



# Tele-triage: a comparison of programs in Scotland and Ontario

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# Delivery of Health Services in Remote and Rural Areas

...evaluating innovation including changes in local or national policy, contractual arrangements, and clinical practice...

...understanding what constitutes effective service delivery in different contexts...





## Cross-cutting rural issues

Accessibility of services  
Quality and appropriateness of care  
Variation and standardisation  
Workforce  
Substitution and integration  
Technology



## Scotland

- Population 5m (1/10<sup>th</sup> England) ; relative poor health, deprivation, rurality, and ageing population the distinctive characteristics
- NHS service: tax funded free at point of access. Service is under pressure and undergoing re-design
- GPs with personal lists gatekeeper to secondary care except for accident and emergency or phone 999 for an ambulance



## NHS 24

- Nurse led telephone advice service similar in concept to NHS Direct, but with important differences in structure. Cost £50m per year
- Introduced several years after NHS Direct in England
- First point of contact for OOH care across almost all Scotland
- Study concentrates on first site in Grampian, now extended to all Scotland



## The Evaluation

Evaluation of the introduction of NHS 24 in Scotland

Funded by SEHD 2001-2005

Team from Centre for Rural Health (University of Aberdeen), and Universities of Glasgow, Sheffield, Glamorgan.



## Evaluating Change

1. How were services delivered previously?
2. How did that change?
3. What do patients think?
4. What do health professionals think?
5. How effective is the service?
6. What have we learnt?
7. What next?



## How were services delivered previously?

- OOH service: Variation in organisational structure, patient experience, cost
- Professionally led innovation
- Difference between urban and rural Scotland



## How did that change?

- NHS 24: accessible, high quality, consistent, sensitive service for all Scotland. Strong policy push from Scottish Executive.
- Learning from NHS Direct: special health board; integration
- Technology driven solution



## What did patients think?

- Overall, patient satisfaction high pre NHS 24; but there was a marginal improvement
- Significant improvement in interaction with the patient.
- Patients said NHS 24 was better than the previous service




## Patient satisfaction timings and numbers

|                     | North<br>Pre NHS 24 | North<br>Post NHS<br>24 | West<br>Pre NHS 24 | West<br>Post NHS<br>24 |
|---------------------|---------------------|-------------------------|--------------------|------------------------|
| Survey<br>conducted | April 2002          | Sept 2002               | Sept 2002          | April 2003             |
| Valid<br>responses  | 414                 | 325                     | 269                | 304                    |
| Response<br>Rate    | 64                  | 57                      | 48                 | 50                     |





| % very<br>satisfied | North Pre<br>NHS 24 | North<br>Post NHS<br>24 | West<br>Pre NHS<br>24 | West<br>Post<br>NHS 24 |
|---------------------|---------------------|-------------------------|-----------------------|------------------------|
| Overall             | 60%                 | 60%                     | 58%                   | 65%                    |




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| % very satisfied                                     | North<br>Pre NHS<br>24 | North<br>Post NHS<br>24 | West<br>Pre NHS<br>24 | West<br>Post<br>NHS 24 |
|--|------------------------|-------------------------|-----------------------|------------------------|
| The way<br>the doctor<br>or nurse<br>spoke to<br>you | 58%                    | 72%                     | 59%                   | 72%                    |

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| NHS24 is... | North | West |
|-------------|-------|------|
| Better      | 38    | 53   |
| Same        | 41    | 25   |
| Worse       | 12    | 8    |
| Not sure    | 9     | 14   |





