23)	**0.014**
Duration of symptoms ≥ 5 hours	406 (63)	382 (64)	24 (50)	**0.041**
Tachypnea:	407 (63)	365 (61)	42 (86)	**0.001**
- Not evaluate	36 (6)	34 (6)	2 (4)	1
Abnormal respiratory noises:	316 (49)	284 (47)	32 (65)	**0.005**
- Wheezing	135 (21)	123 (21)	12 (25)	
- Crackling	177 (27)	158 (26)	19 (40)	**0.008**
- No	308 (47)	295 (49)	13 (27)	
- Not evaluate	29 (5)	24 (4)	5 (10)	
Unable to speak:	249 (38)	206 (34)	43 (88)	**< 0.001**
- Not evaluate	34 (5)	34 (6)	0	0.100
Cyanosis:	90 (14)	79 (13)	11 (22)	**0.071**
- Not evaluate	44 (7)	38 (6)	6 (12)	0.132
Sweats:	104 (16)	90 (15)	14 (29)	**0.013**
- Not evaluate	60 (9)	54 (9)	6 (12)	0.440
Abdominal respiration:	223 (34)	189 (32)	34 (69)	**< 0.001**
- Not evaluate	120 (18)	111 (19)	9 (18)	1
Altered consciousness:	56 (9)	46 (8)	10 (20)	**0.002**
- Not evaluate	10 (2)	10 (2)	0	1
Breathing discomfort (0 to 10)	7 (5 - 8)	7 (5 - 8)	8 (7 - 10)	**< 0.001**
- Breathing discomfort > 7	178 (27)	153 (26)	25 (51)	**< 0.001**
- Not evaluate	168 (26)	152 (25)	14 (29)	0.869
Medical dispatcher intuition (0 to 10)	2 (1 - 5)	2 (1 - 4)	7 (5 - 8)	**< 0.001**
Final decision of the EMCC:				
- Medical advise or GP alone	104 (16)	103 (17)	1 (2)	
- Dispatch of an ambulance alone	463 (71)	448 (75)	15 (31)	N.A
- Dispatch of a MICU after ambulance assessment	30 (5)	14 (2)	16 (33)	
- Dispatch of a MICU immediatly after call	52 (8)	35 (6)	17 (35)	

Table 3. Predictive factors at call of immediate respiratory support requirement

	OR	[CI95]
Altered ability to speak complete sentences	8.62	[3.49 - 21.3]
Abdominal respiration	2.42	[1.23 - 4.76]
Altered consciousness	2.05	[0.90 - 4.65]
Self report breathing discomfort > 7 /10	1.83	[0.96 - 3.47]

TRAVAUX D'EXPERTISE

- Recommandations SFMU/SRL sur « Prise en charge de la dyspnée »

- Expert JTI SFMU « Urgences Vitales » : Atelier détresse respiratoire

PARCOURS UNIVERSITAIRE

	PUPH	
Publications en rang utile*		
Articles originaux	10	✚
Revues niveau A+, A ou B	5	✚
AFMU	4	✚
Articles didactiques	8	
Communications orales	10	✚
Diplôme		
Parcours science minimum	Thèse université	✚
Habilitation à diriger les recherches	Oui	
Mobilité validée par le CNU	Oui	✚
Diplôme d'université de pédagogie/simulation	Oui	✚

AVANCEMENT OTTAWA

- Démarches administrative (inscription post doc et permis de travail) : finalisé
- Contact Rotary Ottawa West pour préparer l'arrivée
- Rédaction du protocole de recherche en cours

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CONCLUSION

- Poursuite de l'investissement dans la recherche sur la thématique
- Reconnaissance nationale de l'expertise
- Avancement de la carrière universitaire
- Préparation de la mobilité ++++