



# Lessons Learned from Berlin

**Oliver Schmoll**

Federal Environmental Agency

Department of Drinking- and Bathing-water Hygiene

*WHO Collaborating Centre for Research on Drinking Water Hygiene*

Ann Arbor, 4 May 2004

# *Major development in the drinking water sector*

Shift of emphasis away from over-reliance on end-product testing towards a preventative and risk-based quality management approach

# *Real phenomena*

## WHO Guidelines for Drinking-water Quality

- Community Plans

## Shift of emphasis in international legislation:

- Switzerland (Federal Ordinance, Article 11)
- Australia (Framework for the Management of Drinking Water Quality)
- New Zealand (Public Health Management Plans)
- France (Decree 2001-1220, § 1)
- Thailand (Safe Tap Water Programme)

## Initiatives of individual water suppliers (e.g. ... , Uganda)

## Parallel developments

**Evolution of risk-based approaches in drinking water**

# *What was Berlin about?*

- Communicating WHO's approach to a broad international audience
- Bringing together and sharing experience on current practice in drinking-water legislation, operation and surveillance that encompasses risk-based elements
- Discussion of their added value in relation to „traditional“ approaches
- Discussion of needs for successful implementation
- Expertise from 36 countries (i.e. from Europe, Asia, Africa, Australia)

# *Contents*

- A. Parallel developments in different countries
- B. Outstanding features and experiences reported
- C. Needs for successful implementation
- D. Further developments in Europe after Berlin

# *Switzerland: legislation*

Hygiene Ordinance (Article 11) from 1995 requires from all water suppliers to control microbiological hazards through the application of HACCP principles:

- Identification and assessment of potential health risks;
- Determination of points, operations or technical steps in the production process at which health risks can be eliminated or reduced (CCPs);
- Determination of critical limits and tolerance levels (CCP conditions);
- Establishment of a monitoring system that monitors compliance with CCP conditions;
- Determination of corrective actions if monitoring detects non-compliance with CCP conditions;
- Determination of procedures for checking functioning of the control system established (verification);
- Documentation of measures according to letters a-f.

# *Switzerland: technical guidance*

- *Swiss Gas and Water Industry Association* took strong leadership in branch adaptation:
  - Break-down of formal HACCP requirements into understandable water utilities' language
  - Tailored to needs of water utilities
- Development of simple and „recipe-like“ guidance for small groundwater supplies (incl. easy and step-by-step explanation of principles, checklists, blank forms)
- Development of a *Branch Quality Management* system (BQM) that includes other business processes
- *How to do?* training courses for utility staff

# Switzerland: surveillance

Safety level	Move from over-reliance on compliance checking towards simple audit-based approach	Self-check system	Water quality	Processes and activities	Buildings, equipment and devices
4	Not guaranteed	Self-check system: Has a hazard analysis been carried out and were control points and measures identified and documented?			
3	Compromised	Analysis of water quality			
2	Reduced	Processes and activities: Evaluation of effectiveness of control measures			
1	Guaranteed				

- Sanitary inspection of buildings, equipment and devices
- Politicians: very short and understandable statements
- Surveillance authorities: planning instrument
- Water utilities: independent external investigation
- Consumers: understandable tool for system evaluation and for maintaining/building confidence

