

Un examen échographique

SONOSCANNER

Premium Diagnostic Ultrasound

Etienne Richard, Directeur

@sonoscaner



Webinar
27th of November 2019

With Tomislav Petrovic
Md, Emergency Physician, WINFOCUS



Welcome



SONOSCANNER
Premium Diagnostic Ultrasound

Webinar – Sonoscanner – Our Product Range:

- Premium Ultrasound Orcheo XQ, wide screen 21” and 4 active probes, intensive use
- High-end Portable Ultrasound: Orcheo Lite, HD Probes and dedicated customized reports, regular use
- Ultraportable HD Ultrasound : U-Lite & T-Lite, <1kg fully featured, mixed use in & out patients

➔ More than 2560 ultrasounds installed around the world

T-Lite: First Handheld Tablet Ultrasound

For your practice, benefit from T-Lite's ~~5G~~ 5F:

1. Full Day of Scan: 8h Back to Back Scanning
2. Full Probe Range: Up to 11 probes!
3. Full Ease of use: touchscreen functions
4. Full Screen Display: 10" of HD Ultrasonic image
5. Full Doppler Modes: including PW & TDI, CFM & PDI



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Webinar – Sonoscanner - Our 5 reasons of success:

1. Ease of use, touchscreen interface
2. Image Quality HD
3. Full workflow: from scan to integrated reports
4. Financing solutions
5. Technical and medical support

« I have been using my Sonoscanner for 3 months. I use it 3 to 5 times a day. I am very satisfied of it.»

Dr Jean-Pierre Morvan, GP in Baud (56)



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Webinar – Sonoscanner – Our team for your service:

We will be happy to assist you to:

1. Get onsite demonstration
 2. Present our technical specifications
 3. Study your budget
 4. Plan your training
-
- To get in touch with your local representative:
 - International Sales Dept
 - international@sonoscanner.com
 - **+ 33 9 54 97 15 57**



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CLINICAL EMERGENCY ULTRASOUND

November 2019



Dr Tomislav PETROVIC
SAMU 93, Bobigny, France
WINFOCUS Past-President
WINFOCUS-France, President



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Premium Diagnostic Ultrasound



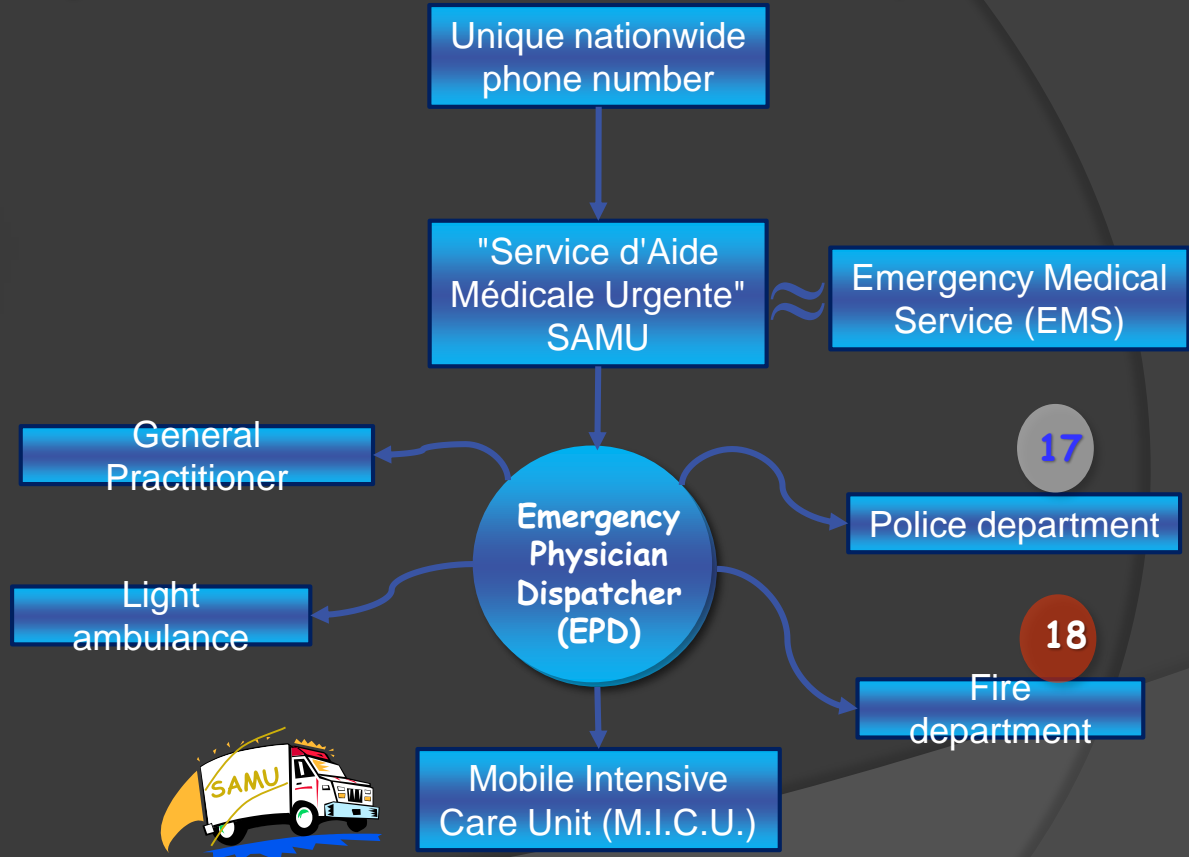
Emergency medicine in French National Health system...



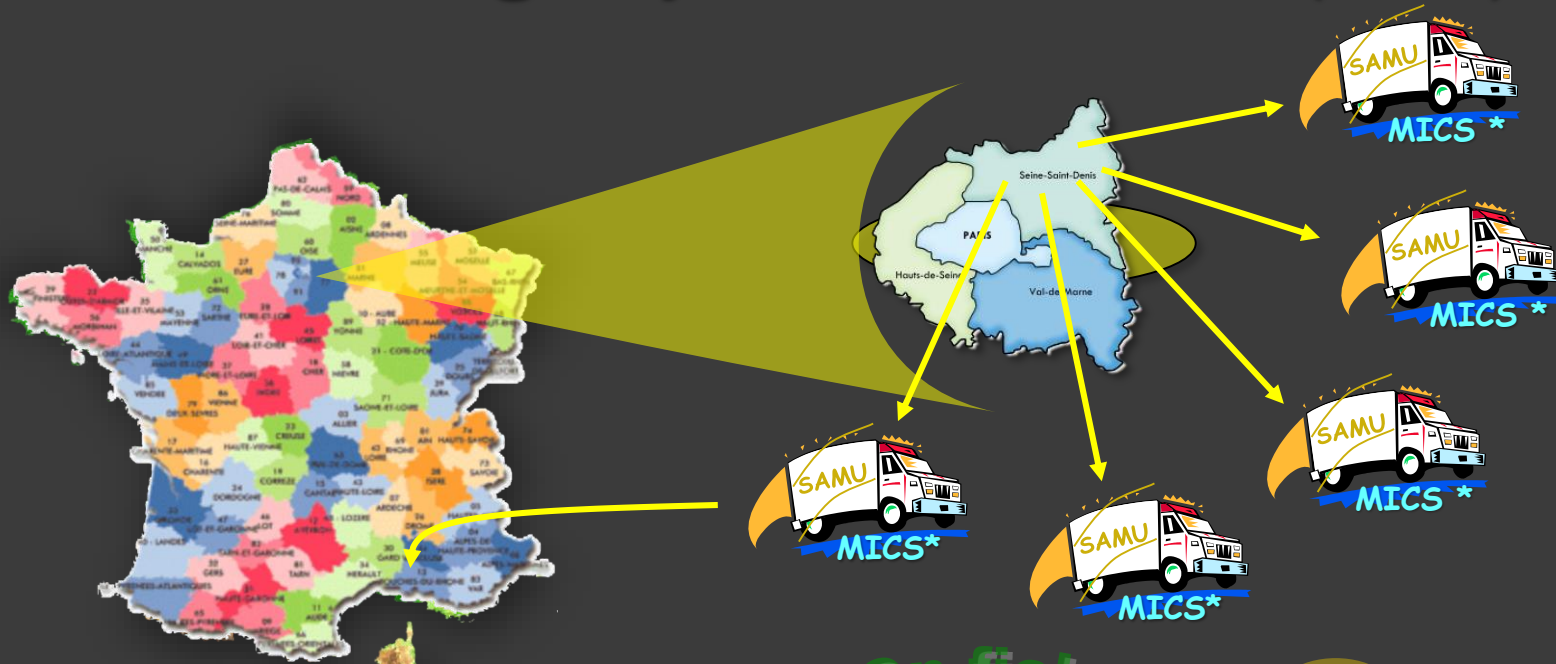
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Emergency Medical Service (EMS)



Emergency Medical Service (EMS)



M.I.C.U.** squad

- Driver
- Emergency nurse
- Emergency physician



On field

- Diagnosis
- Treatment
- Stabilization

EPD

Orientation

* Mobile Intensive Care Station
** Mobile Intensive Care Unit



Emergency Medical Service (EMS)



446 MICS (24 paediatric)

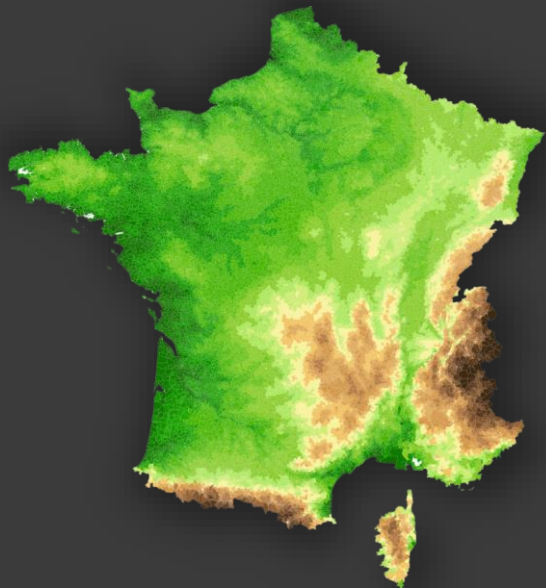
- 910 MICU
- 638 Light Intensive Care vehicles
- 45 flying vehicles (mostly helicopters)
- Total : 1593 transportation means

≅ 745 000 OH interventions

- Primary interventions: 77 % (approx. 572 000)
- Secondary interventions: 23 % (approx. 166 000)
- "Air" interventions: 5 % (approx. 42 000)



Inhospital Emergency Departments...