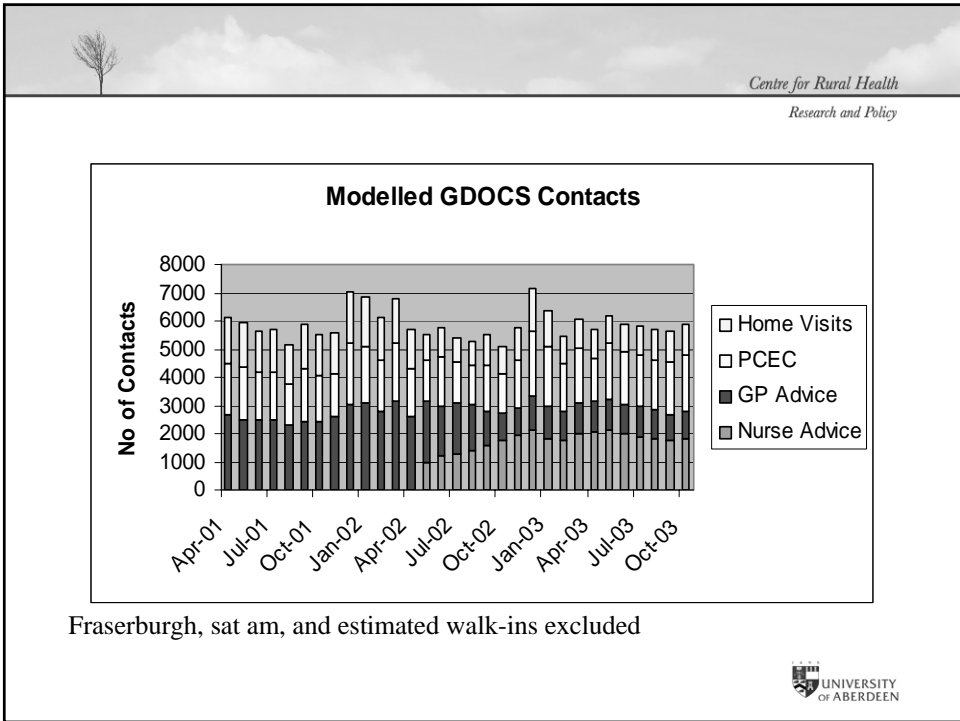
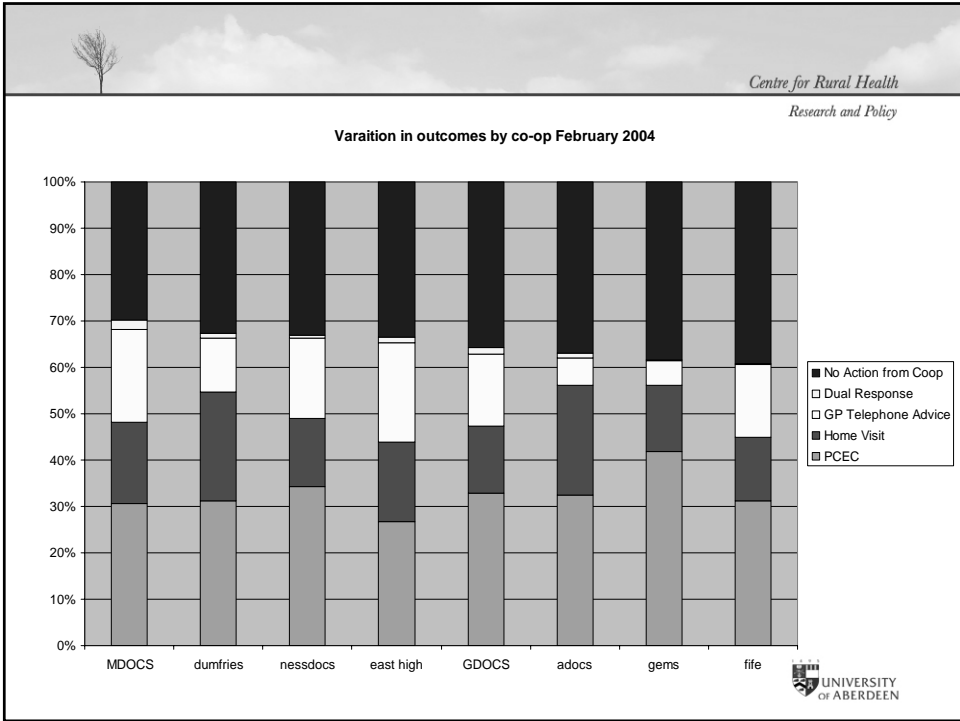
## What did professionals think?

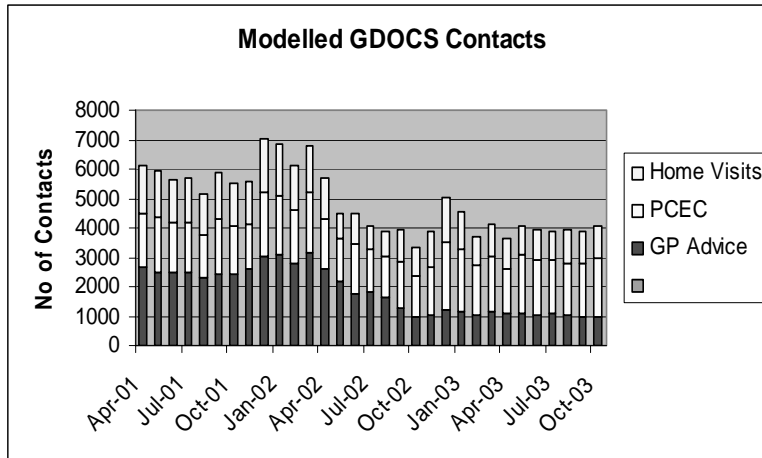
- Early dissatisfaction in Grampian: inappropriate triage and prioritisation, increased GP workload, IT.
- In response, the Quality Improvement Plan
- Other partners had different views; different enablers and obstacles to integration
- Next stage of evaluation to investigate this.



