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py I M A G I N E I M P a c t A s s e s s m e n t o f G u i d e l i n e s I m p l e m e n t a t i o n a n d E d u c a t i o n : T h e N e x t F r o n t i e r f o r H a r m o n i s i n g U r o l o g i c a l P r a c t i c e A c r o s s E u r o p e b y I m p r o v i n g A d h e r e n c e t o G u i d e l i n e s

the Pan-European National Urological Society IMAGINE Collaborative

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1 **IMAGINE - *IM* pact Assessment of Guidelines Implementation and Education: the next frontier for**
 2 **harmonising urological practice across Europe by improving adherence to Guidelines**

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4 **Take home message:** Adherence to national and international clinical practice Guidelines is
 5 suboptimal throughout Europe. The EAU Guidelines Office “IMAGINE” project has been developed
 6 to measure baseline adherence to urological Guidelines recommendations across Europe and to
 7 identify issues which drive non-adherence.

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61 The delivery of high-quality evidence-based healthcare strongly depends on the translation of
62 scientific evidence into clinical practice guidelines (CPGs). Evidence based CPGs can improve practice
63 in terms of quality and outcomes of healthcare ¹ by encouraging interventions of proven benefit and
64 discouraging ineffective or harmful interventions ²⁻⁴. CPGs have also been shown to improve the
65 consistency of healthcare, promoting homogeneity in levels of care for similar clinical problems
66 independently of the healthcare professional, institutional setting or country ⁵. Adherence to
67 national and international CPGs is suboptimal throughout Europe. Even with the availability of
68 comprehensive urological CPGs, based on standardised and high-quality methodology, a significant
69 gap still exists in terms of CPG application in clinical practice ⁶⁻⁸, hampering the delivery of high-
70 quality urological care ⁹.

71 The issues which drive non-adherence to urological CPGs are not well understood. The EAU
72 Guidelines Office "IMAGINE" project (**IM**pac**Ass**essment of **G**uidelines **I**mplementation and
73 **E**ducation) has been developed to identify impediments and design solutions. Implementation
74 science is the appropriate framework to identify the barriers to knowledge transfer, or more
75 importantly, the optimum interventions to limit or overcome such barriers to improve CPGs
76 adherence allowing for the optimisation of healthcare resources whilst ultimately improving patient
77 outcomes ¹⁰. In order to design interventions to increase adherence to CPGs, we must first measure
78 baseline adherence to CPGs across Europe. To effectively measure baseline adherence, IMAGINE has
79 launched a European wide multi-centre retrospective observational study in collaboration with
80 European National Urological Societies endorsing the EAU Guidelines. At present, the EAU
81 Guidelines are endorsed by 86% of European countries, including all 27 EU Member States. Before
82 an audit of guideline adherence is commenced, all participating National Societies are asked to
83 complete a brief survey that assesses if they have National Guidelines covering the same
84 recommendation as the one being audited and if so, to what extent the guidance differs.

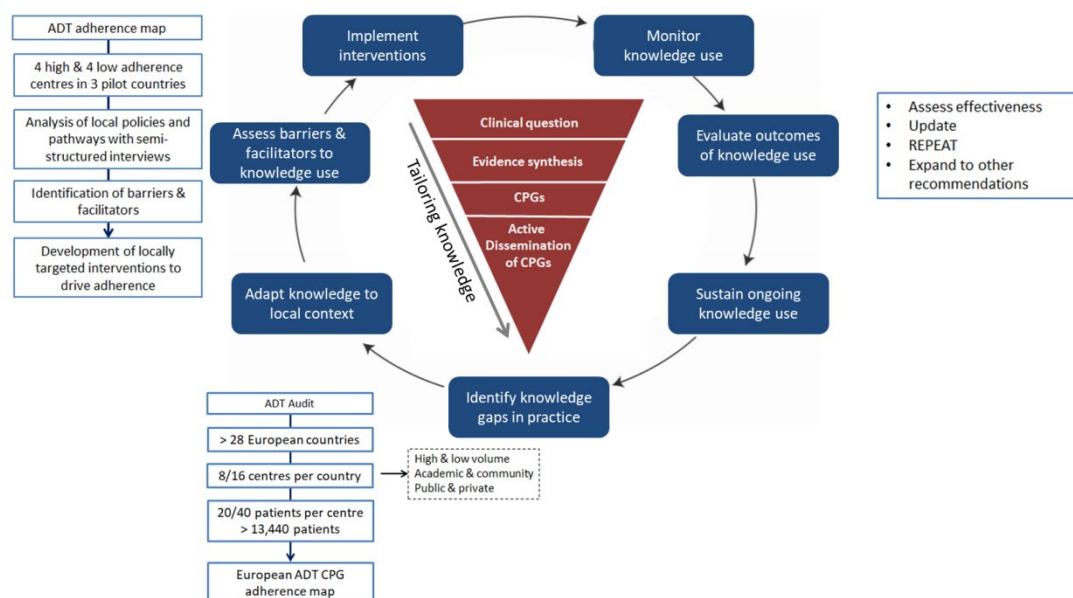
85 IMAGINE reviewed all EAU oncology guidelines for 'strong' recommendations with level 1a evidence
86 (1a: meta-analysis of randomised controlled trials). The group then surveyed oncology panels to
87 prioritise the identified level 1a recommendations for which there was known/suspected