645 Emergency Departments

- Level 2 and 3: 60% (65% public)
- Level 1: 33% (97% public)
- Specialized departments: 7% (52% public)

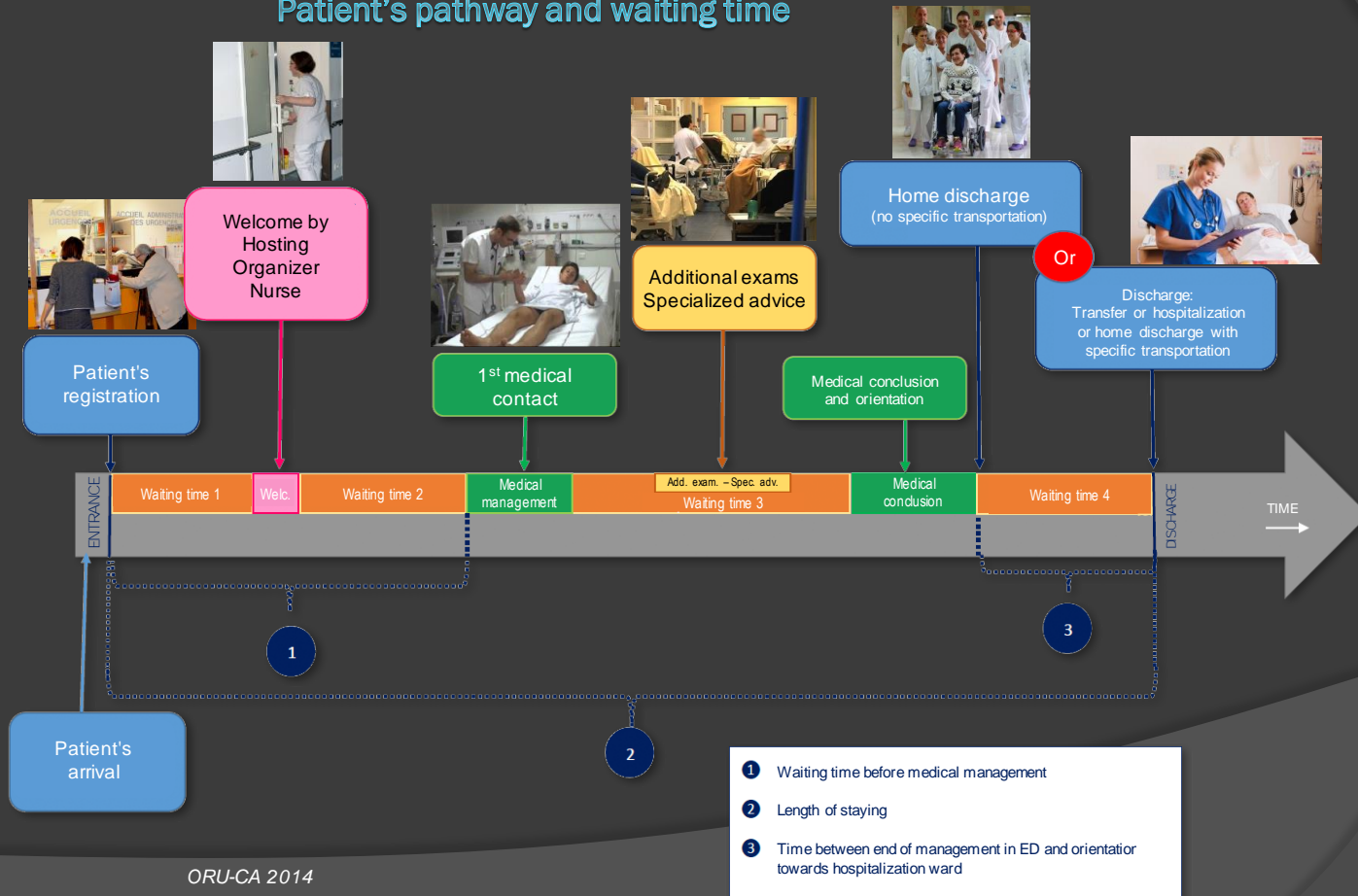
Appox. 17 200 000 patients (for an overall population of 62 millions)

- 84% consulting in public centers
- 5% consulting in private centers with public agreement
- 11% consulting in private centers without public agreement



Inhospital Emergency Departments...

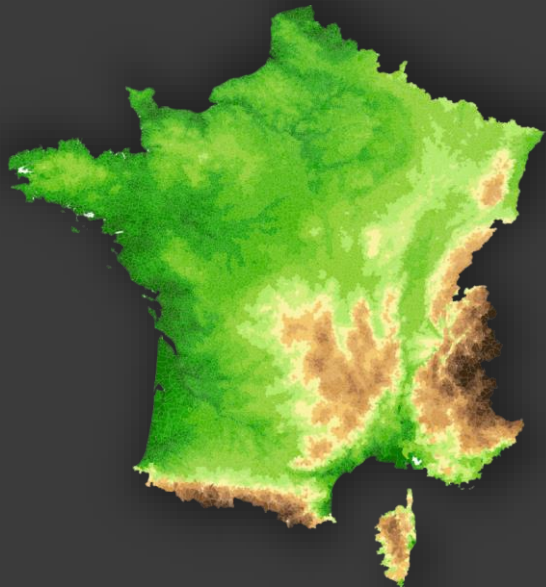
Patient's pathway and waiting time





US devices availability in ED...

Nationale survey



Step 1: Dec 2010 – June 2011⁽¹⁾

- 75% of ED and EMS screened
- IHED: 52% (171/327) (IC 95% [46; 58])
- PHED: 9% (25/278) (IC 95% [5; 13])

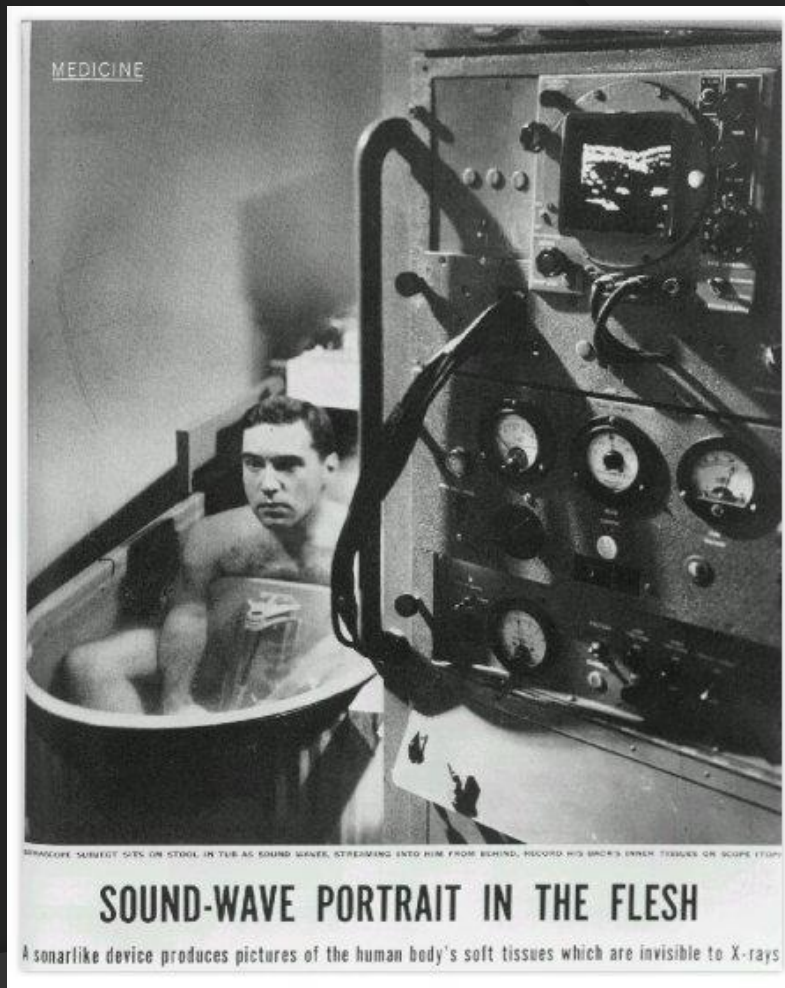
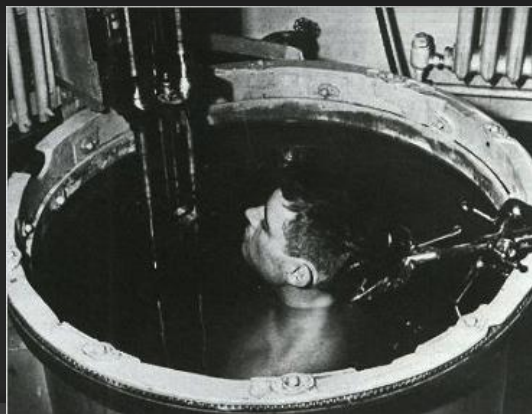
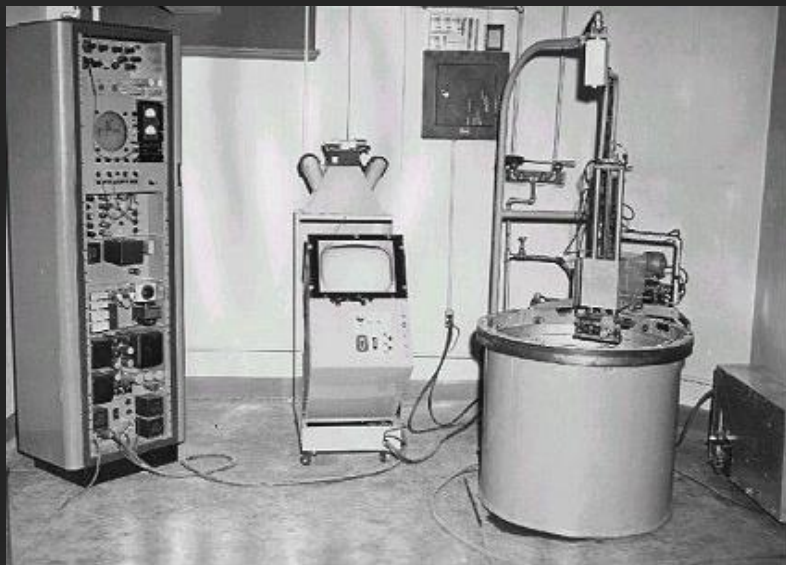
Step 2: Dec 2015 – June 2016⁽²⁾

