



A GUIDELINE ON VISUAL SCREENING IN SCHOOL HEALTH SERVICES IN FLANDRES (BELGIUM) From Science to Practice

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Content of the presentation

■ Guideline on visual screening in school health services in Flanders

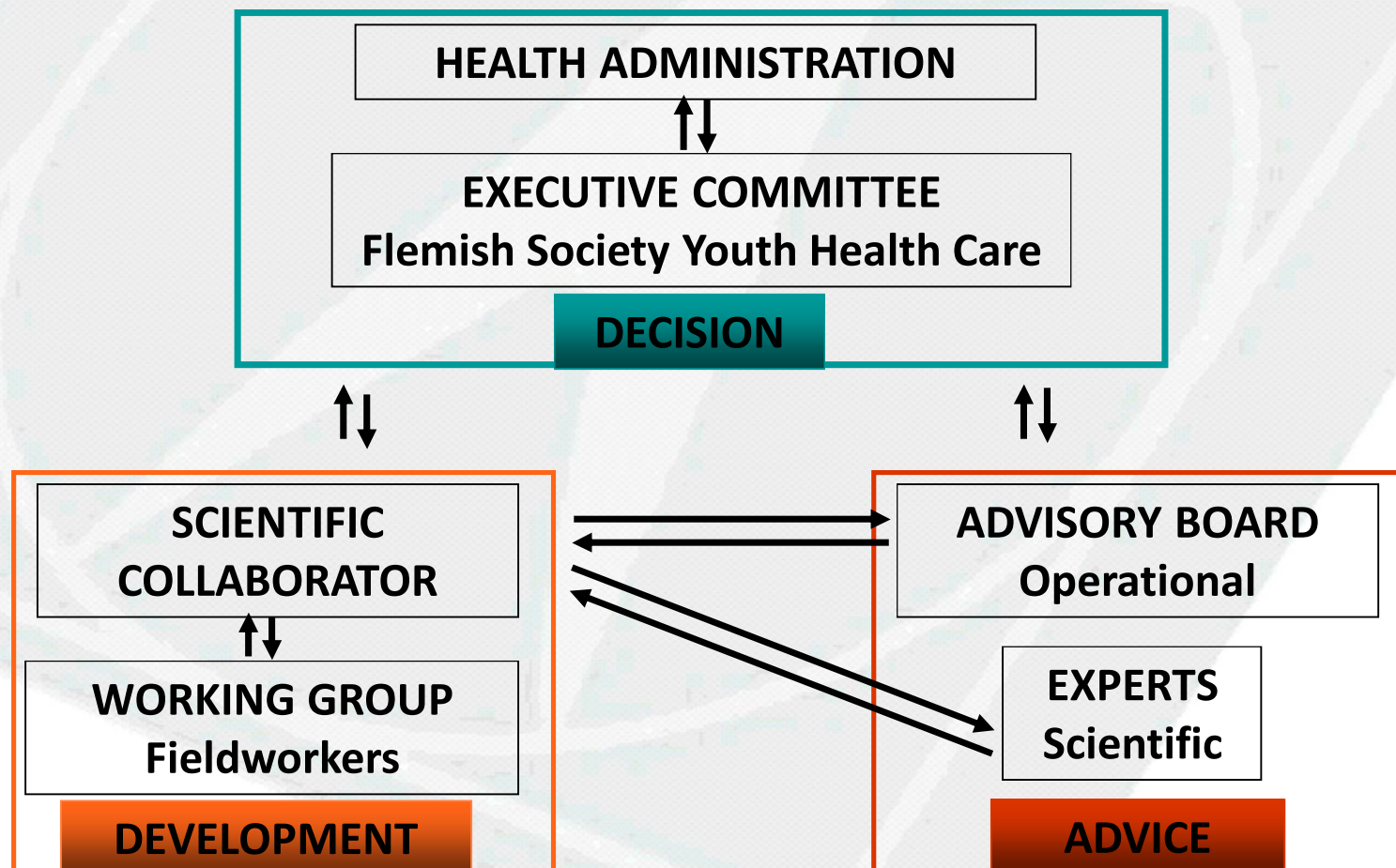
- Methodology
- Highlights of the guideline
- Implementation strategy
- Evaluation

Development of Guidelines Youth Health Care

Generic keys to success

- Programme grounded on scientific evidence (science)
- Warranting also broad consensus within professional group (profession)
- Recommendations applicable in daily practice (feasibility)
- Developed within strict timelines following a stepwise approach (strategy)

Guidelines Youth Health Care Methodology – Steering procedure



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How to establish a screening program?