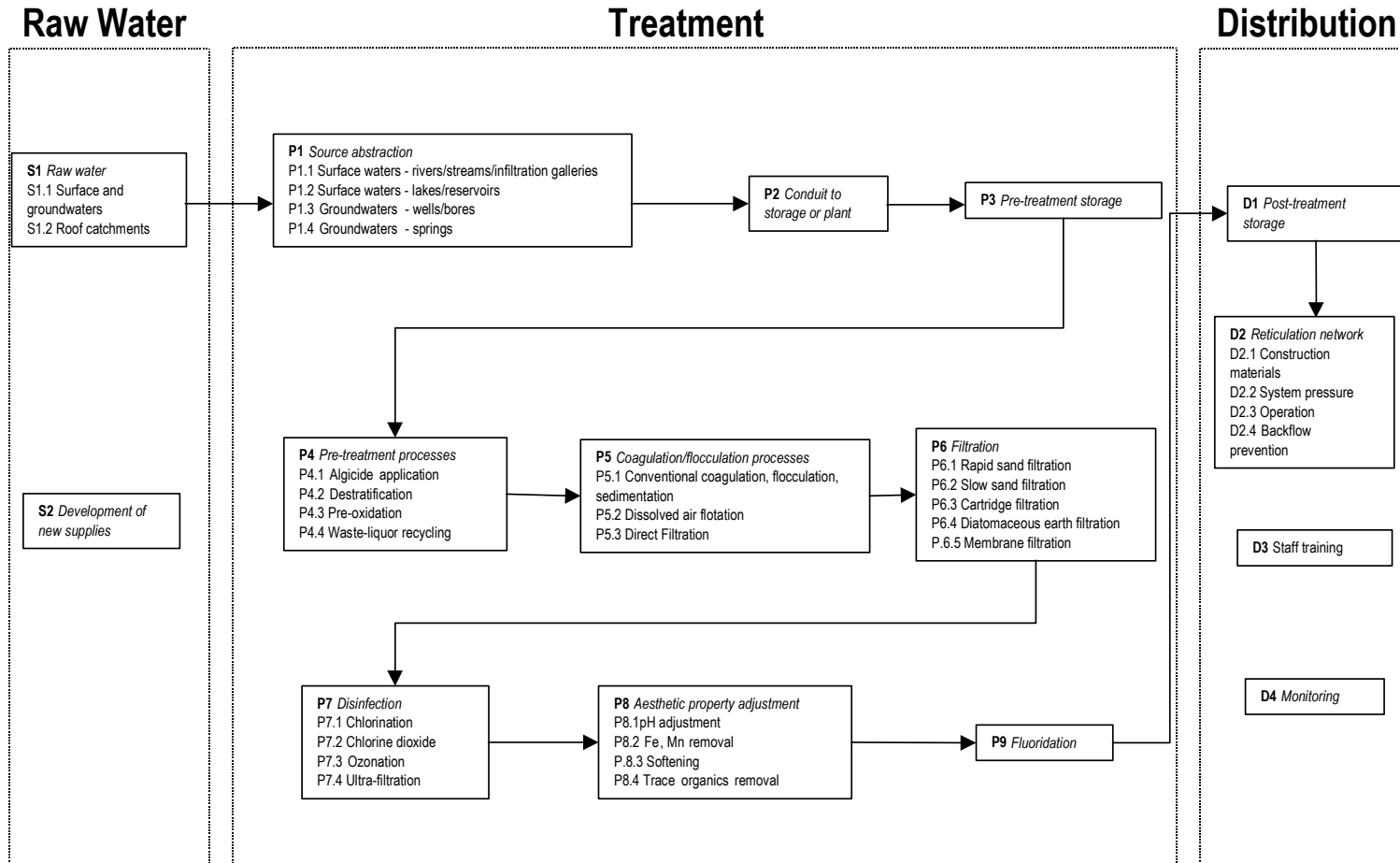
# *Legislation in France*

- French law requires independent surveillance of water quality through local health agencies
- Part of the water supplier's monitoring data can become integral part of the regulatory surveillance (§ 18) and thus reduces regulatory monitoring expenditures:
  - Regular performance of risk analysis
  - Identification of critical control points together with effective control measures
  - Adherence to operating instructions
  - Appropriate training of staff
  - Analyses in accredited laboratories

# *Legislation in New Zealand*

- Legal requirements: compliance with DWSNZ plus preparation and implementation of *Public Health Risk Management Plans*
- Development of “tools” that can be readily used by small (and big) supplies: as easy as possible, simple structures, simple language (no high level guidance):
  - *How to prepare and develop public health risk management plans for drinking-water supplies?*
  - Set of 39 PHRMP *Guides* that provide risk information for each supply element (modular approach)

# Legislation in New Zealand



# *Legislation in New Zealand*



## *Risk information table:*

- possible events & hazards that might enter the supply
- type of risk associated with each event
- possible consequences of the event
- preventive measures that can be taken
- *checks* that can be taken to determine whether the preventive measures are working
- corrective actions that need to be taken if an event occurs

[www.moh.govt.nz/water](http://www.moh.govt.nz/water)



## *Contingency Plans*



## *PHRMP Performance Assessment*

# *Australia*

David Cunliffe

Daniel Deere

Annette Davison

David Smith

# *Contents*

- A. Developments in different countries
- B. Outstanding features and experiences reported
- C. Needs for successful implementation
- D. Further developments in Europe after Berlin

# *Outstanding features*

- Proactive approach that presents a “push towards innovation“ as it triggers a process of continuous assessment and improvement
- Basic principles applicable to all supplies irrespective of their size, source waters and technologies employed
- High value for small(er) supplies that in many countries pose the biggest risks to consumers
- Instrument for proving that state of the art principles are followed and that the barriers are intact
- Approach stimulates multistakeholder co-operation