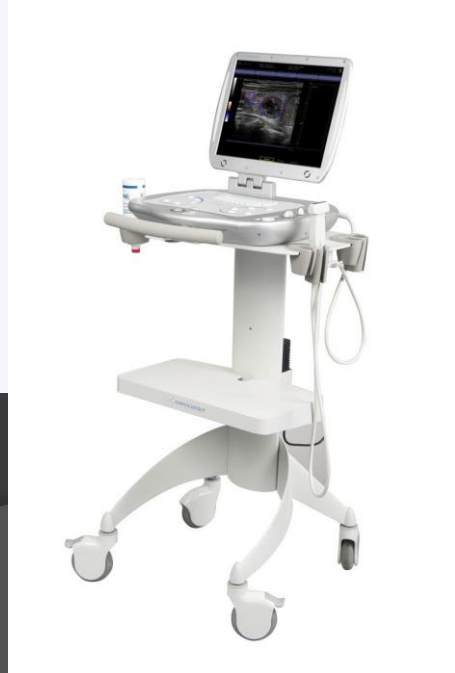
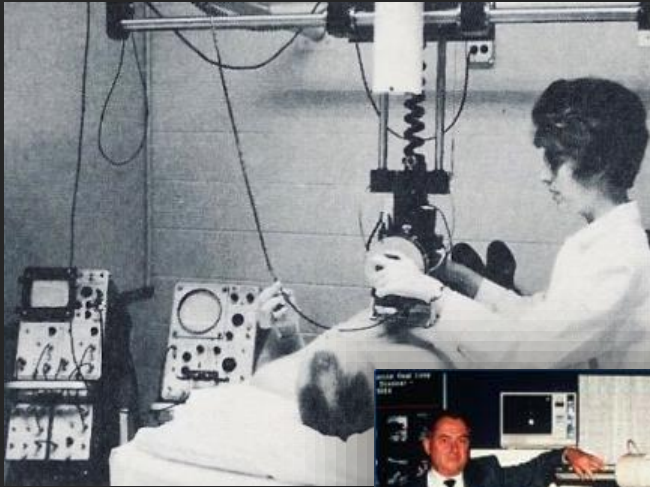
- 75% of ED and EMS screened
- IHED: 74% (171/327) (IC 95% [46; 58])
- PHED: 24% (25/278) (IC 95% [5; 13])

1. Bobbia X, Hansel N, Muller L, Claret PG, Moreau A, Genre Grandpierre R, Chenaitia H, Lefrant JY, de La Coussaye JE. Availability and practice of bedside ultrasonography in emergency rooms and prehospital setting: a French survey. Ann Fr Anesth Reanim. 2014 Mar;33(3):e29-33.

2. Bobbia X, Hansel N, Muller L, Claret PG, Moreau A, Genre Grandpierre R, Chenaitia H, Lefrant JY, de La Coussaye JE. Availability and practice of bedside ultrasonography in emergency rooms and prehospital setting: a French survey. Ann Fr Anesth Reanim. 2014 Mar;33(3):e29-33.

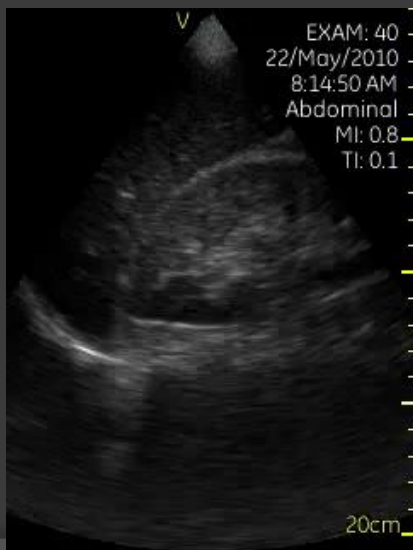
Long story...

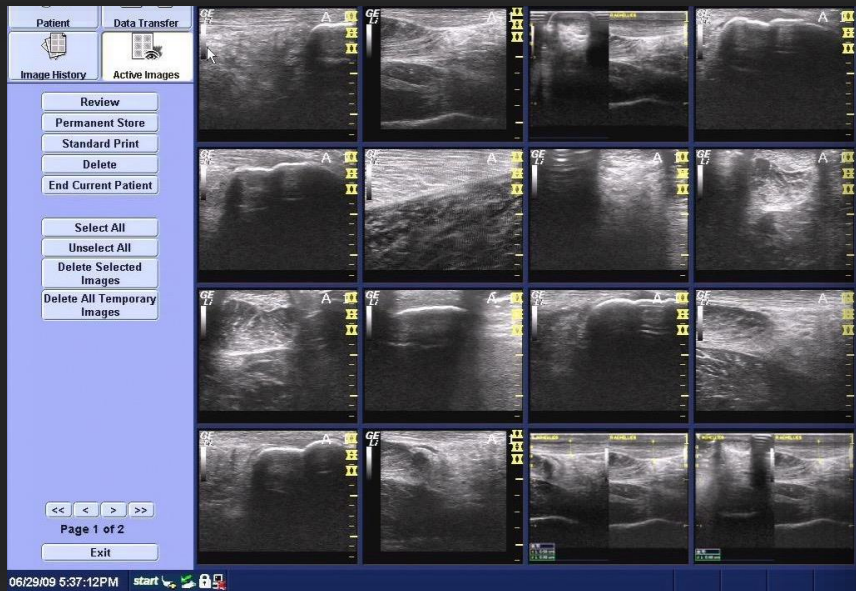
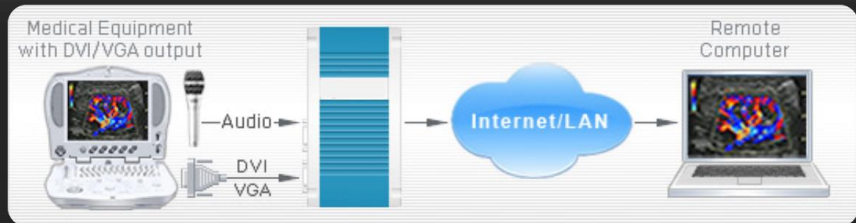






Today...





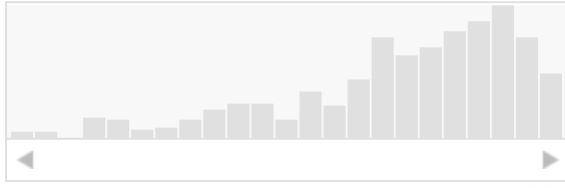


Evidences...



Justification...

Results by year



Studies	n	Sens (%)	Spe (%)	NPV (%)
Hoffmann et al, 1992	291	89	97	93

PubMed



focused assessment with sonography for trauma

Create RSS

Create alert

Advanced

Format: Summary ▾ Sort by: Most Recent ▾ Per page: 20 ▾

Send to ▾

Search results

Items: 1 to 20 of 459

<< First < Prev Page 1 of 23 Next > Last >>

Ballard et al, 1999	102	28	99	85
Shackford et al, 1999	234	69	98	92
Yeo et al, 1999	38	67	97	93
Coley et al, 2000	107	38	97	78
Total	6286	74,5	97,5	93,4

Alex Ng. The FAST examination. How good is FAST? trauma.org, 2001
Déc;6:12. Available: <http://www.trauma.org/radiology/FASThowgood.html>



Justification...

Neri L, Storti E, Lichtenstein D. Toward an ultrasound curriculum for critical care medicine. Crit Care Med. 2007 May;35(5 Suppl):S290-304.

Lamperti M, Bodenham AR, Pittiruti M, Blaivas M, Augoustides JG, Elbarbary M, Pirotte T, Karakitsos D, Ledonne J, Doniger S, Scoppettuolo G, Feller-Kopman D, Schummer W, Biffi R, Desruennes E, Melniker LA, Verghese ST. International evidence-based recommendations on ultrasound-guided vascular access. Intensive Care Med. 2012 Jul;38(7):1105-17.

The screenshot shows a PubMed search interface. The search bar contains the text "ultrasonography in emergency departments OR point of care ultrasound". Below the search bar, there are options for "Format: Summary", "Sort by: Most Recent", and "Per page: 20". The search results section shows "Items: 1 to 20 of 10940". A list of results is displayed, with the first result being "Point-of-care ultrasonography in Norwegian out-of-hours primary health care." The results are also displayed in a "Results by year" bar chart on the right side of the page.

evidence-based recommendations for focused cardiac ultrasound. J Am Soc Echocardiogr. 2014 Jul;27(7):663.e1-663.e33.

Frankel HL, Kirkpatrick AW, Elbarbary M, Blaivas M, Desai H, Evans D, Summerfield DT, Slonim A, Breitzkreutz R, Price S, Marik PE, Talmor D, Levitov A. Guidelines for the Appropriate Use of Bedside General and Cardiac Ultrasonography in the Evaluation of Critically Ill Patients-Part I: General Ultrasonography. Crit Care Med. 2015 Nov;43(11):2479-502.