General objectives of the program



**Specific targets
to be attained**

General objectives of visual screening in school health services as derived from literature and expert advice

■ Primary objective:

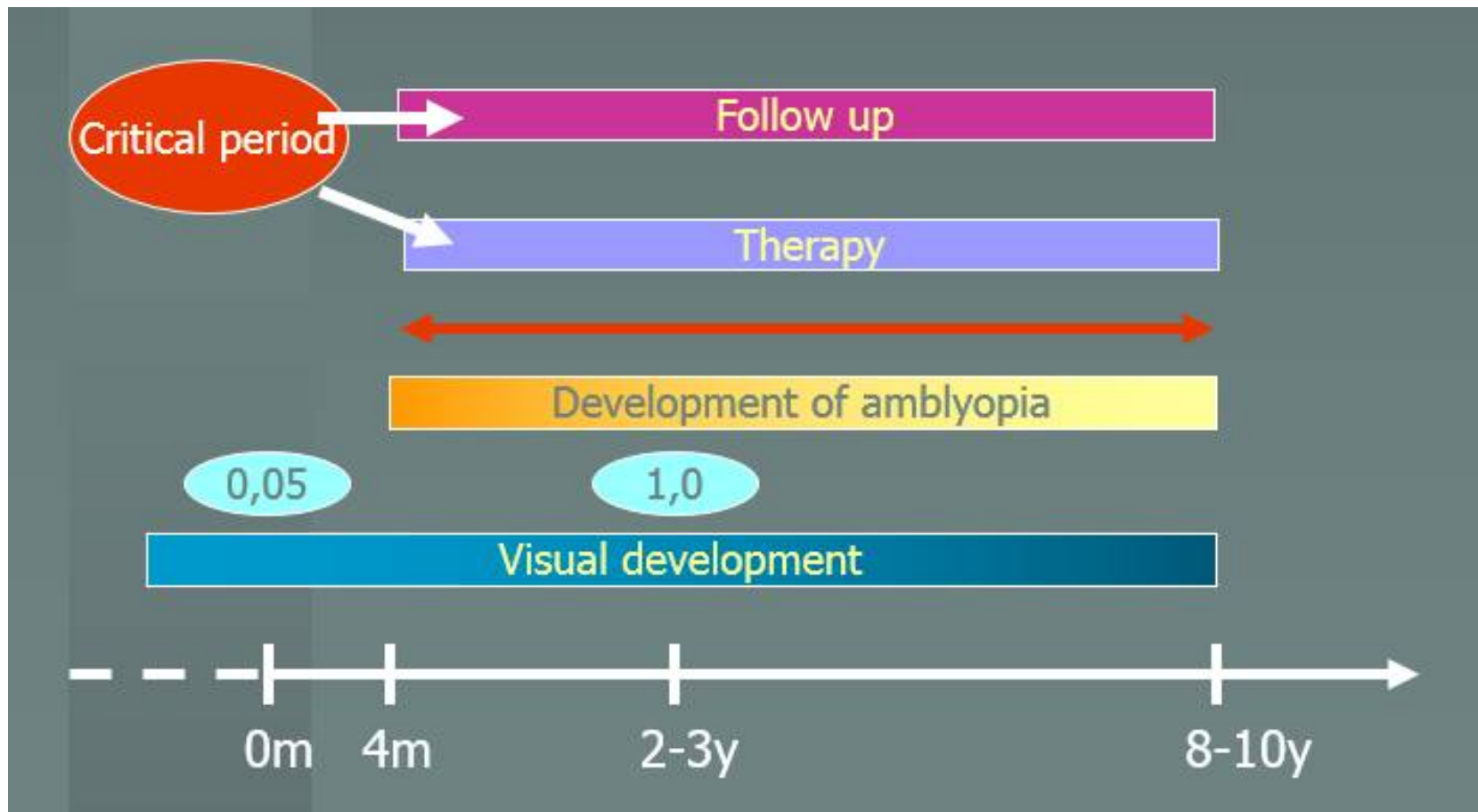
- Early detection of amblyopia ≤ 8 years
- Early detection of amblyogenic factors ≤ 8 years

■ Additional objective:

