



Ensuring the pharmacy profession has the knowledge and skills to manage patients receiving anticoagulation

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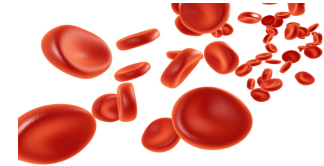
On behalf of the iPACT working group

Disclosure

Consultancy work performed in the past for Bayer

Travel grants received in the past from Bayer

Background



Indications to receive anticoagulation/antithrombotic therapy:

- Prevention of (recurrent) venous thromboembolism (VTE)
- Treatment of VTE (deep vein thrombosis & pulmonary embolism)
- Stroke prevention in atrial fibrillation (AF)
- Secondary prevention after acute coronary syndrome
- Secondary cardiovascular prevention in carotid/peripheral artery disease
- ...



Molecules used in anticoagulation therapy:

- Low molecular weight heparins (LMWH): dalteparin, enoxaparin, nadroparin, tinzaparin, bemiparin, ...
- Vitamin K antagonists (VKA) : acenocoumarol, dicoumarol, phenprocoumon, warfarin, ...
- Direct oral anticoagulants (DOAC): apixaban, dabigatran, edoxaban, rivaroxaban, ...

Some facts & figures

Global Burden of Atrial Fibrillation (AF) and Venous Thromboembolism (VTE)

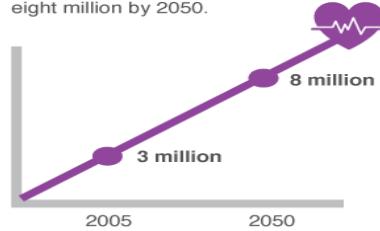
ATRIAL FIBRILLATION

33.5 million:

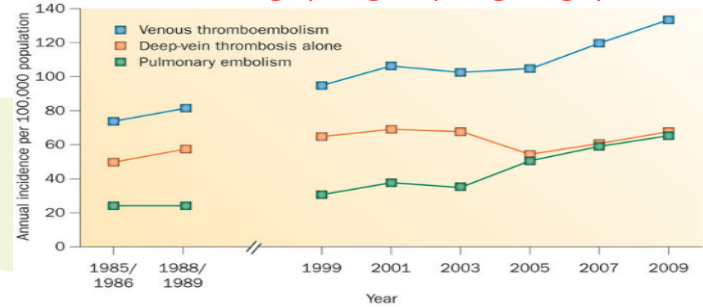
Number of people around the world who have AFib.



In 2005, AFib affected about three million Americans. It will affect eight million by 2050.



VENOUS THROMBOEMBOLISM



Nature Reviews | Cardiology

Figure 3: Savaysa sales for stroke prevention in atrial fibrillation across the US, Japan, and five major EU markets, 2015-24

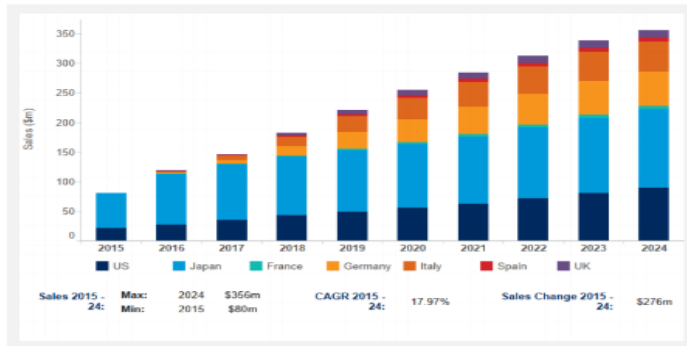
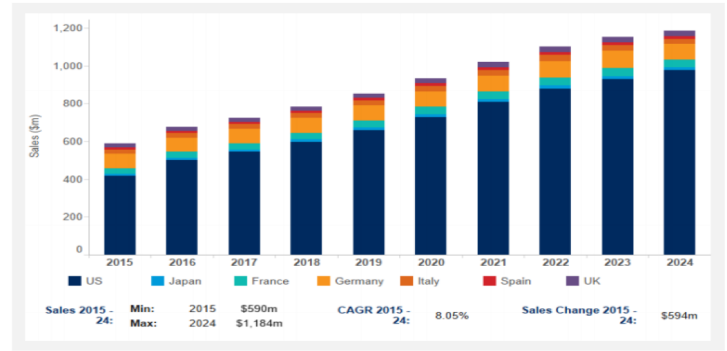


Figure 1: Venous thromboembolism treatment drug sales across the US, Japan, and five major EU markets, by country, 2015-24