International Liaison Committee on Trauma Ultrasound (ILC-TUS) for International Consensus Conference on Trauma Ultrasound (ICC-TUS). International evidence-based recommendations for point-of-care ultrasound in trauma: part I trunk trauma. In Process,



Justification...

Echoday

G Model
ACCPM 249 1-7

ARTICLE IN PRESS

Anaesth Crit Care Pain Med xxx (2017) xxx-xxx

 **ELSEVIER**

 **SFAR**
Société Française d'Anesthésie et de Réanimation



Original Article

The clinical impact and prevalence of emergency point-of-care ultrasound: A prospective multicenter study

Xavier Bobbia^{a,*}, Laurent Zieleskiewicz^b, Christophe Pradeilles^a, Chloé Hudson^{b, *},
Laurent Muller^a, Pierre Géraud Claret^a, Marc Leone^b, Jean-Emmanuel de La Coussaye^a,
Winfocus France Group

^a Pôle anesthésie réanimation douleur urgence, CHU de Nîmes, place du Pr-Debré, 30029 Nîmes, France
^b Service d'anesthésie et de réanimation, hôpital Nord, Aix Marseille université, Assistance publique-Hôpitaux de Marseille, chemin des Bourrely, 13015 Marseille, France

- One-day (May 20, 2014), prospective, observational study
- Institutional review board and Paris Ethical Committee approval
- French in- and prehospital ED with permanently available US systems and trained physicians
- All POCUS* exams

* Point Of Care UltraSound

Bobbia X, Zieleskiewicz L, Pradeilles C, Hudson C, Muller L, Claret PG, Leone M, Coussaye JE; Winfocus France Group. The clinical impact and prevalence of emergency point-of-care ultrasound: a prospective multicentre study. *Anaesth Crit Care Pain Med*. 2017 Apr 12. pii: S2352-5568(16)30081-9. doi: 10.1016/j.accpm.2017.02.008. [Epub ahead of print].



Justification...

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- 50 Emergency departments
- 4671 patients (total per day)
- 192 (4%) POCUS*
- 229 (5%) US exams
 - 32 (14%) out-of-hospital
 - 197 (86%) in-hospital

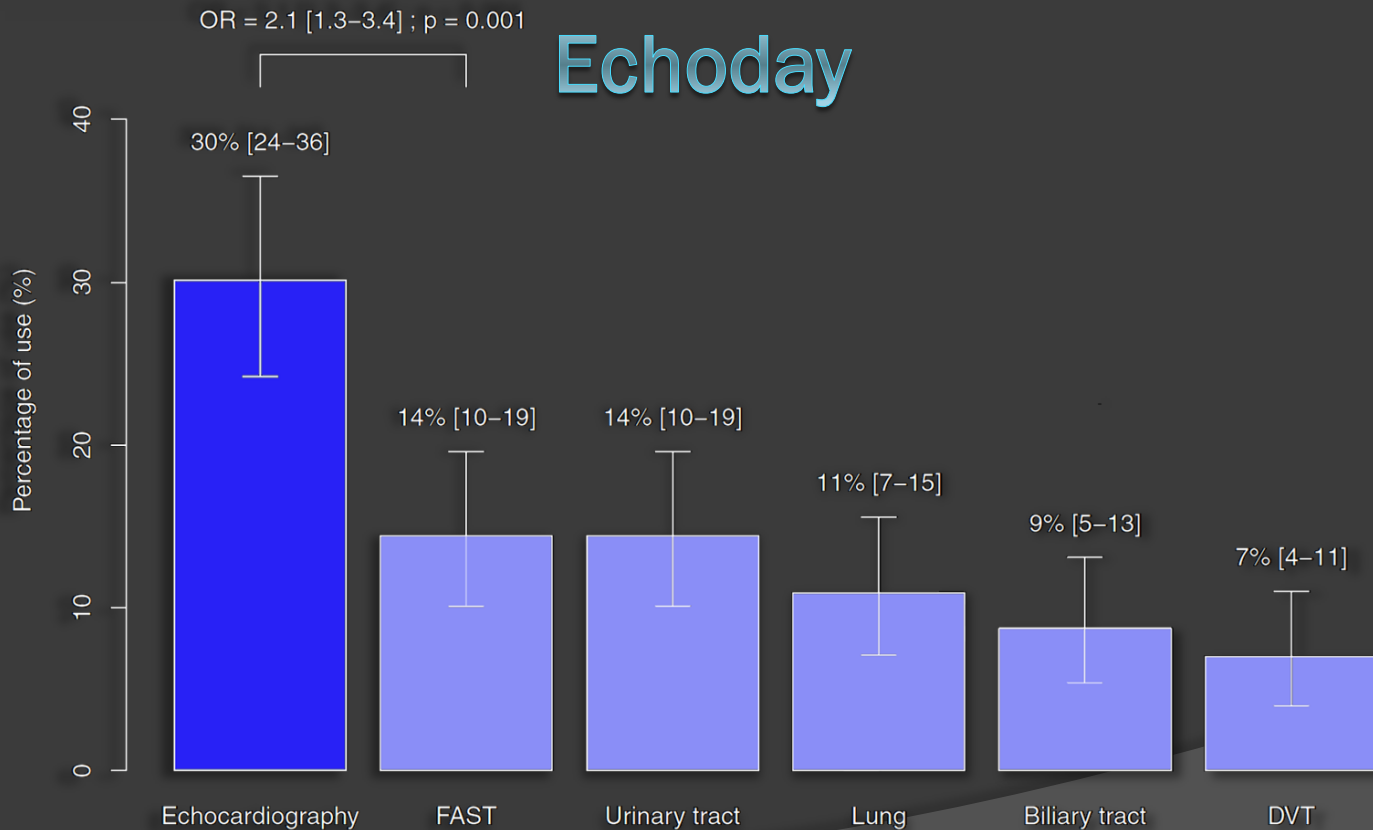
* Point Of Care UltraSound

Bobbia X, Zieleskiewicz L, Pradeilles C, Hudson C, Muller L, Claret PG, Leone M, Coussaye JE; Winfocus France Group. The clinical impact and prevalence of emergency point-of-care ultrasound: a prospective multicentre study. *Anaesth Crit Care Pain Med*. 2017 Apr 12. pii: S2352-5568(16)30081-9. doi: 10.1016/j.accpm.2017.02.008. [Epub ahead of print].



Justification...

Echoday

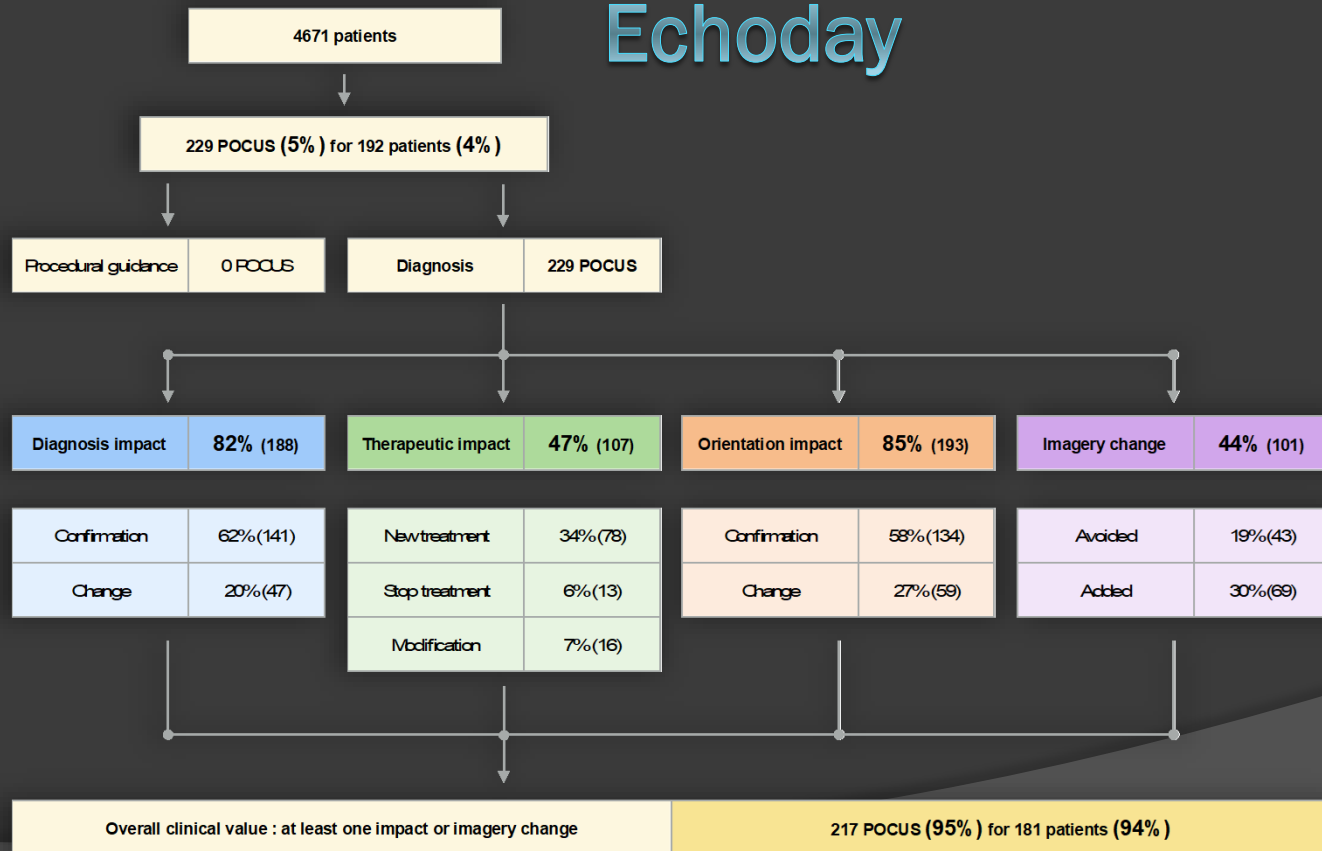


Most frequent POCUS sites. FAST: focused assessment with sonography for trauma; DVT: deep venous thrombosis.