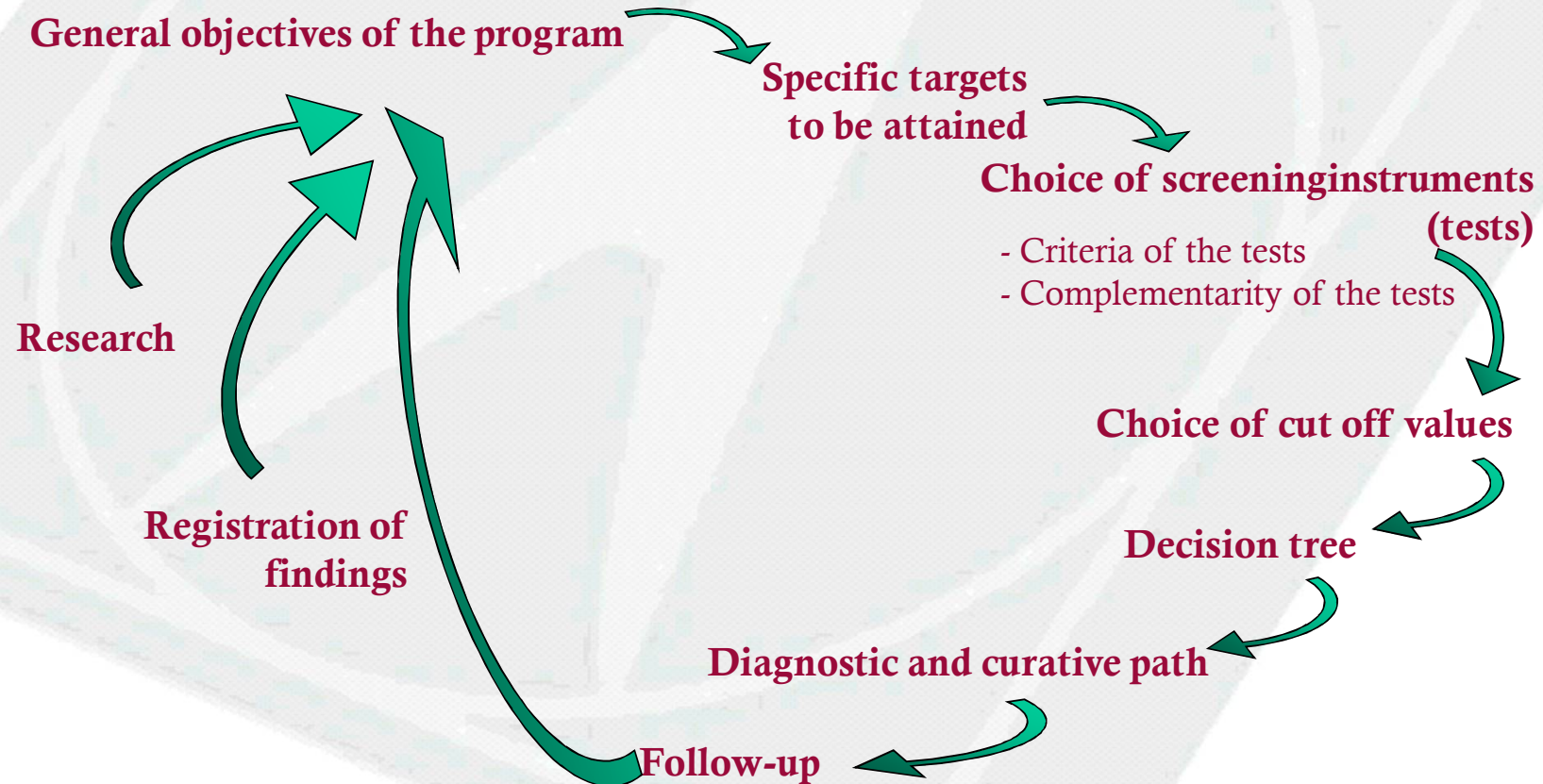
- Detection of deficient colour vision

No evidence pro or contra systematic visual screening > 10 years of age

Development of the visual system



How to establish a screening program?



How to establish a screening program?

General objectives of the program



**Specific targets
to be attained**



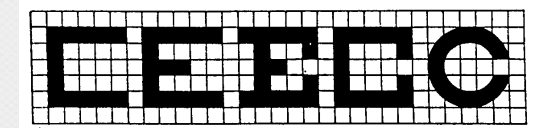
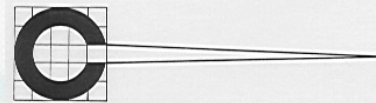
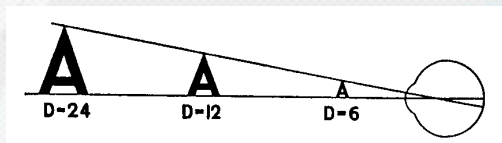
**Choice of screening instruments
(tests)**

- Criteria of the tests

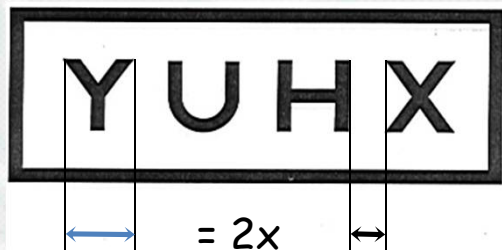
Test for visual acuity (amblyopia): ≤ 8 y