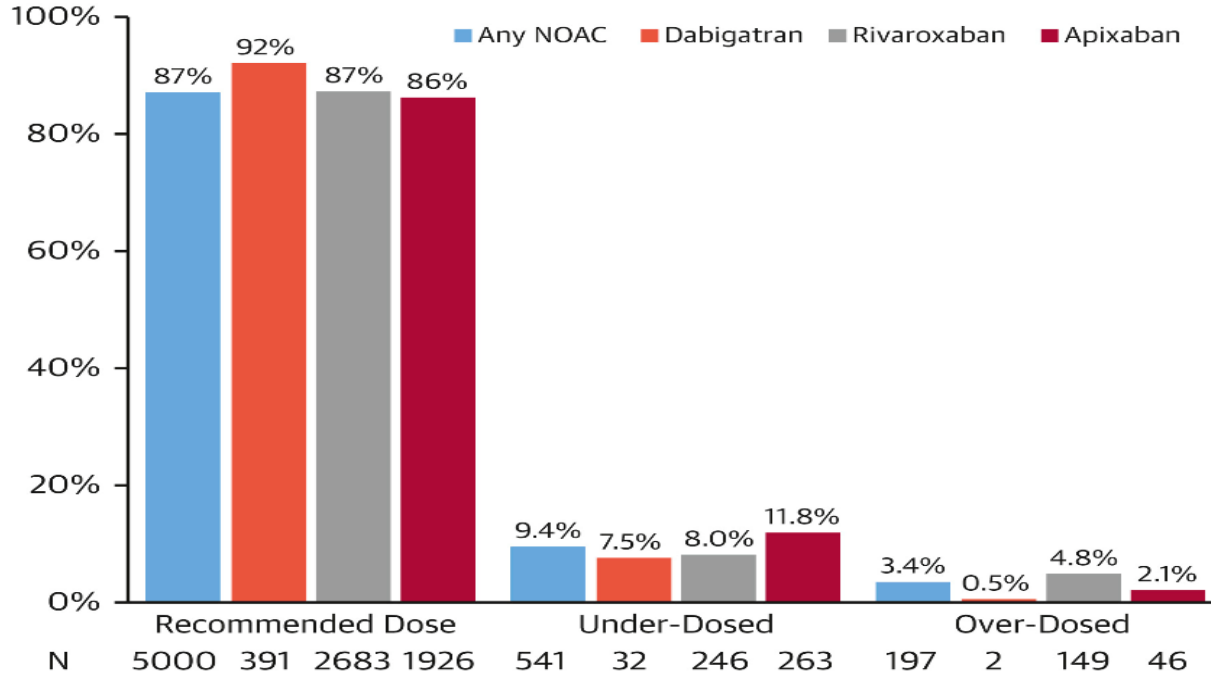
Background

Problems with DOAC prescriptions/use:

- Incorrect dosing according to indication
- Incorrect dosing according to renal function
- Incorrect dosing according to age
- Incorrect dosing according to weight
- Incorrect dosing according to co-medication
- Incorrect dosing according to CHA₂DS₂-VASc & HAS-BLED score
- Non-adherence to the therapy
- Bleedings
- ...

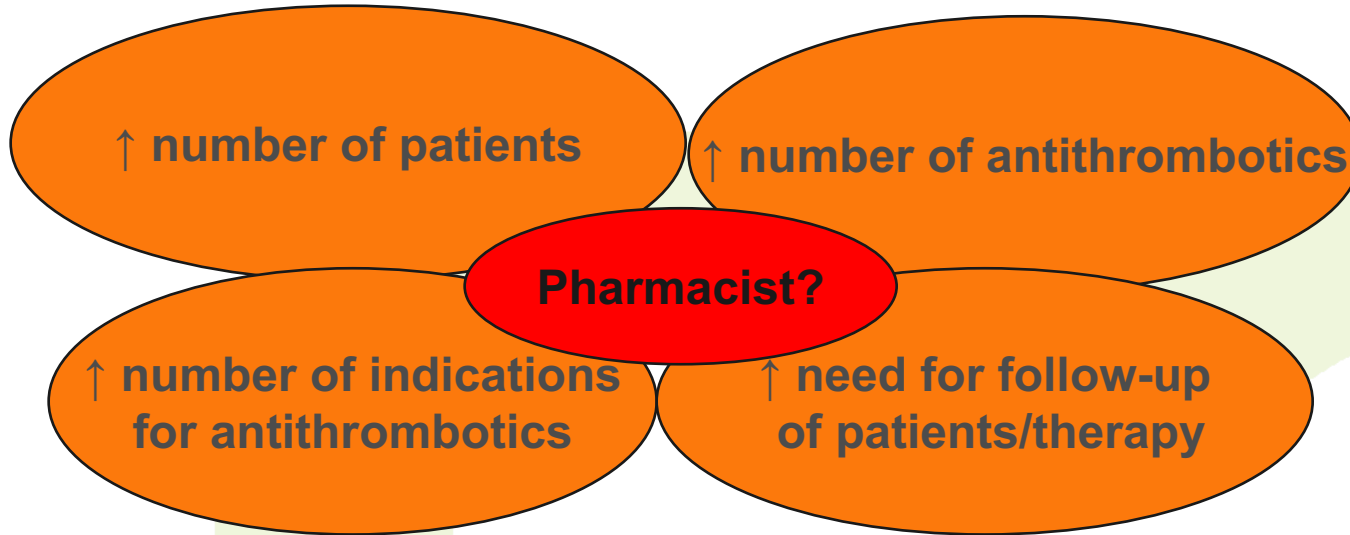
DANGER ZONE

Example incorrect dosing



Steinberg, B.A. et al. J Am Coll Cardiol. 2016;68(24):2597-604.