88 heterogeneity in practice and where addressing the heterogeneity would likely have a positive
89 impact on patient outcomes and/or economic burden. Using this method, the following
90 recommendation was prioritised for the pilot study: Do not offer neoadjuvant androgen deprivation
91 therapy (ADT) before surgery in men with locally advanced or high-risk prostate cancer. In this
92 context, initial studies in Italy have estimated that a quarter of prostate cancer patients received
93 ADT contradictory to the recommendation of the EAU Prostate Cancer Guidelines, with
94 approximately 50% receiving ADT prior to surgery⁶. Misuse of ADT was associated with increased
95 costs for the healthcare system and higher rates of avoidable side effects for patients. It is unclear
96 why ADT is prescribed by some clinicians against the recommendations of the EAU Guidelines
97 especially given the high certainty of the evidence upon which the current EAU ADT Guidelines
98 recommendation is based. Whilst informative, the current studies do not give a high enough
99 resolution of practice across Europe and a more methodologically robust audit is required.

100 To map ADT practice patterns across Europe, IMAGINE has created a bespoke online data collection
101 platform. In collaboration with the European National Urological Societies, IMAGINE will identify 8 or
102 16 sites per country (nations with populations >35 million contributing more sites), covering high
103 and low volume centres (high volume defined as >50 prostatectomies/year), academic and
104 community hospitals, and public and private hospitals. Each site will have a nominated site
105 coordinator who will be responsible for retrospectively auditing 20 (low volume centre) or 40 (high
106 volume centre) eligible patients using an inbuilt random date generator to identify cases in an
107 unbiased way. No identifiable personal participant or patient information will be collected, the
108 hospitals will be reviewing data on their own patients (which they will confirm that they have the
109 right to do, as secondary medical research, subject to any variations in data privacy law
110 implemented in their country) and no personal data will be transferred to or processed by IMAGINE,
111 hence IMAGINE's collation and analysis of the audit results of each site will not include the
112 processing of personal data and so the General Data Protection Regulation (GDPR) will not apply.
113 This audit is classified as service evaluation and does not require sponsorship and ethical review.

114 The audit will provide a robust map of guideline adherence to ADT recommendations in Europe as
115 well as a validated platform to map adherence to other recommendations. The key to changing non-
116 adherent behaviours is to understand what is initiating and maintaining undesirable behaviours, and
117 what might facilitate desirable ones¹¹. The ADT adherence map will inform sampling for the second
118 phase of the project: a behavioural theory informed investigation into the barriers and facilitators to
119 adherence to the ADT recommendation. By incorporating content analysis of National and/or local
120 guidelines, local policies and pathways and semi-structured interviews organised using the
121 theoretical domains framework (TDF)^{11,12} in a sample of European countries, IMAGINE will elucidate
122 how organisational, social, environmental, and personal factors may influence how healthcare
123 professionals manage patients in a range of settings. A similar investigation of barriers to ADT de-
124 implementation in the United States is underway and we look forward to learning from their results
125¹³. Ultimately, the contextual information gathered in the qualitative studies will inform the
126 development of targeted interventions tailored to local contexts aiming to improve adherence, this is
127 critically important as interventions are more effective when designed to address local barriers¹⁴.
128 Finally IMAGINE will map the findings to the Behaviour Change Taxonomy¹⁵ to enable us to identify
129 potential behaviour change interventions, which we will aim to test using randomised or controlled
130 before and after designs.

131 Figure 1: IMAGINE framework outlining the movement of recommendations from CPGs to clinical
 132 practice based on the knowledge-to-action framework¹⁶.



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