■ Criteria: literature

1. Snellen principle



2. Principle of “Crowding”



3. Presence of oblique elements

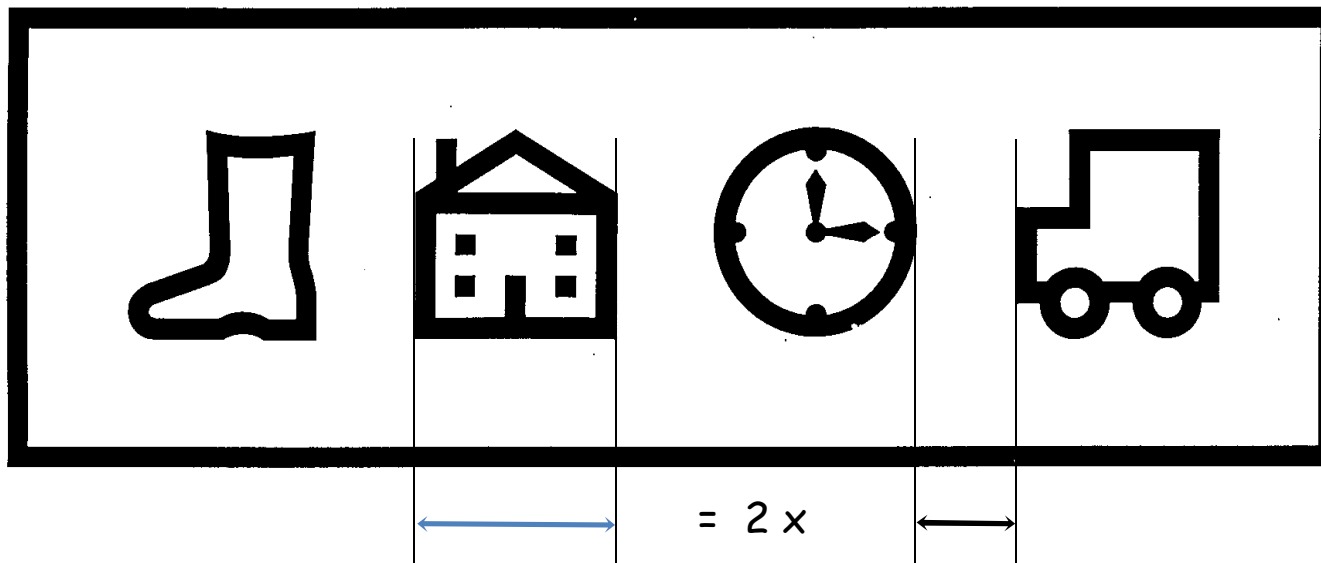


4. Preferably, logarithmic scale

Test for visual acuity (amblyopia): ≤ 8 y

■ Instrument of choice

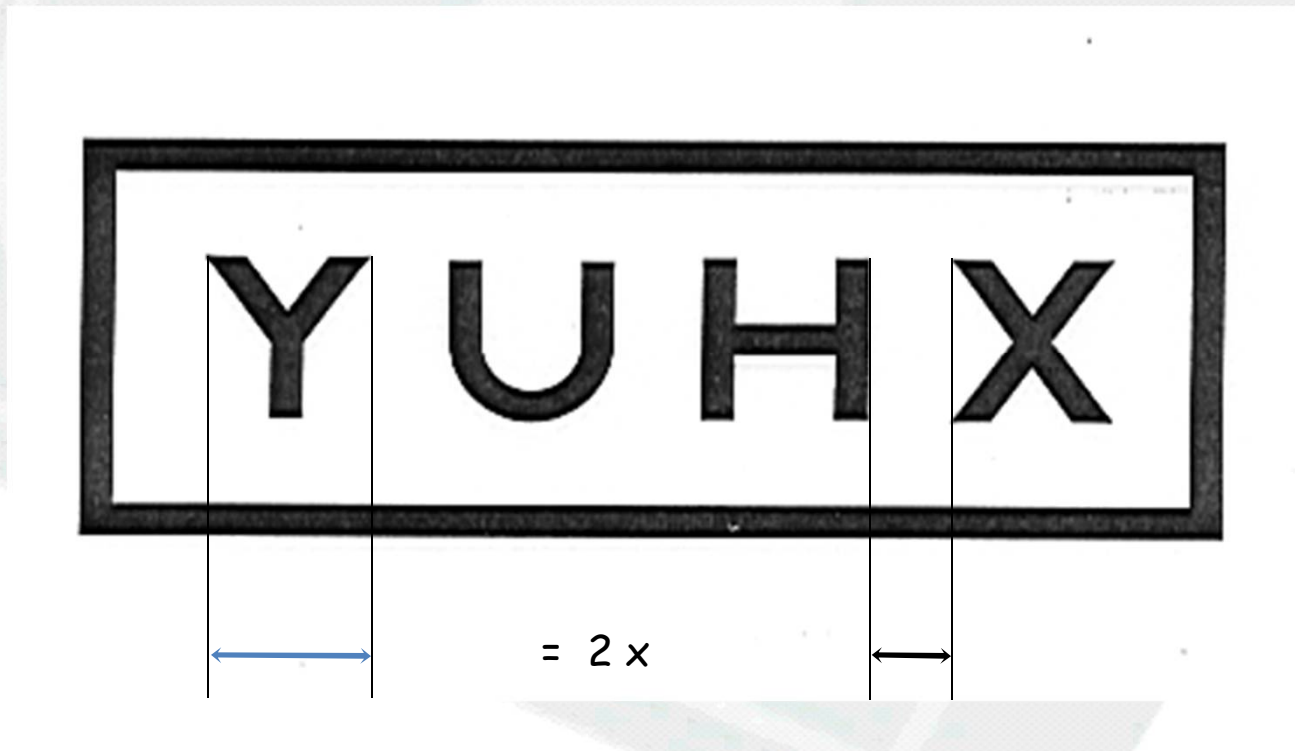
Kay 3m Crowded test



Test for visual acuity (amblyopia): ≤ 8 y

■ Instrument of choice

LogMAR 3m Crowded test



Choice of test for visual acuity according to age group

MATERNEL		
1° year <u>(3y)</u>	KAY 3m Crowded Book	LogMAR 3m Crowded Test
2° year <u>(4y)</u>	LogMAR 3m Crowded Test	KAY 3m Crowded Book
PRIMARY		
1° year <u>(6y)</u>	LogMAR 3m Crowded Test	
3° year <u>(8y)</u>	LogMAR 3m Crowded Test	Snellen Letters on a line
5° year <u>(10y)</u>	Snellen Letters on a line	LogMAR 3m Crowded Test
SECONDARY		
1° year <u>(12y)</u>	Snellen Letters on a line	LogMAR 3m Crowded Test
3° year <u>(14y)</u>	Snellen Letters on a line	LogMAR 3m Crowded Test
SPECIAL EDUCATION		
	Test adapted to cognitive level and development of the child	
		Ffooks symbols test

