

WOCOVA  
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GREECE



# Experience with long peripheral catheters

PICC team FH Prague Motol



# PICC team at FH Prague Motol

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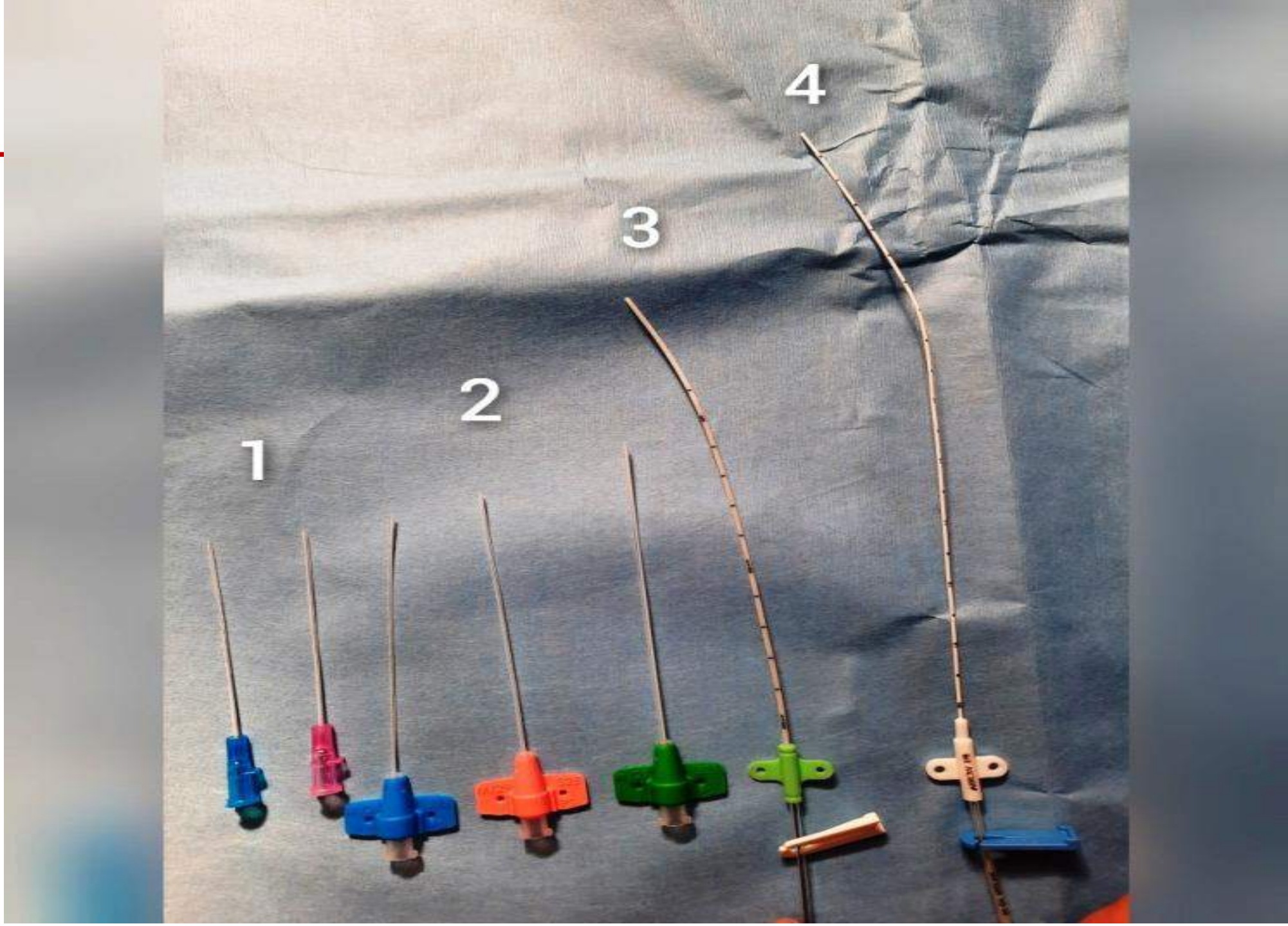
- Established in 2012
- Currently 6 full-time positions for nurses
- In 2021 members of PICC team inserted
- 1319 PICCs
- 1156 long peripheral catheters
- 229 midline catheters



# Long peripheral catheter

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- Vascular device for application in a peripheral vein
- Catheter length 6-15 cm
- It is inserted directly into a vein or under ultrasonographic control
- Several types of long peripheral catheters
- Intended for patients requiring peripheral access for 7-30 days and for DIVA patient