## How effective is the service?

- NHS 24 deal with a third of calls without need for action by other services
- No impact on A&E or ambulance service to date
- Underlying demand unchanged in Grampian area
- Impacting on total numbers seen in OOH co-op





## What have we learnt?

- A new and challenging approach
- Integration with primary care has been more difficult than predicted
- Size and complexity of the task: premature to judge



## What next?

- New GMS contract a new opportunity and a new challenge



## Remote and rural working....



# Teletriage: the Service in Northern Ontario

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October 19, 2004



## Direct Health/TéléSanté

- A teletriage pilot project
- Based in North Bay, covered northern Ontario (705, 807 area-codes)
- Run by Clinidata Corporation
- June 1999 to March 2001
- Continued as Telehealth Ontario - a province-wide telecare service

## **Telephone health information and triage services**

- 24 hours a day / 7 days a week
- Provided by registered nurses
- Services provided in English and French, now multilingual
- RNs use clinical guidelines and nursing judgment to advise patient on most appropriate level of care

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## **Objectives of pilot project:**

- Reduce demand on existing health care resources (e.g., EDs, walk-in clinics)
- Promote patient independence and confidence in health decision-making

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## Evaluation components

1. Describe calls and callers
2. Identify awareness and satisfaction
3. Assess effect on informal and self-care
4. Assess effect on medical service use
5. Assess clinical appropriateness of information/advice given
6. Assess economic implications
7. Document CQI processes
8. Discuss policy implications

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## Data and Methodologies (1 of 2)

- Data from Clinidata Corporation (e.g., statistics on calls)
- Surveys of callers, non-callers in northern Ontario, and people in southern Ontario
- OHIP data from ICES to examine utilization and impact

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## Data and Methodologies (2 of 2)

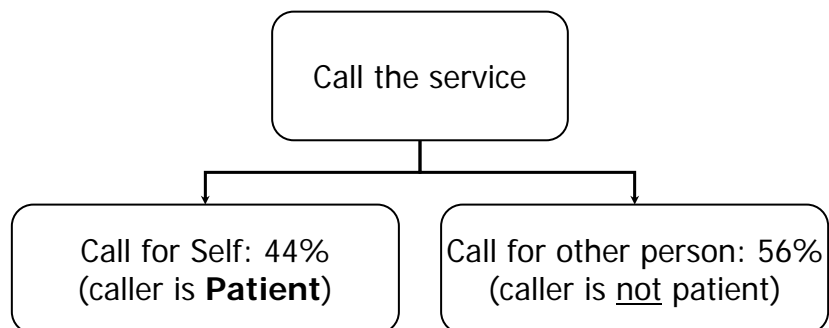
- "Chart audit" - review of taped calls
- CQI self-assessment
  
- RCT of teletriage service
  - Conducted in 2002 after service had been rolled-out across the province

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## Callers and Patients



Source: CRaNHR survey, Clinidata

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## Gender and Age

- 63% of patients were female (50% in N. Ontario)
- 89% of callers were female
  
- 50% of callers 17-34 years (25% N. Ont.)
- 46-49% of patients 0-16 years (24% N. Ont.)

Source: CRaNHR survey, Clinidata, Statistics Canada

## Awareness and Satisfaction

- 44% of non-callers had heard of service
  
- Over 93% of callers had ranked the service as “Very Good” or “Excellent” for:
  - Quality of the service
  - Attention of the nurse to the caller’s concern
  - Information
  - Instructions or advice