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General objectives of the program



**Specific targets
to be attained**



**Choice of screening instruments
(tests)**
- Criteria of the tests



Choice of cut off values

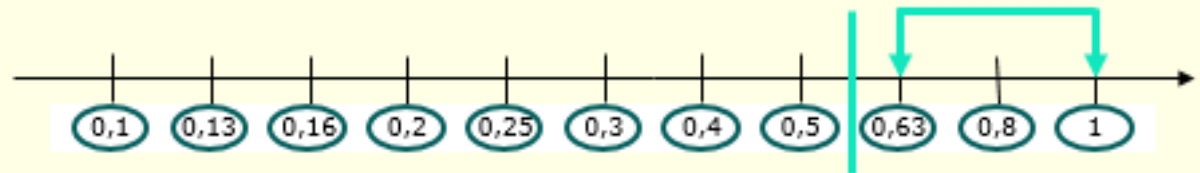
Cut off values

■ Logarithmic scales

- LogMAR 3m Crowded test



- Kay 3m Crowded test



Cut off values

MATERNEL	1° choice	2° choice
1° year (aged 3 y)		
Test	<u>Kay Crowded</u>	<u>LogMAR Crowded</u>
Cut-off for referral	<0,63 or >1 line difference	<0,5 or >1 line difference
Retest (1-3 m)	If result not reliable	If result not reliable
2° year (aged 4 y)		
Test	<u>LogMAR Crowded</u>	<u>Kay Crowded</u>
Cut-off for referral	<0,63 or >1 line difference	<0,63 or >1 line difference
Retest (1-3 m)	If result not reliable or referral without response	If result not reliable or referral without response

How to establish a screening program?