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# Study Objective

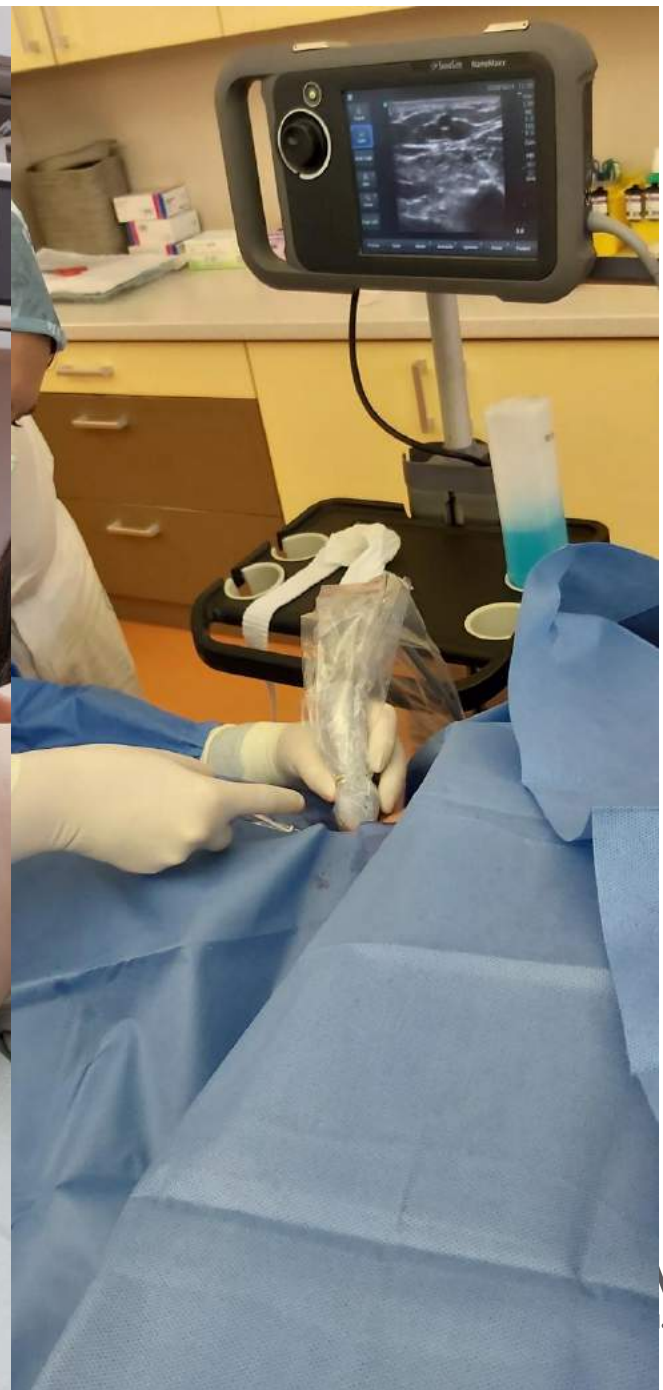
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- Evaluation of the ultrasonographic examination significance for the selection of the optimal long peripheral catheter
  - Preservation of the peripheral venous system
  - Vascular device costs

# Patients and method

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- Patients indicated for a long peripheral catheter for 7 days or DIVA
- The insertion was carried out by nurses of the PICC team at FH Praha Motol with at least 1 year of experience in ultrasonography
- US examination of both upper limbs
- The diameter of suitable veins and the depth of their placement were measured by US
- Veins on the forearm were preferred
- Catheter-to-vein diameter ratio of at least 1:3 (33%)
- Catheter selected according to the size and the depth of the inserted vein





# Types of long peripheral catheters in the study

Type of catheter	Insertion	Size	Catheter length (cm)	Maximum depth of vein (cm)	Price (euro)
Introcan	direct cannulation	22 or 20G	6.4	0.5	4
Bullpup	direct cannulation	22 or 20 G	8.5	1.5	10
Bullup	direct cannulation	18G	9.8	2	13
Vygon	Seldinger	4Fr	12	no limits	30

# Results – number of catheters

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- In 2021 insertion of 1156 long peripheral catheters
- Introcan      6.4cm      346 (29.8%)
- Bullpup      8.5cm      140 (12.1%)
- Bullpup      9.8cm      320 (27.5%)
- Vygon      12cm      356 (30.6%)

# Results – selected vein

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- Vein in forearm 132 (11.5%)
- Arm - cephalic vein 318 (27.5%)
- Arm – basilic vein 297 (26%)
- Arm – brachial vein 409 (35%)

# Results – all 1156 patients

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• Age (years)	76 (19-102)
• Gender (men)	501(43%)
• Dwell time (days)	10 (1-30)
• Complications (no/%)	136(11.7%)
– Infection	3 (0.2%)
– Dislodgment	88(7,6%)
– DVT	15 (1,7%)
– Phlebitis	15 (1.7%)
– Mechanical	4(0.3%)

# Results

Type of catheter	Age (years) Median (range)	Gender (No/% of men)	Dwell time-days Median (range)	Complications (No/%)
Introcan 6.4cm	77 (20-102)	146(42%)	9 (1-30)	40 (11.6%)
Bullpup 8.5cm	75(19-95)	61(44%)	10 (1-30)	18(12.8%)
Bullpup 9.8cm	76(20-99)	148(46%)	9 (1-30)	38(11.8%)
Vygon 12 cm	76(20-100)	146(41%)	10(2-30)	40(12.8%)

# Complications

Type of complication	Introcan	Bullpup 8.5 cm	Bullpup 9.8cm	Vygon	Statistical significance
Catheter infection	1	0	1	1	N.S.
Dislodgment	24	13	25	26	N.S.
Deep vein thrombosis	4	2	4	5	N.S.
Occlusion	3	1	4	3	N.S.
Phlebitis	3	3	5	4	N.S.
Mechanical	2	0	1	1	N.S.

# Conclusion

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- Long peripheral catheter inserted in all indicated patients
- Dwell time was comparable for all long peripheral catheters
- The difference in the frequency and type of complications between the long peripheral catheters was not significant
- **US examination before the insertion of a long peripheral catheter is useful in terms of**
  - **Preservation of the peripheral venous system**
  - **Vascular device costs**



Thank you