Increased complexity



Wordwide survey among pharmacists

Int J Clin Pharm (2017) 39:1282–1290
DOI 10.1007/s11096-017-0551-2

RESEARCH ARTICLE

Pharmacists' confidence when providing pharmaceutical care on anticoagulants, a multinational survey

Aims & objectives:

To identify self-reported gaps in competences and confidence among practicing pharmacists in the area of anticoagulation and to identify variances in confidence levels between different countries.

- To identify demographic-related trends in confidence levels
- To compare confidence levels of pharmacists between different countries
- To identify therapeutic areas for additional education
- To determine preferred method of education delivery

Needs Assessment Survey



Demographics
Confidence Levels
Needs Assessment
Required Educational Tools

6 demographic questions:

- Gender, age, country, years of work experience, level of education, and practice setting

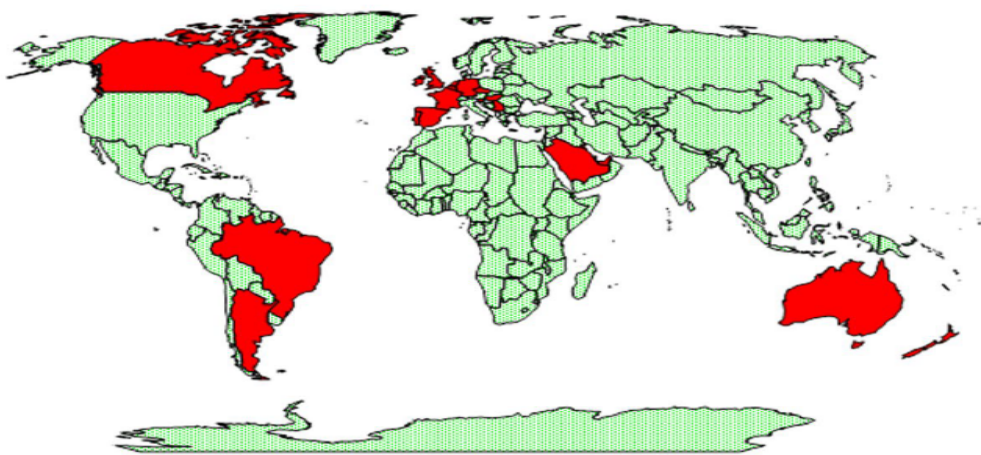
9 survey questions:

- Confidence with counselling VKA, LMWH and DOAC
- Confidence with individual counselling points (benefit, indication, adverse events, missed doses, switching agents)
- Type of reference used in practice
- Interest in additional education
- Preferred topic areas for additional education
- Preferred method of education delivery
- Interest in having a quick reference or pocket guide

Results: Participating countries

COUNTRY	No respondents (%)
AUSTRALIA	66 (1.6)
BELGIUM	408 (9.7)
BRAZIL	519 (12.3)
CANADA	356 (8.5)
CZECH REPUBLIC	236 (5.6)
FRANCE	307 (7.3)
GERMANY	281 (6.7)
HUNGARY	228 (5.4)
GULF COUNCIL COUNTRIES*	89 (2.1)
SPAIN	285 (6.8)
ENGLAND	175 (4.2)
PORTUGAL	179 (4.2)
NETHERLANDS	118 (2.8)
CROATIA	182 (4.3)
IRELAND	96 (2.3)
NEW ZEALAND	239 (5.7)
ARGENTINA	132 (3.1)
SLOVAKIA	316 (7.5)
TOTAL	4212 (100%)

(*Qatar, Kuwait, United Arab Emirates, Saudi Arabia)



Results: Demographics



♀ = 3,045 (72%); ♂ = 1,167 (28%)



Community pharmacists

n = 2,852 (68%)



Hospital pharmacists

n = 1,157 (27%)

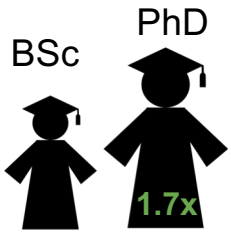


Others

n = 203 (5%)

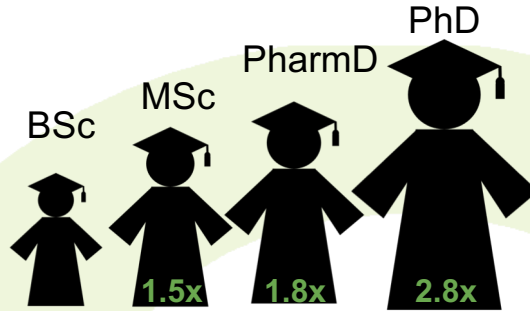
Results: Education-Based Trends (1)

Confidence level counselling on VKA

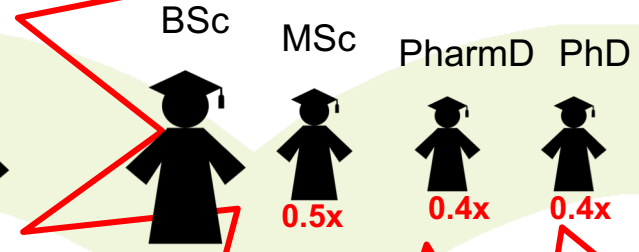


PhDs 1.7x more likely to be confident vs. BSc

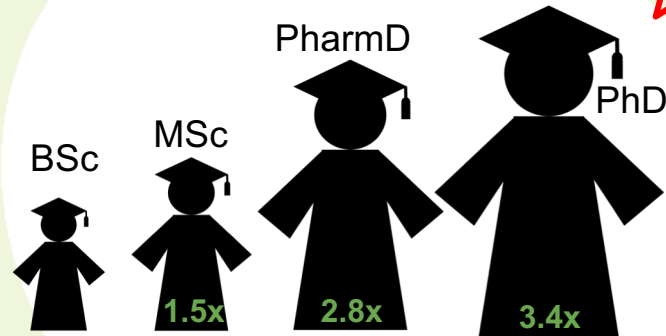
Confidence level counselling on LMWH



Confidence level counselling on DOACs



Confidence level monitoring INR/ warfarin dosing recommendations



n = 1,165

Results: Education-Based Trends (2)



**Community
pharmacists**

VS.