General objectives of the program

**Specific targets
to be attained**

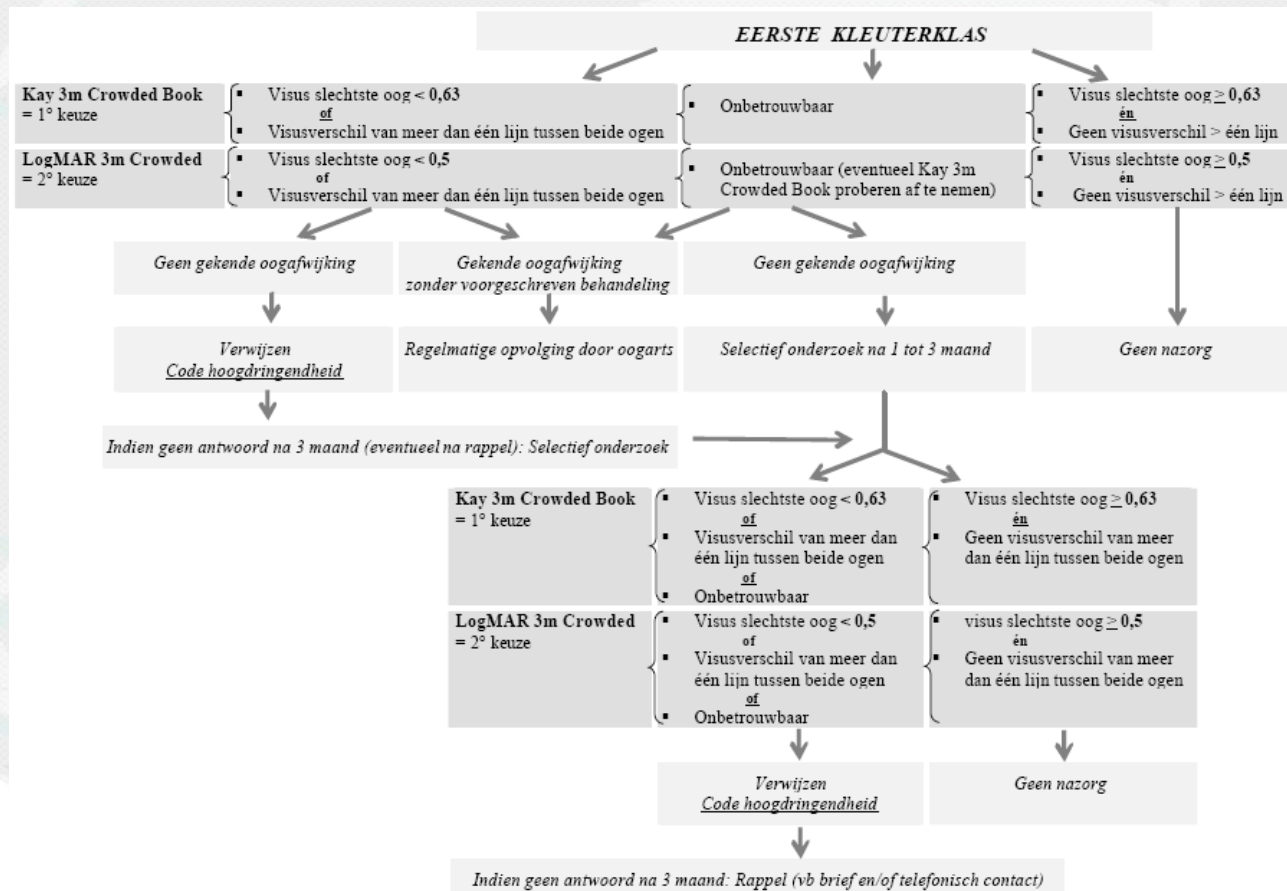
Choice of screening instruments

- Criteria of the tests
- Complementarity of the tests

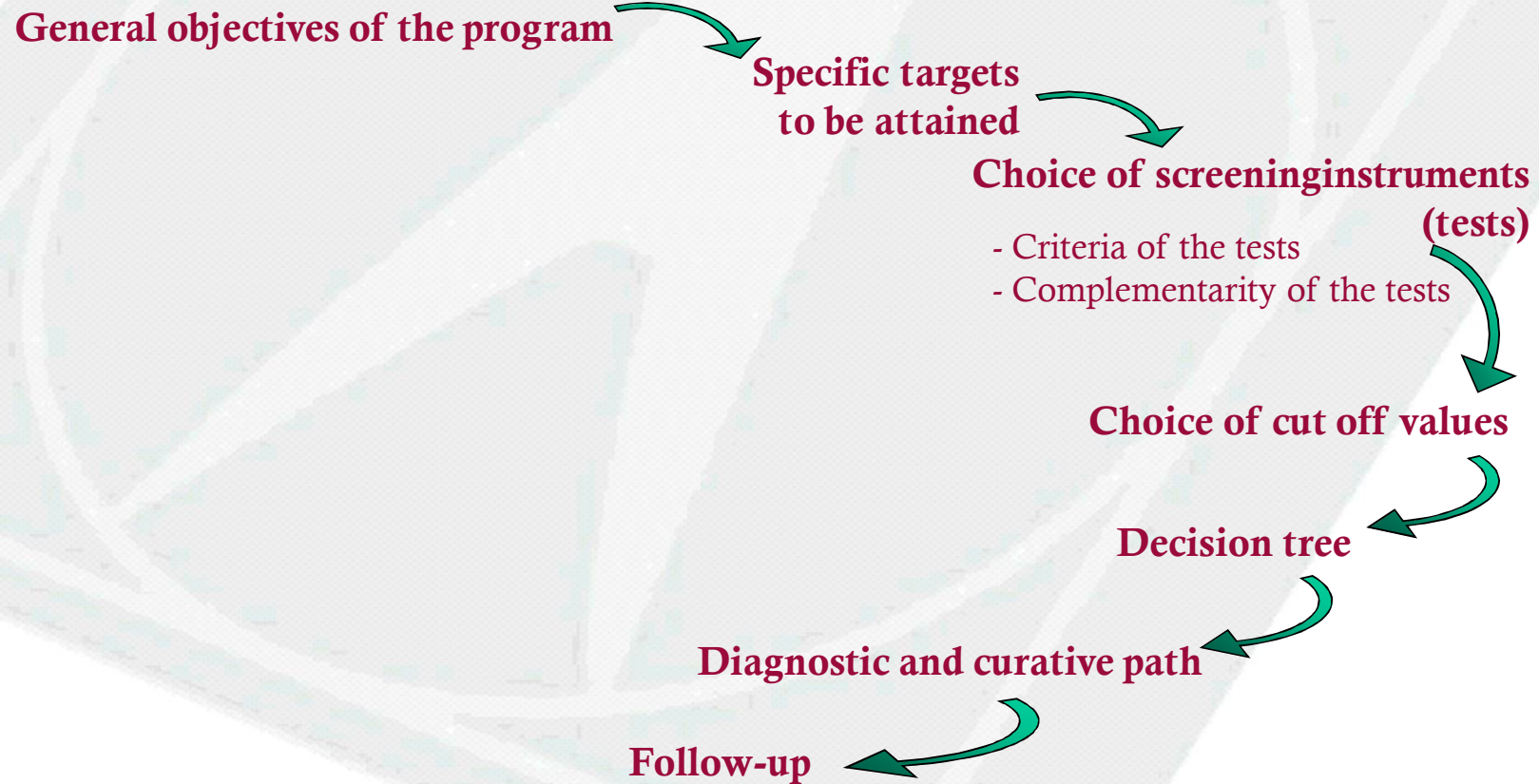
Choice of cut off values

Decision tree

Decision tree according to age



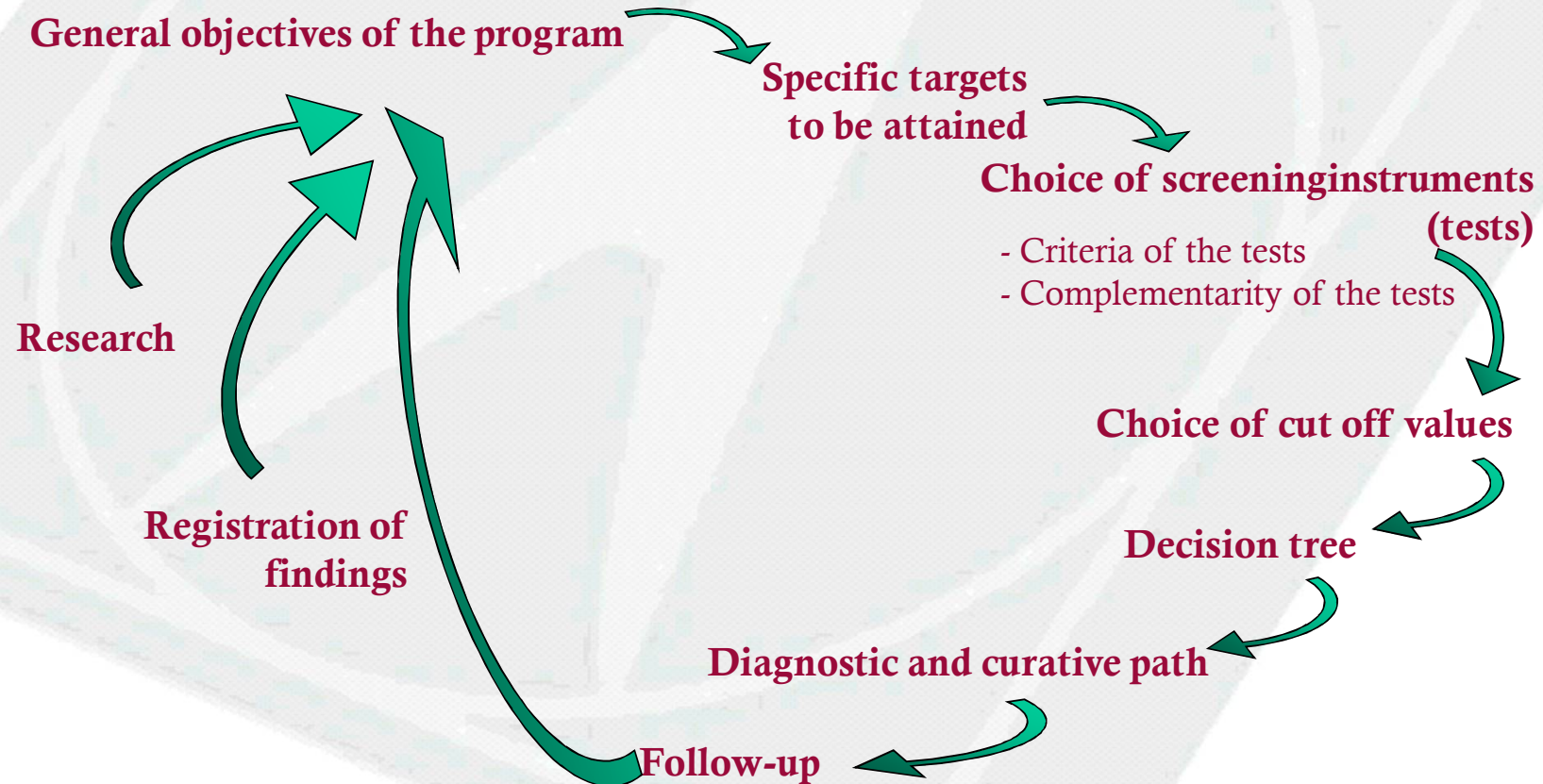
How to establish a screening program?



Flemish implementation strategy: a 5-step-plan

1. Publication & spreading of the guideline
2. Formal adoption of the guideline by centers
3. Training of professionals and organization of a supportive service for group-purchasing of test materials
4. Implementation of the recommendation in daily school health practice
5. Long term application of the guideline

How to establish a screening program?