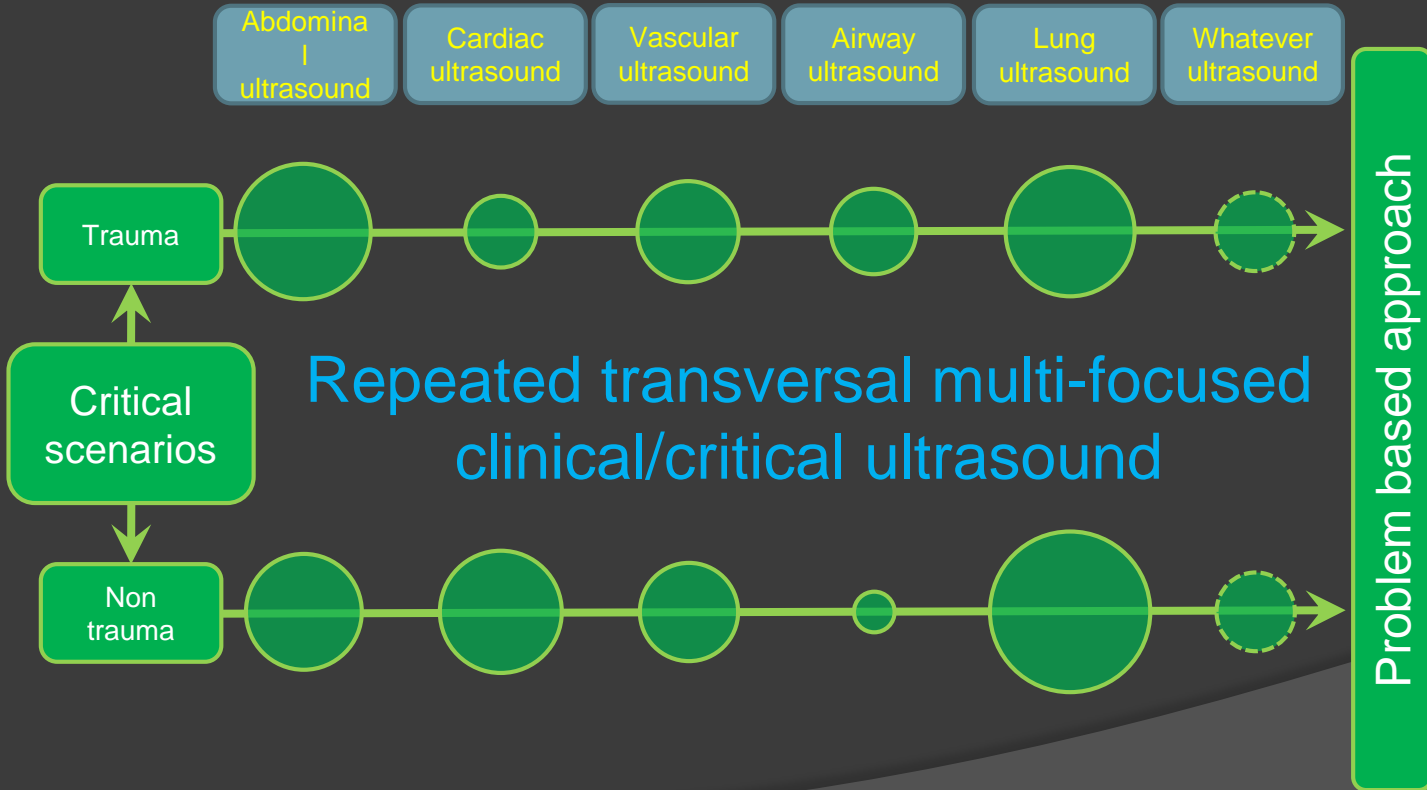


Justification...

Echoday



POCUS paradigm...



Education and training...

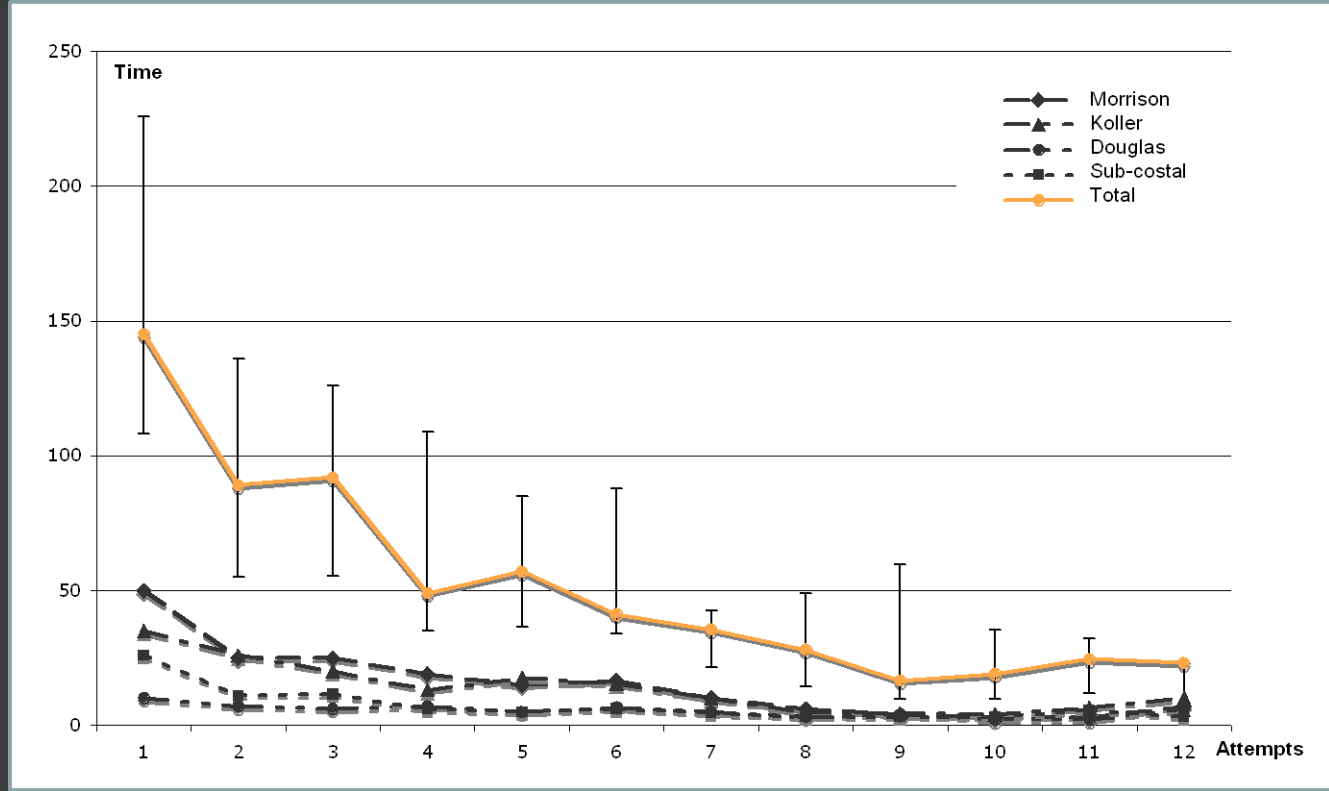
Toward an ultrasound curriculum for critical care medicine

Luca Neri, MD; Enrico Storti, MD; Daniel Lichtenstein, MD

Accurate assessment and rapid decision-making are essential to save lives and improve performance in critical care medicine. Real-time point-of-care ultrasound has become an invaluable adjunct to the clinical evaluation of critically ill and injured patients both for pre- and in-hospital situations. However, a high level of quality is necessary, guaranteed by appropriate education, experience, credentialing, quality control, continuing education, and professional development. Although educational recommendations have been proposed by a variety of nonimaging specialties, to date they are still scattered and limited examples of standards for critical and intensive care professionals. The challenge of providing adequate specialty-specific training, encouraged by major medical societies, is made even more difficult by the diversity of critical care ultrasound utilization across various subspecialties in a variety of settings and numerous countries. In order to meet this educational challenge, a standard