**Hospital
pharmacists**

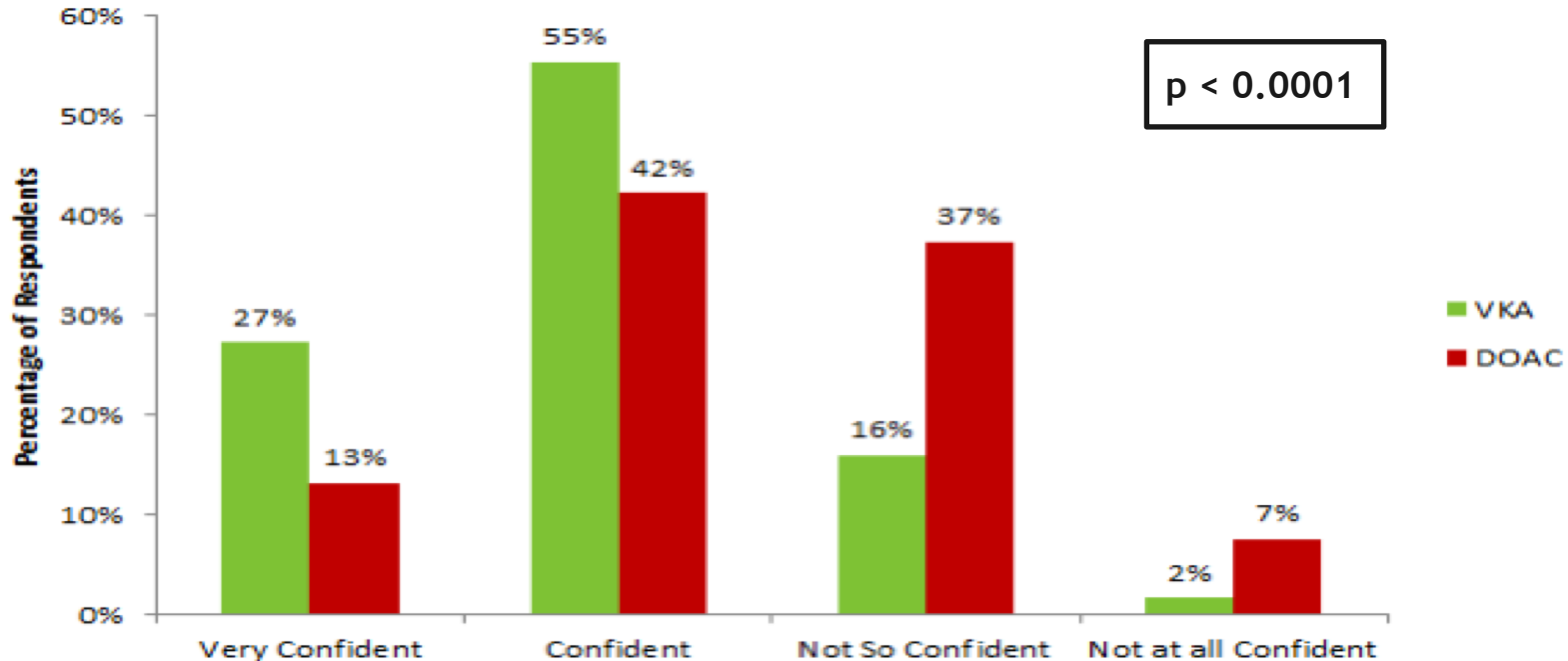


In general, hospital pharmacists displayed higher confidence levels compared to community pharmacists ($p < 0.001$)

- might be due to higher degree of specialization
- country specific differences were observed