Source: CRaNHR survey

## Effect on Informal/Self Care

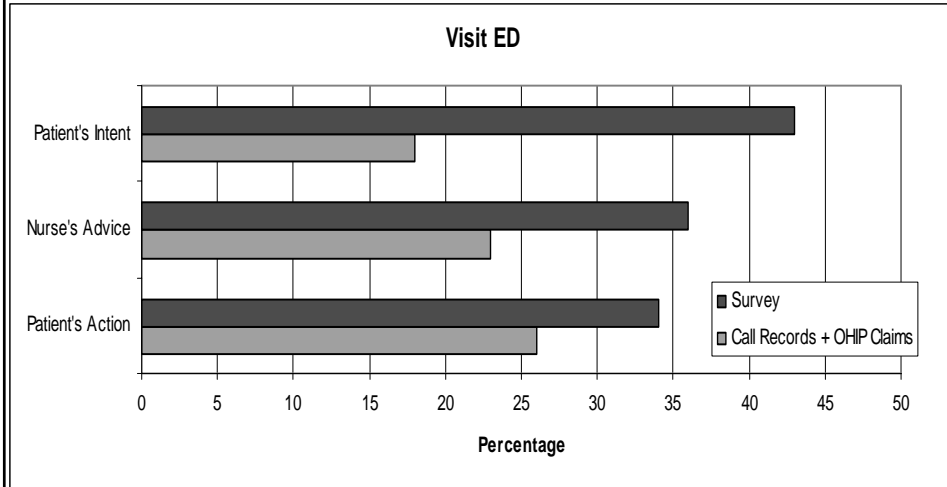
- 25% said that the kind and amount of informal care had increased, the rest reported no change.
- 50% reported that their confidence in providing informal care had increased, while the rest reported no change.

Source: CRaNHR survey

## Medical Service Use

- Focus on visits to:
  - Emergency departments
  - Physician's offices & after-hour/walk-in clinics