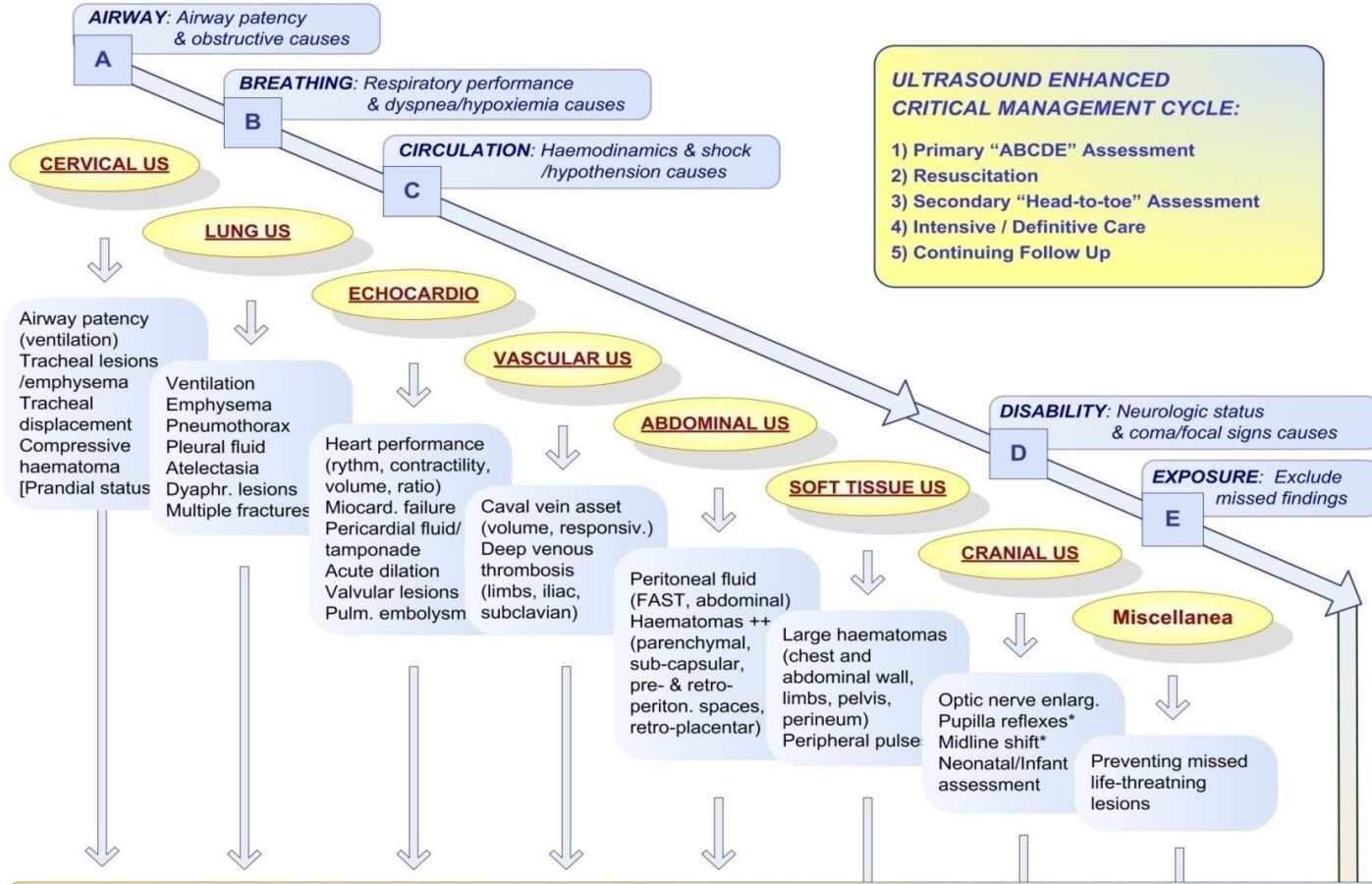
S290

Standard Specialty-Specific MINIMAL REQUIREMENTS for Level 1, 2 and 3 Credentials in Intensive & Critical Care Medicine		Prerequisite for admission to credentialing competence assessment			Prerequisite for maintenance of credentials after competence assessment			
		FORMAL COURSE	PRELIMINARY PRACTICE (PROCTORED)		CONTINUING PRACTICE	REFRESH & REVALIDATION	CONTINUING EDUCATION	QUALITY ASSURANCE
		Timing	Exams	Period	Annual Exams	Frequency		
Level 1 GENERAL (common, focused)	Single-Competence [CLS1, one-application]	1 day - 8 hours	15-30 25-50	1-3 months	15-30 25-50	2 years	Audits, Updates (literature, technology), Meetings & Congresses, Professional development, etc.	Supervision, over-reads, gold standards confirmatory testing, patient outcome review, development planning, etc.
	Basic [BLS1, ABCDE-based]	2 days - 16 hours	200	3-6 months	100	2 years		
	Advanced [ALS1, problem-based]	3 days - 24 hours	300	6-12 months	200	2 years		
Level 2 COMPREHENSIVE (specific, thorough)	Specialized [BLS2, problem-based]	5 days - 40 hours	800 (cumulative)	12 months (at Level 1)	300	3 years	Audits, Updates (literature, technology), Meetings & Congresses, Professional development, etc.	Supervision, over-reads, gold standards confirmatory testing, patient outcome review, development planning, etc.
	Sub-Specialized [ALS2, system-based]	Discipline- Specific	Discipline- Specific	Discipline- Specific	Discipline- Specific	Discipline- Specific		
Level 3 EXPERT (cutting-of-edge)	Specialized [BLS3, problem-based]	Optional	2000 (cumulative)	3 years (at Level 2)	500	5 years		
	Sub-Specialized [ALS3, system-based]	Discipline- Specific	Discipline- Specific	Discipline- Specific	Discipline- Specific	Discipline- Specific		



Integration in medical reasoning...

1. "ABCDE" PRIMARY ASSESSMENT *(Vital signs, anomalies, detectable causes, responses, complications)*



2. "ABCDE" RESUSCITATION (Electric, Fluid/Drug, Interventional)

Airway device management:
nasal-/oro-tracheal intub.,
cricoidotomy, tracheostomy

Needle thoracocentesis
Chest tube insertion
Thoracotomy

Pericardiocentesis
Thoracotomy

Diagnostic paracentesis
DPL/Mini-laparotomy
Laparotomy (intra/post-operative)

Central & peripheral vascular puncture, venous cutdown, intraosseous puncture (confirmation)*
Nasogastric tube insertion, Urinary catheterization/ Cystocentesis, Pre-/intra-/post-operative applications ...

Fluid therapy management (input, output)
Drug therapy management (inotropes, thrombolytics, diuretics, antidotes)

Defibrillation (recovery, PEA vs pseudo-PEA)
Pacing (mechanical capture, intra-venous guidance)

3. "HEAD-to-TOE" SECONDARY ASSESSMENT

4. INTENSIVE / DEFINITIVE CARE

Pre-/intra-/post-operative applications
Loco-regional anaesthesia
Foreign body detection / extraction ... Others

+/- "ABCDE" applications

+/- "LEVEL 2" applications

Skull fractures
Maxillary haematomas
Transcranial doppler
Ocular lesions

Lung contusions
Rib, sternum fractures

Dyapophysal fractures
Muscular lesions ++
Articular fluid
Haematomas ++

Liver, spleen, kidney, diaphragmatic lesions
Pneumoperitoneum
Retroperitoneal haematomas
Ileum, Intest. Ischemia
Scrotal Trauma

+/- "ABCDE" evaluation

+/- "LEVEL 2" evaluation

5. CONTINUING FOLLOW UP

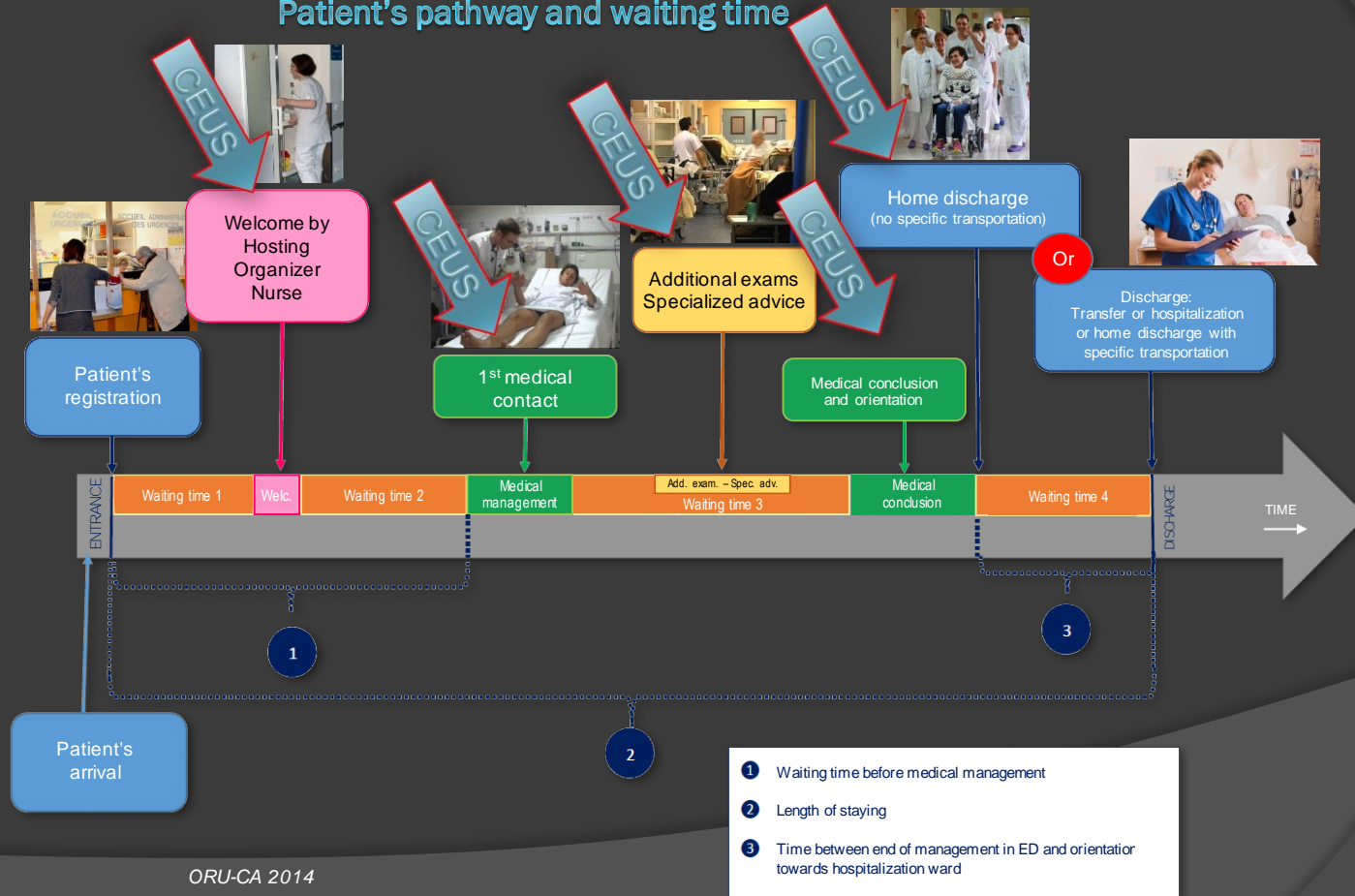
Serial examinations & monitoring

Assess vital functions, failures, lesions, causes, and anatomic areas - Address electric, fluid/drug and interventional resuscitation
Provide pre-/intra-/post-procedural/operative guidance - Evaluate and monitor treatment efficacy - Detect and treat complications - Re-assess



In or outpatients...