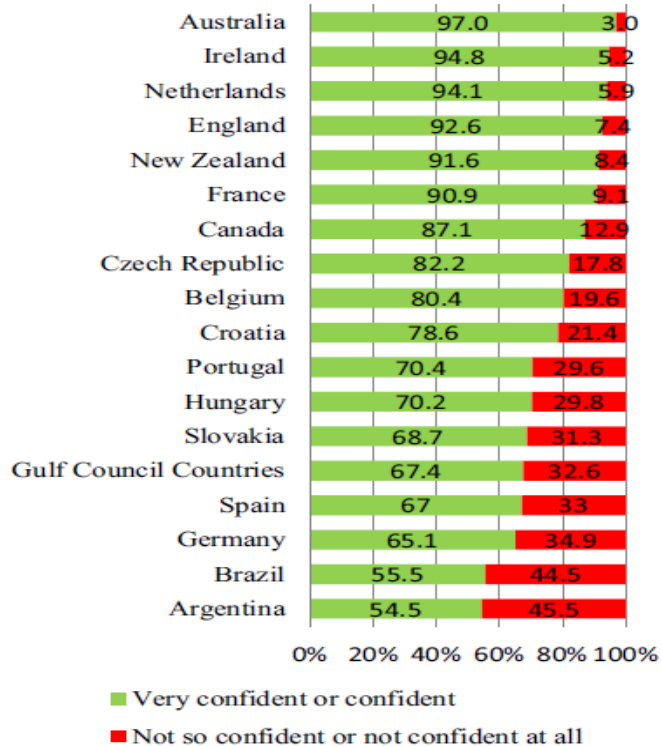
Results: Aggregate Confidence Levels

Confidence level of pharmacists when providing necessary information to patients about VKAs and DOACs (n = 1,165)