Use of recommended test for visual acuity

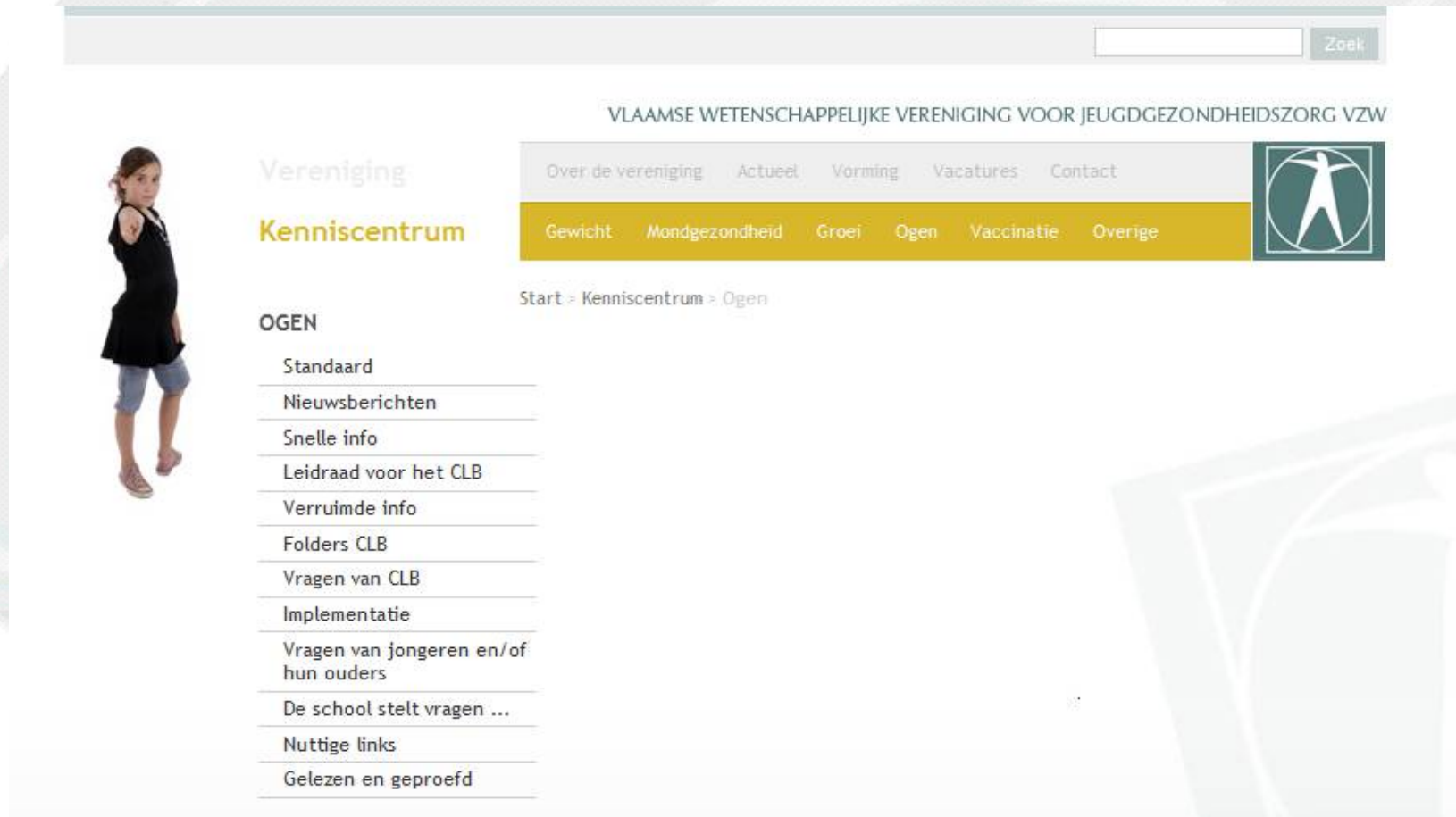
	NICO-data			LARS-data		
Maternal first (3y)	2005	2006	2007	2010-2011	2011-2012	2012-2013
1st choice = Kay	97.9%	98.1%	98.8%	98.8%	98.9%	99.0%
2nd choice = LogMAR	2.0%	1.8%	1.1%	1.1%	1.1%	0.9%
Use of recommended tests	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%
Maternal second (4y)	2005	2006	2007	2010-2011	2011-2012	2012-2013
1st choice = LogMAR	58.0%	54.2%	53.3%	79.8%	80.6%	83.2%
2nd choice = Kay	41.5%	45.5%	46.5%	20.0%	19.1%	16.5%
Use of recommended test	99.5%	99.7%	99.8%	99.8%	99.7%	99.7%

Rates of referral and unreliable test results

	NICO-data			LARS-data		
Maternal first (3y)	2005	2006	2007	2010-2011	2011-2012	2012-2013
Abnormal → referral	7.5%	6.7%	7.0%	7.8%	7.6%	7.6%
Unreliable → re-examination	2.5%	2.2%	2.5%	1.3%	1.1%	1.0%

Maternal second (4y)	2005	2006	2007	2010-2011	2011-2012	2012-2013
Abnormal → referral	8.6%	8.5%	8.2%	8.3%	8.2%	8.4%
Unreliable → re-examination	0.6%	0.5%	0.5%	0.4%	0.4%	0.3%

<http://vwvj.be>



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Children with known visual impairment

	NICO-data			LARS-data		
	2005	2006	2007	2010-2011	2011-2012	2012-2013
Maternal first (3y)	0.5%	0.9%	1.0%	2.8%	3.1%	3.1%
Maternal second (4y)	1.7%	2.8%	2.6%	6.4%	7.0%	7.0%

Details of the implementation plan:

Step 1

Publication & spreading of the guideline

1. Educational day
2. Whole text of guideline is available in each center
3. Announcement of the endorsement of the guideline by Authorities
4. Presentation of the guideline to ophthalmologists
5. Plastic flow-charts are available in each center

Details of the implementation plan: Step 2

Formal adoption of the guideline by centers

1. Fitting in a legal frame
2. Fitting into Quality Improvement Process
3. Designation of 1 local coordinator / center to support and monitoring the local implementation
4. Presentation of the guideline to different organizations (general practitioners, pediatricians, coordination of school health care systems)

Details of the implementation plan:

Step 3

Training of professionals & organization of a supportive service for group-purchasing of test materials

1. Instruction of 1 local coordinator / center
2. Program “Train the trainer”: Instruction of 1 duo-team “school doctor + nurse” / area
3. Instruction of fieldworkers by teams of trainers
4. Supportive service for group-purchasing of test materials

Details of the implementation plan:

Step 4

Implementation of the recommendation in daily school health practice

1. Organization of a central helpdesk for trainers and local coordinators
2. Local coordinators act as helpdesk for professionals from own center
3. Regular evaluation and updated instruction for local coordinators
4. Registration of performed activities & health indicators
5. Evaluation of guideline by means of registered data and via follow-up studies



Details of the implementation plan: Step 5

Long term application of the guideline

1. Evaluation of data at regional and Flemish level
2. Adjustment of the recommendations based on evaluation results