# *Experiences: water suppliers*

- Nothing really new but complementary to current practice in many supply settings
- Formalises and organises existing procedures: easy to integrate into existing quality management systems (e.g. ISO 9001:2000)
- Provides a tool for basic assessment of needs and helps to promote good asset management ...
- ... particularly for smaller supplies where expertise is often thinly-spread and which require outside assistance

## *Experiences: water suppliers (cont.)*

- Targets limited resources and attention toward critical issues of drinking water quality and helps to focus supplier's monitoring
- Documents due diligence and thus better protects against allegations of negligence
- Covers your back in decision making: improves system understanding and reduces uncertainty
- Increases transparency to consumers and surveillance bodies: better reputation
- Provides platform for managing existing knowledge

# *Experiences: surveillance agencies*

- Redesign of surveillance programmes towards audit based approaches
- Chance for flexible and system tailored surveillance
- Greater confidence in the continuous management of drinking water quality, particularly for the small, easily “overlooked” supplies
- Improved understanding of operational aspects of drinking water supply and what can go wrong
- Greater cooperation and less adversarial relationship

# *Contents*

- A. Developments in different countries
- B. Outstanding features and experiences reported
- C. Needs for successful implementation
- D. Further developments in Europe after Berlin

# *Needs identified*

- Supportive legal and institutional environment
- Adequate preparatory phase and careful sector preparation:
  - Stimulation and moderation of national and local discussions for evaluation of benefits and drawbacks
  - Running of pilots in different supply settings in the national context
  - Development of in-depth guidance materials
  - Capacity building and training programmes for water suppliers' and health/surveillance agencies' staff
  - Promotion of pioneers and champions

## *Needs identified (cont.)*

- Support for small supplies as the range of expertise and resources is not necessarily covered within single supplies
  - Development of „recipe-like“ guidance (i.e. guided model or technology generic WSPs, checklists, etc.)
- Harmonisation of terminology (What to call it?)
- Good communication and usage of understandable terminology:
  - Boosting consumer confidence into the approach
  - Not losing support of staff in water utilities

# *Contents*



- A. Developments in different countries
- B. Outstanding features and experiences reported
- C. Needs for successful implementation
- D. Further developments in Europe after Berlin

# *EU Drinking Water Seminar*

- EU *Drinking Water Directive* (98/83/EC) lays down at Community level the essential quality standards and minimum requirements for all 25 Member States
- DWD foresees a periodic review of Annexes to reflect on scientific and technical progress
- *Drinking Water Seminar* in October 2003:
  - 180 invited experts from EU MS and relevant interest groups
- Preparation of position papers:
  - Microbiological parameters, chemical parameters, materials and substances in contact with drinking water, endocrine disrupting compounds
  - Risk based approaches for drinking water management

# *Position paper conclusions*

- Risk based approach is recommended for consideration within the DWD revision:
  - Limitations of polarisation on end-product testing
  - Developments within other arenas of consumer safety
  - Approach taken by WHO *Guidelines*
  - Positive experiences from different countries
- Risk based approach is judged as to be of large added value for safeguarding the supply of safe drinking water that has the trust of consumers
- Move is seen as a natural, timely and logical next step in the evolution of the DWD

## *Position paper conclusions (cont.)*

- Core principles outlined in the WHO Framework are a sound basis for the revision of the DWD: no specific circumstances in the EU that justify major deviations
- End-product test for compliance with water quality standards should reflect the major component:
  - Needs to become integrated with a risk-based approach
  - Complemented by process control and monitoring
  - System tailored: targeted to the specific critical water quality issues
- Need for preparatory phase and pilot projects to support implementation in the Member States

**Broad support of the overall approach and core principles**

# *German pilot project*

- What is the real difference to current practice?
- Isn't it only „*semantic brainwash*“ or is there something in for me?
- Wouldn't the DVGW-system of technical rules and specifications already cover most of the WSP requirements?
- What would be the chances for more flexible and situation specific surveillance and monitoring practices?

## *German pilot project (cont.)*

- Analysis of set of technical rules and specifications with regard to already existing WSP elements: development of proposals for their conceptional integration
- Extensive test trials with selected water suppliers of different sizes and source waters together with local health agencies (incl. training courses)
- Expert consultations with local and regional health and surveillance bodies