# ED visits

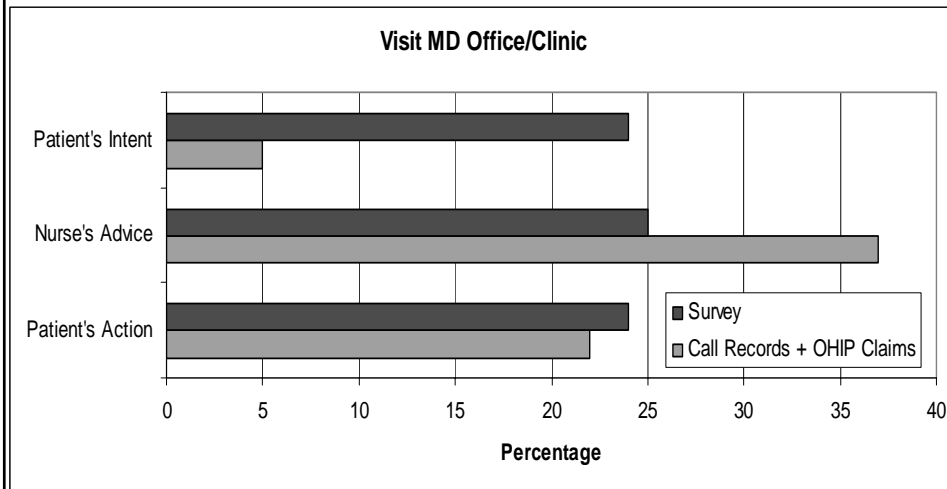


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# MD visits

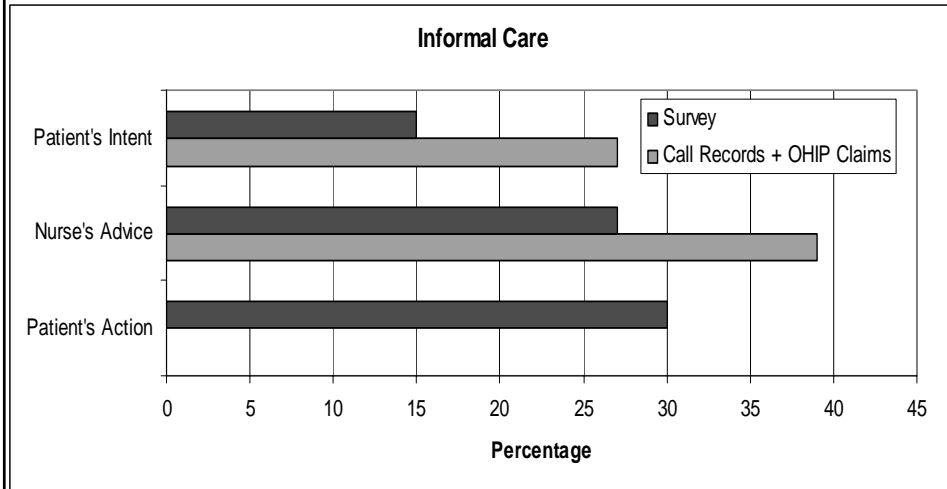


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# Informal Care

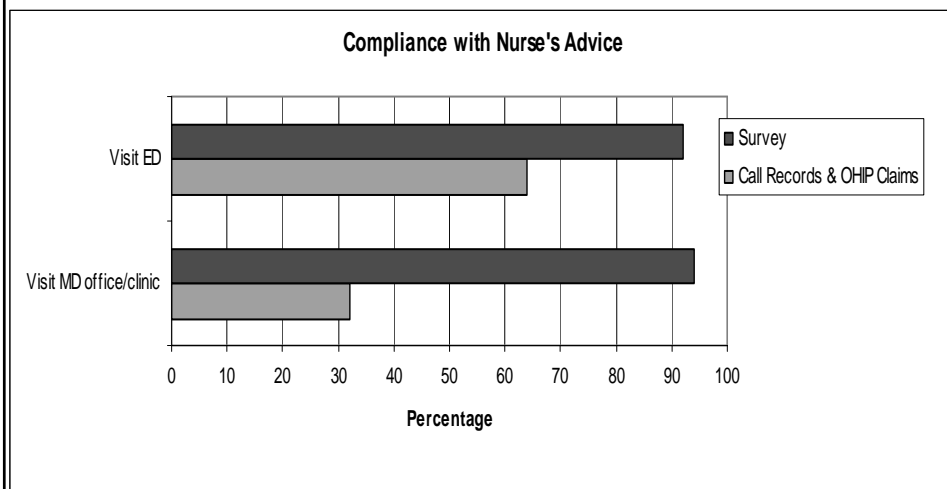


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# Compliance



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## Broad Trends in Medical Service Use: Methods

| <i>ED &amp; MD visits in...</i> | Before Pilot | During Start-up | Plateau Phase |
|---------------------------------|--------------|-----------------|---------------|
| North Bay                       |              |                 |               |
| Brantford, Cambridge, Guelph    |              |                 |               |

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## Broad Trends in Medical Service Use: Results (1 of 2)

- Net decrease in North Bay and Comparison Communities
- Evidence for additional decrease in ED and MD visits for:
  - Pneumonia/Flu
  - Upper/Lower Respiratory Tract Infections, Otitis, Rhinitis
  - Other Respiratory Conditions
  - Central/Peripheral Nervous System

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## Broad Trends in Medical Service Use: Results (2 of 2)

- Increase in visits for:
  - Strains (excluding back) & Cuts [ED only]
  - Tension Headache [ED only]
  - Hemolytic Disorders [MD only]
  - Gastrointestinal Disorders [MD only]

Source: Clinidata Call records matched to OHIP claims

## Caveats

- Consenting callers (Survey, Call records/OHIP claims)
  - not random and not representative of all callers → selection bias
- Survey
  - Social desirability & recall biases
- Call records/OHIP claims
  - Systematic bias

## Randomized Controlled Trial

- Collaboration with Group Health Centre, Sault Ste. Marie & Clinidata
- 1057 patients
- Stratified into 3 patient groups
- Randomized into Care-as-Usual or Teletriage groups
- 14 months—when service was province-wide (additional details in two presentations posted on [www.cranhr.ca](http://www.cranhr.ca))

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## RCT-main findings

- Mean number of calls in Teletriage Group was significantly higher than in the Care-as-Usual Group (50% higher)
- No statistically significant difference in mean visit rate to MD office/clinic:
  - Common cold
  - Muscle/Stomach aches & pains
  - Other respiratory symptoms
- Subgroup analyses
  - Common cold → 39% lower for frequent visitors

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## Appropriateness of Advice

- 73 calls (convenience sample)
- Telenurse's advice was judged "appropriate" in 83% of the calls
- Another 8% had mitigating circumstances that justified more/less cautious advice
- Nurses were 3 times as likely to err on the side of caution

Source: Independent audit organized by CRaNHR  
Telemedicine Journal and e-Health, Spring 2004 10(1):53-60.

## Conclusions (1 of 2)

- Some evidence that caller's/patient's ability & confidence in conducting informal/self-care has improved
- No evidence for change in total number of visits to ED or to MD office/clinic
- Evidence from survey, OHIP claims and RCT that visits associated with cold/flu symptoms has decreased

## Conclusions (2 of 2)

- Not everyone is using the service
  - Young, urban females with children are primary users
- Survey respondents were highly satisfied with service

## Some Comparisons (1 of 2)

| <b>Scotland</b>                         | <b>N. Ontario</b>   |
|---|---------------------|
| Nurse teletriage<br>Centralized service |                     |
| Directs patients to services            |                     |
| Directs services to patients            |                     |
| Integrated with other services          | Stand alone service |

## Some Comparisons (2 of 2)

| Scotland                               | N. Ontario                     |
|--|--------------------------------|
| Patients/Callers highly satisfied      |                                |
| 30-40% are directed to self-care       |                                |
| No impact on total visits to A&E or ED |                                |
| Impact on OOH co-op                    | Impact on visits for colds/flu |

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## Acknowledgements

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For more information... [www.cranhr.ca](http://www.cranhr.ca)  
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