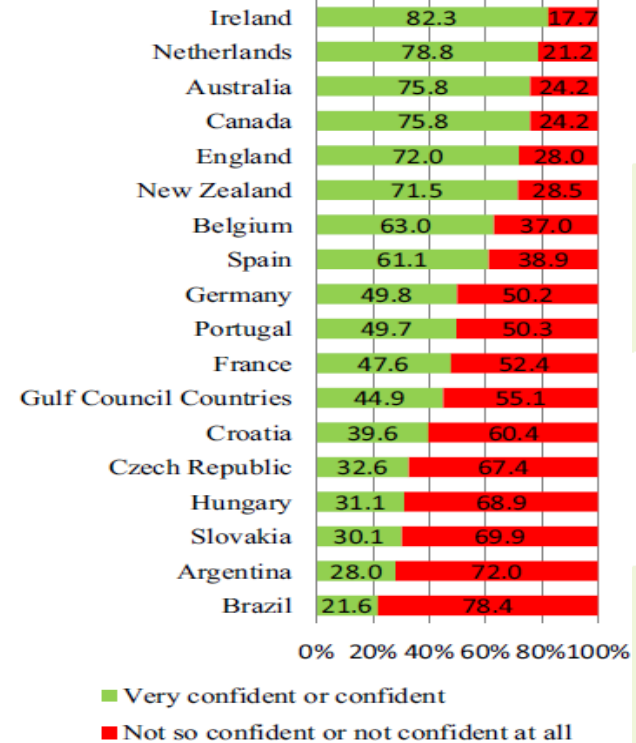


Results: Confidence Levels by Country

Counselling on VKA

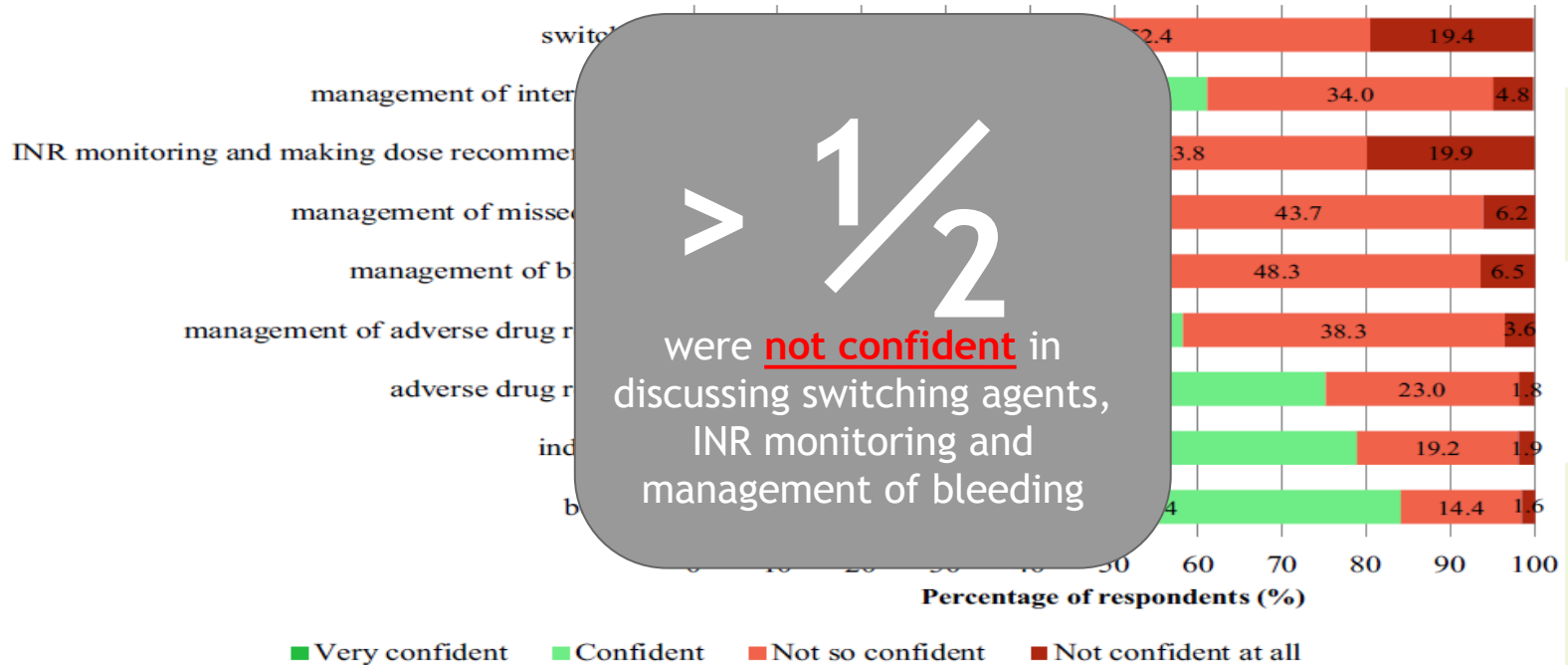


Counselling on DOACs

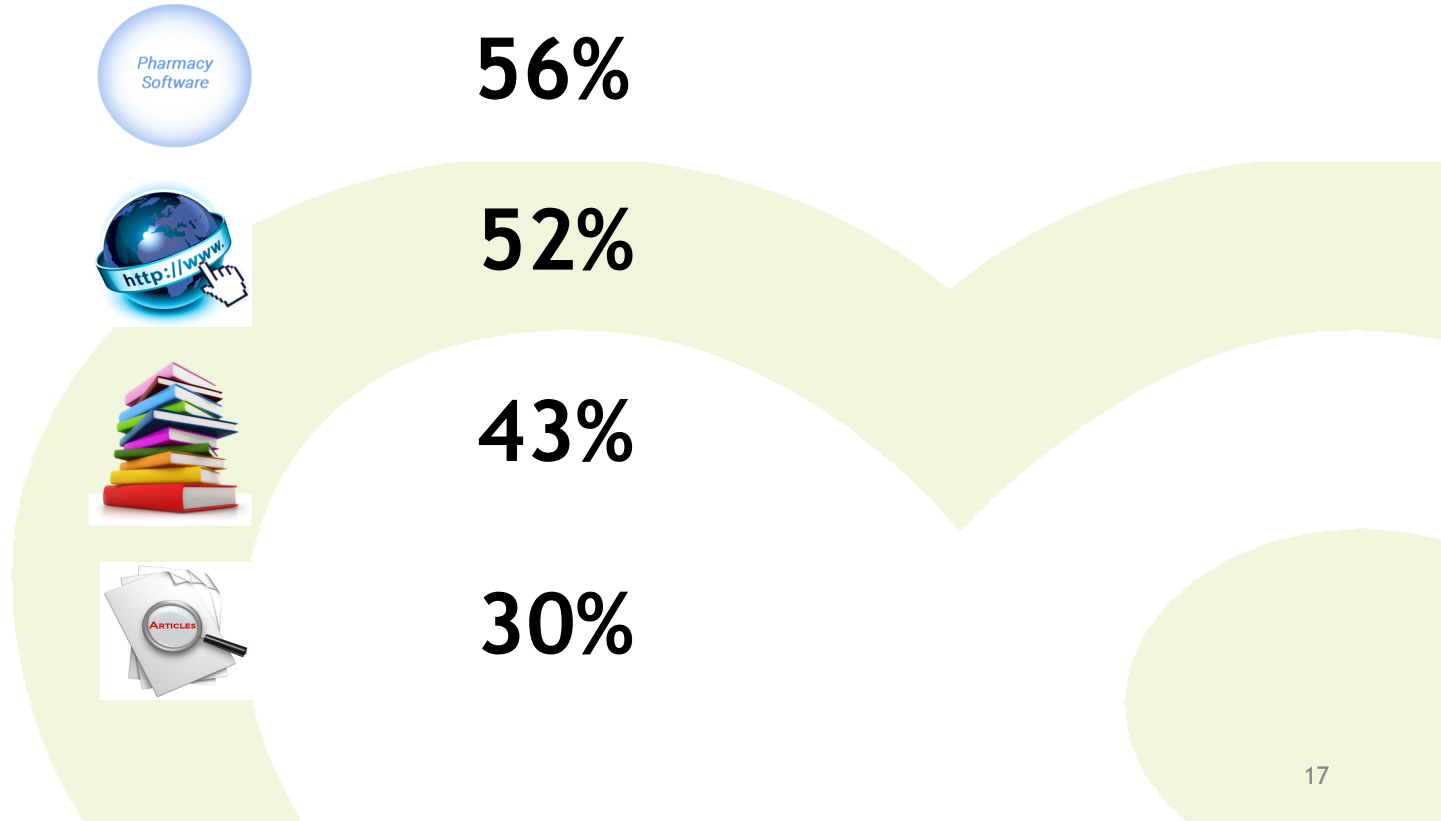


Results: Counselling

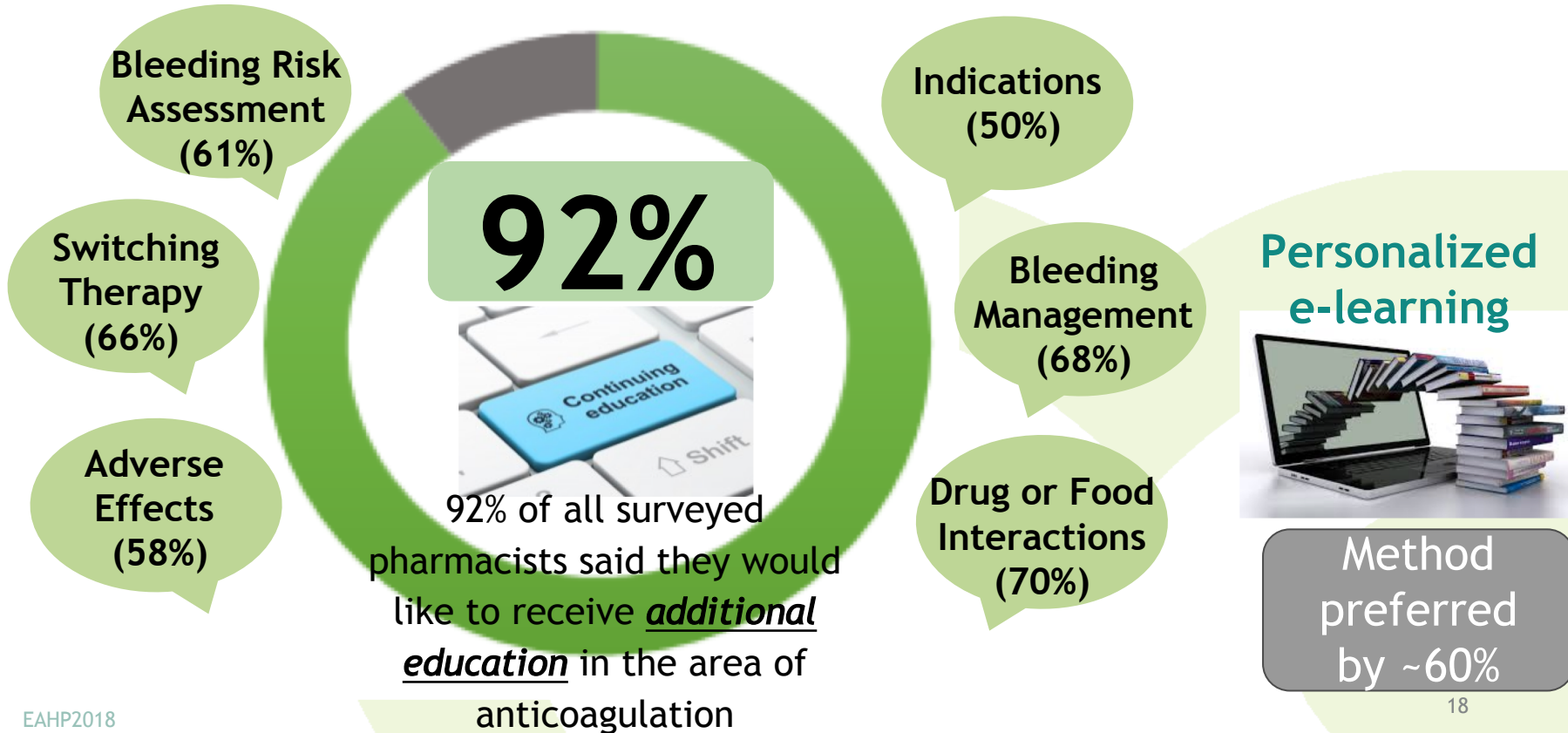
Distribution of pharmacists' confidence by counselling item



Results: Preferred sources of information



Results: Pharmacists' educational needs



E-learning

DOAC: Correct dosing and indication

START ▶

CORRECT DOSING AND INDICATION


This eLearning is an iPACT production. Press play to start.

iPACT INTERNATIONAL
PHARMACISTS FOR
ANTICOAGULATION
CARE TASKFORCE

E-learning


DOAC: Correct dosing and indication

MENU



Hi, I am Georges. I'll help you to finish this eLearning successfully.

Click on the red button to start the topic. You will need to complete the different topics in chronological order.



Indication and standard dose.





Contra indication

Renal impairment

Dose adjustments and cases

E-learning

DOAC: Correct dosing and indication

	 Dean	 Sarah	 Lucy	 Mark