Patient's pathway and waiting time



Clinical applications...

- **Airway** larynx & trachea
- **Breathing** lungs & veins
- **Circulation** heart & abdomen
- **Disability** Central nervous system
- **Exposure** From head to toe (peripheral lesions & others)

• Airway

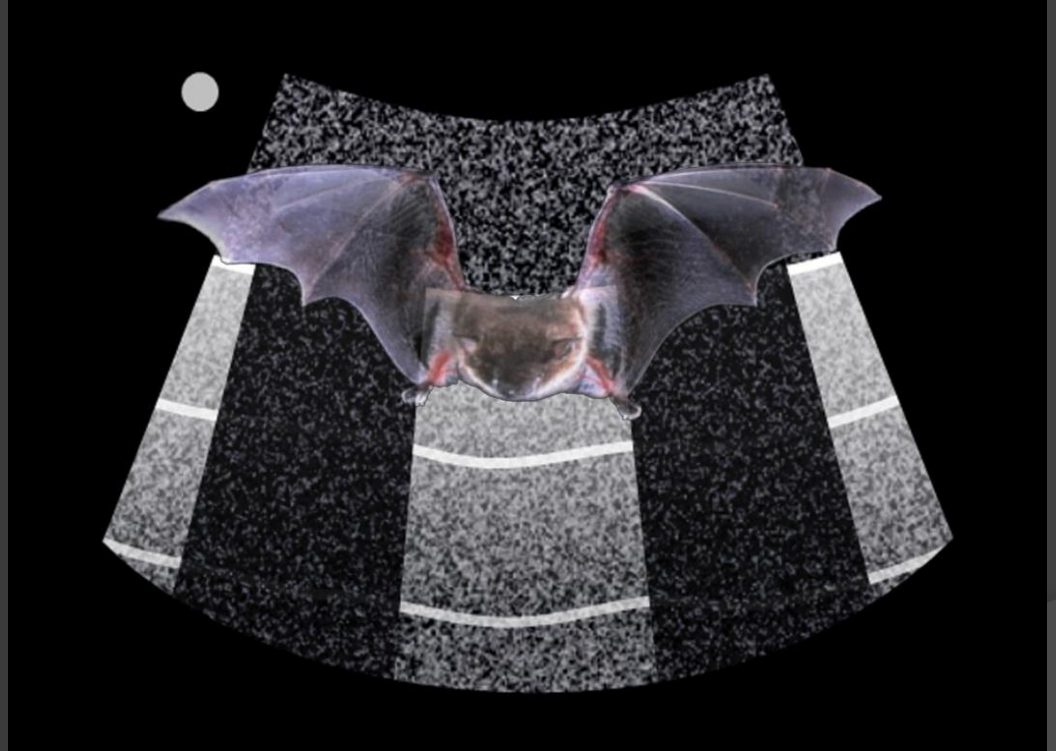


- **Airway**





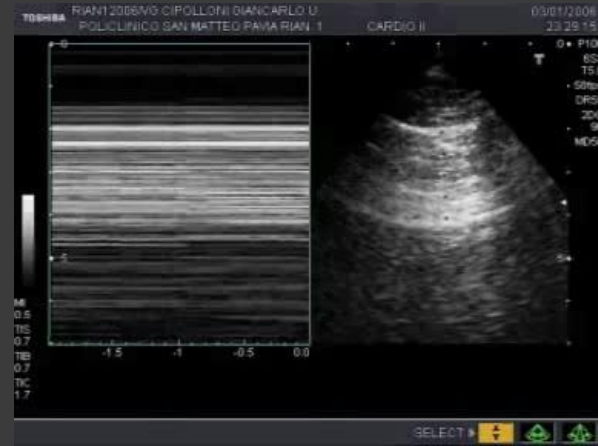
• Breathing



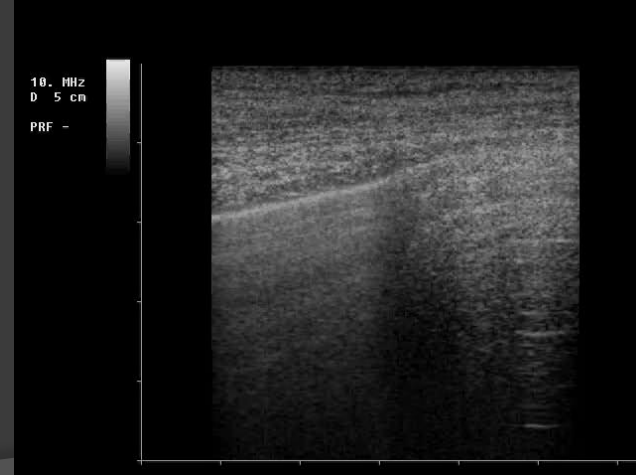
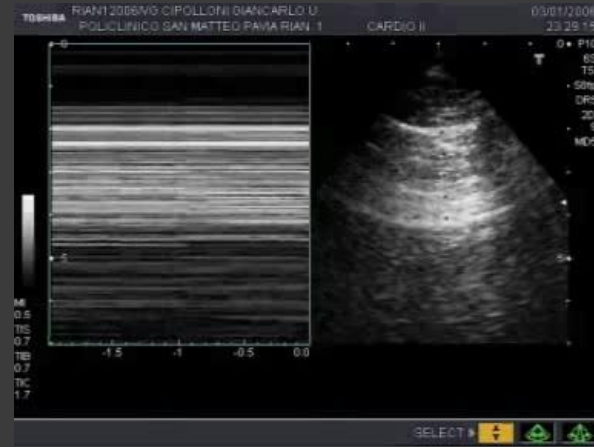
• Breathing



• Breathing



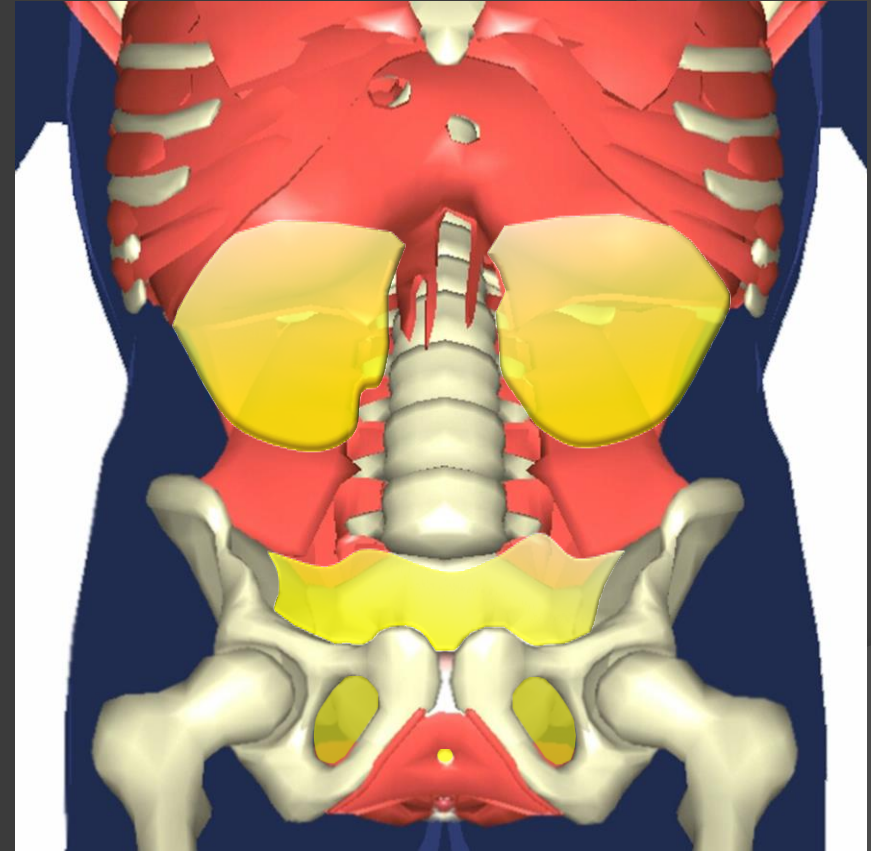
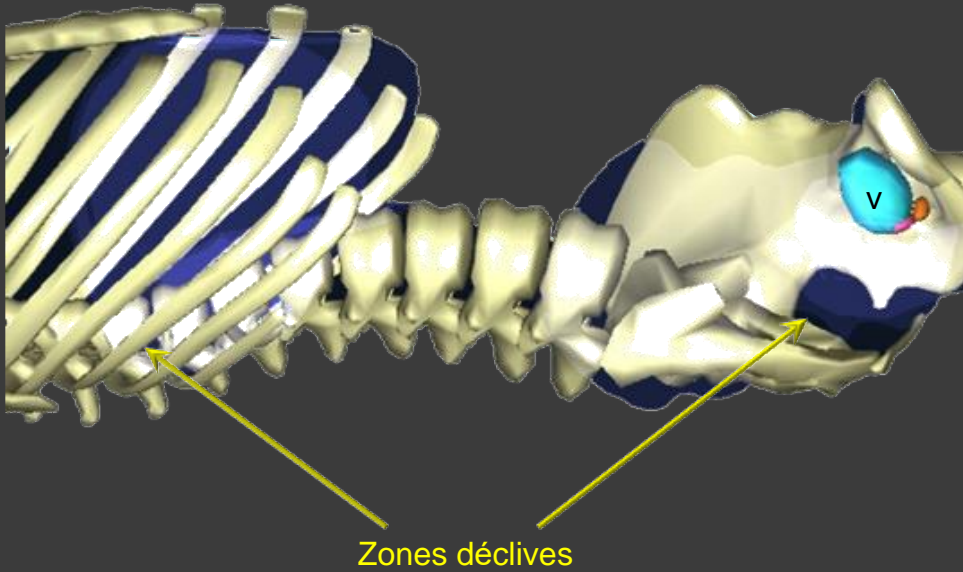
• Breathing