	Prevention of CVA in nvAF	Treatment of VTE	Prevention of VTE after surgery (knee/hip)	Prevention of VTE
Dabigatran (Pradaxa)	Twice daily 150mg - long period	Twice daily 150mg - longer period	Once daily 220mg Short period (10 / 28-35days)	Twice daily 150mg - long period
Apixaban (Eliquis)	Twice daily 5mg - long period	10mg, twice daily (7days), twice daily 5mg - long period	Twice daily 2,5mg - short period (10-14d / 32-38d)	Twice daily 2.5mg - long period
Rivaroxaban (Xarelto)	Once daily 20 mg - long period	Twice daily 15mg (21d), once daily 20mg - long period	Once daily 10 mg - short period (14d / 32-38d)	Once daily 20mg - long period
Edoxaban (Lixiana)	Once daily 60mg - long period	Once daily 60mg - longer period	NO INDICATION	Once daily - 60 mg

E-learning

DOAC: Correct dosing and indication

04
DOSE
ADJUSTMENT

*R/ Pradaxa 110mg
1 box
Twice daily one capsule*

**PRADAXA
CASE 1**

Indication prevention of VTE after hip surgery.
CrCl 65ml/min.
Age 54 year.
Comedication no verapamil, kinidine, amiodarone.

Once daily or twice daily?

Once daily

Twice daily

i

DOSE ADJUSTMENT: Pradaxa

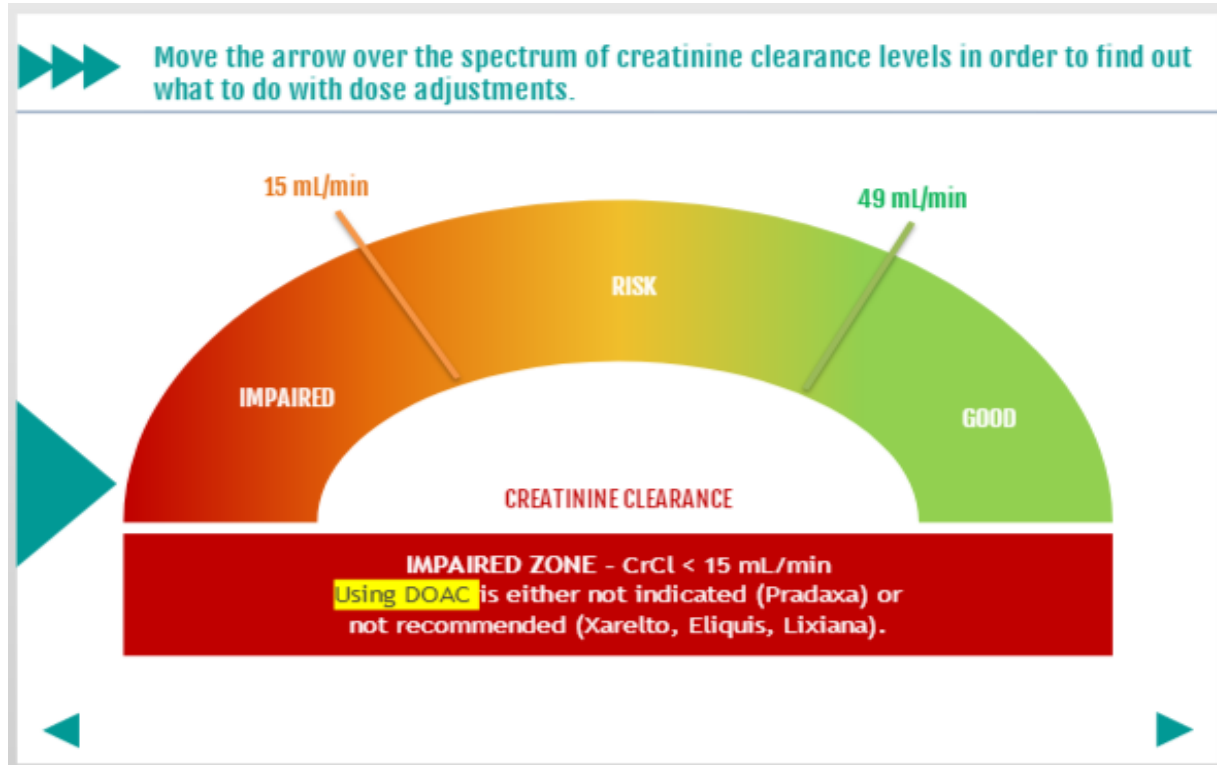
Dosing adjustments (reduction) is only necessary in case of

- **Prevention of VTE after hip/knee surgery**
dose reduction from 220mg to 150mg patients with
 - Renal dysfunction (CrCl 30-49mL/min) OR
 - Comedication (amiodarion, verapamil or kinidine) OR
 - > 75 year
- **Prevention of CVA in nvAF or treatment and prevention of VTE**
dose reduction from 300mg to 220mg in patients with
 - > 80 year OR
 - Comedication verapamil

! prescriber can chose for twice daily 110mg regardless clinical criteria

E-learning

DOAC: Correct dosing and indication



Conclusions & Key Findings (1)



Overall, pharmacists were less confident in speaking to patients about the newer DOACs as compared to older VKAs

>than 50% of pharmacists reported being not confident in speaking about aspects such as bleeding risk, INR monitoring, switching agents

Education level and years of work experience as well as area of practice correlate to greater confidence when discussion anticoagulants


Majority of pharmacists claimed they would like to receive additional education with respect to anticoagulants and managing their side effects

E-learning modules was identified as the preferred method of content delivery, as reported by survey participants

Conclusions & Key Findings (2)



Knowledge about anticoagulation therapy is anticipated to improve through e-learning



To improve skills regarding anticoagulation therapy e.g. to increase patient adherence probably more practical trainings are needed as well as more research to evaluate what works best

References

- <http://circ.ahajournals.org/content/129/8/837>
- <http://www.healthline.com/health/living-with-atrial-fibrillation/facts-statistics-infographic>
- <https://www.nature.com/articles/nrcardio.2015.83>
- <https://pharmastore.informa.com/product/venous-thromboembolism-market-forecast-analysis-2024/>
- <https://pharmastore.informa.com/product/savaysa/>

**THANK YOU FOR
YOUR ATTENTION !**

ACKNOWLEDGEMENTS

All iPACT collaborators involved in this study and especially Filipa Alves da Costa, Sotiris Antoniou, Fabio De Rango, Nadir Kheir, Katerina Ladova, Maria Dolores Murillo, John Papastergiou, Silas Rydant and Reka Viola