• Breathing

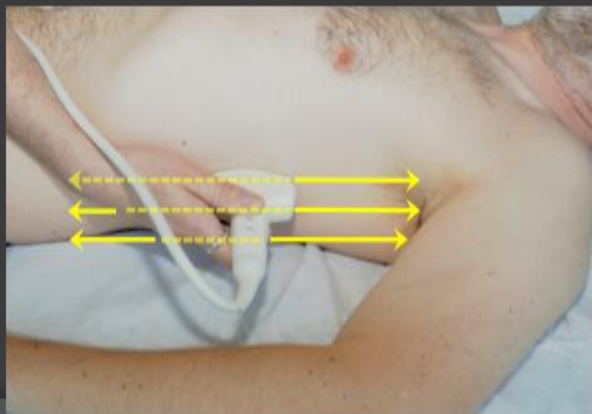
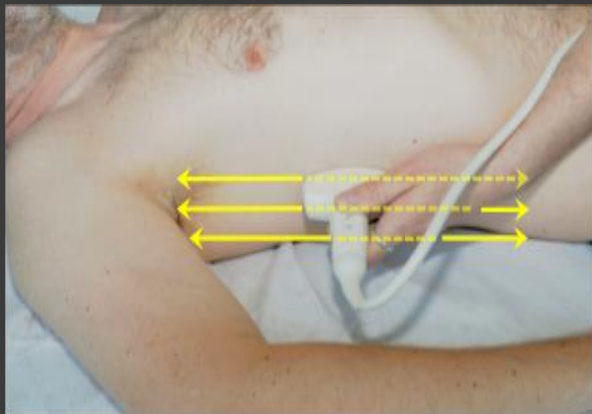


- **Circulation**





• Circulation

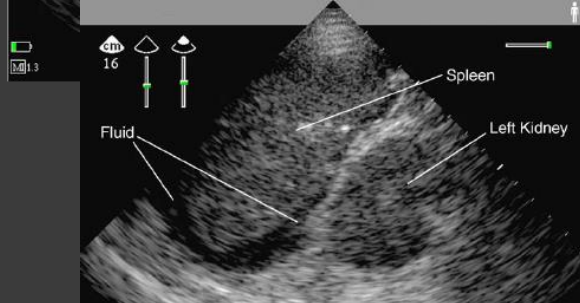
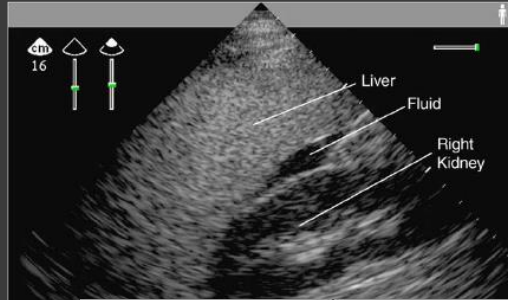




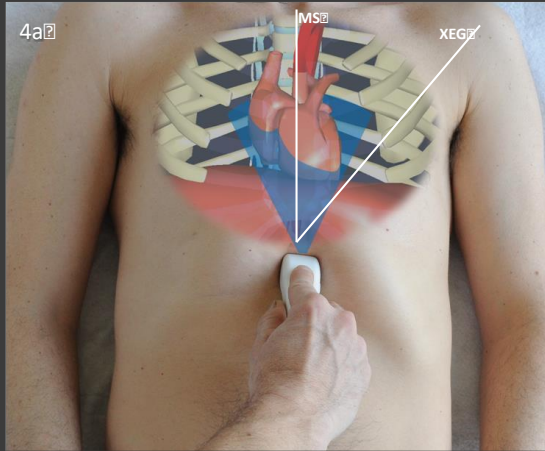
• Circulation



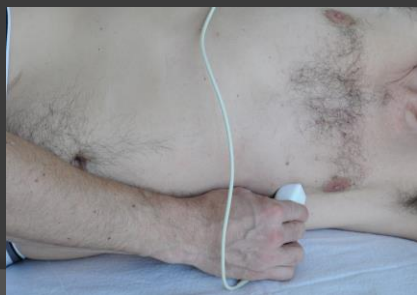
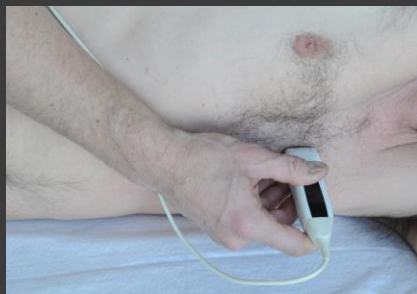
• Circulation



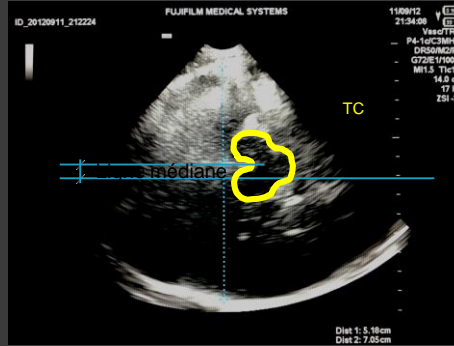
• Circulation



• Circulation



• Disability

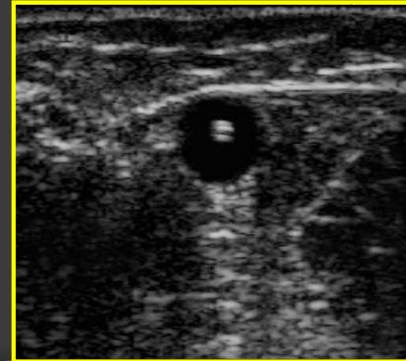
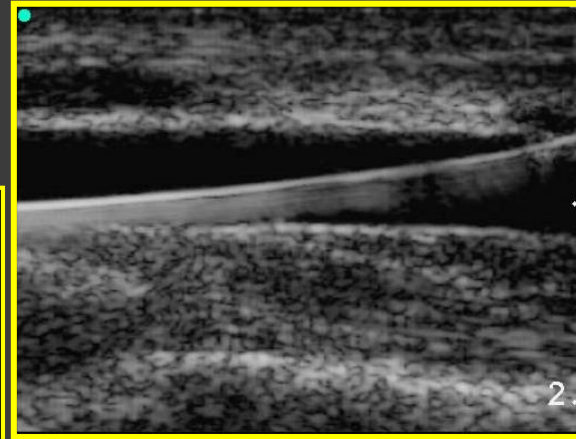
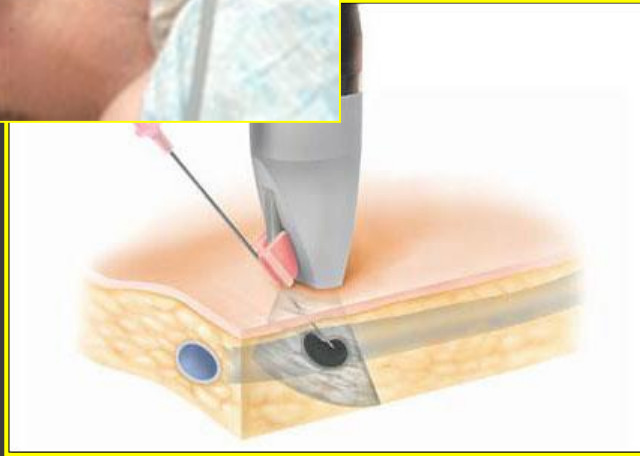


- Exposure

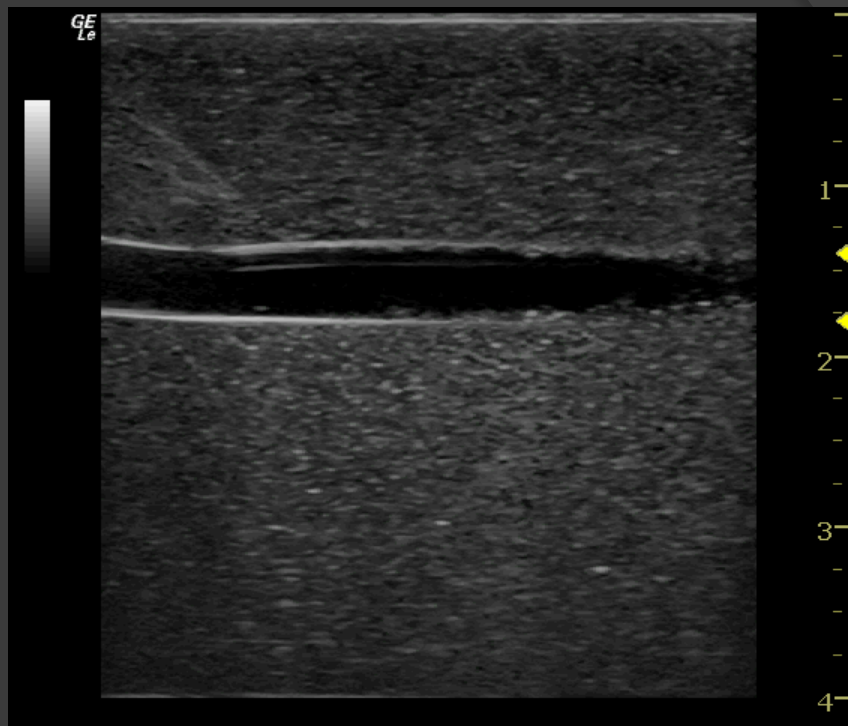


- Exposure





- Venous access (central +++)
- Arterial access
- Verification (tip, needle and catheter)



- Venous access (central +++)
- Arterial access
- Verification (tip, needle and catheter)

Questions ?



SONOSCANNER
Premium Diagnostic Ultrasound

Thanks, to go further...

Take note of the next webinars

Let us know which subject you would like a webinar on

You are already a Sonoscanner user? The « Club Utilisateur » is made for you

You are not yet equipped?

Onsite demo, End of the year deals.

Contact us International Dept :

international@sonoscanner.com

⇒ « 4 days ago, a Friday, a patient came with phlebitis suspicion. I would have loved to already have my ultrasound then! », Dr Marsaudon



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