Future Hospital Journal 2015 Vol 2, No 2: 142–6

Clinical service integration: a stocktake of the Australian experience

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ABSTRACT

Australia, in common with most developed countries, needs to reorientate its health system to meet the needs of the future. There is general acceptance that the current approach geared towards acute episodic care is no longer fit for purpose. This article explores the concept of integration in healthcare in Australia and specifically describes the role of clinicians over the last five years in brokering and supporting change in the way services are delivered.

KEYWORDS: Integrated care, clinician engagement, clinical integration, electronic health records, integration policy

Common global headaches – where is Australia tracking?

Australia's life expectancy at birth continues to be among the highest in the world. The combined male and female figure of 82.0 years, while lagging behind that of Japan and Hong Kong, is superior to Canada, New Zealand, the UK and the USA.[1] Australia spent $140.2 billion on health in 2011–2012, which accounted for 9.5% of gross domestic product (GDP) and which, like other Organisation for Economic Cooperation and Development (OECD) countries, has increased over the past decade at a faster rate than growth in GDP, rising from 6.8% in 1986–1987.[2] However, in 2009 this proportion was much less than that of the USA (17.4%), slightly less than the UK (9.8%), New Zealand (10.3%) and Canada (11.4%), and close to the OECD median (9.6%).[3]

Despite these excellent headline figures, there are significant inequalities in health outcomes among different parts of Australian society. Specifically, the health of the Aboriginal and Torres Strait Islander populations (ATSI) and that of rural communities and those with appreciable socioeconomic disadvantage is not nearly as commendable[2] with recent data suggesting differences in chronic disease incidence and outcome differentials in life expectancy and infant mortality. Federal and non-government initiatives aimed at closing this gap have started to address the divergence, although differences appear to be related not only to ATSI status but also to socioeconomic determinants and rurality, with which there are additive effects.[4,5]

A position paper from the WHO on integrated care describes some of the pressures experienced by many developed countries, and Australia is no different.[6] The significant ageing of the population, together with improved health outcomes leading to the conversion of those who would previously have died, into individuals with chronic disease, and an increasing focus on patients, their expectations and their rights to receive care, have forced a review of the way forward. The advent of new technologies, computerised information systems and budgetary concerns have put pressure on health service models to consider integrating services in the quest of greater efficiency, access, cost effectiveness and quality (Fig 1).

The trend towards increasing specialisation of the healthcare workforce has also been a feature of the recent past in Australia, where there has been a significant increase in the numbers and percentage of specialists compared with primary care physicians.[7] In addition the workforce continues to become increasingly sub-specialised, although some have questioned the utility of the sub-specialist model in centres where there is a low critical mass.[8] The rural generalist programme has been given considerable support and the development of this role is being debated by many national bodies.[9]

Clinical variations in care have been highlighted through better monitoring and data collection and could result in increasing accountability to consumers and healthcare funders. After participation in an OECD benchmarking activity, each of the state health ministries in Australia identified key conditions and procedures and asked clinicians to evaluate documented variations in care.[10] This has been brokered by the Australian Commission on Safety and Quality, which is working nationally to raise awareness and develop tools and support.

While the above features of health delivery are shared with other developed countries, Australia has unique differences, including a complex system of managing health funding, which impact on its capacity to achieve integrated care. Broadly speaking, the division of responsibilities for health policy has largely been one that gives the federal jurisdiction responsibility for national policy development, but devolves responsibility for administration, intervention and implementation to states and territories. In terms of direct funding responsibilities, federal structures have been responsible for primary care and community and aged care, while acute hospital services are funded by states. There is obvious overlap and 30% of health

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Fig 1. Driving forces for healthcare reform. Reproduced with permission.[6]

costs are contributed by patients in addition to funding flowing from the taxation base.[2] Clinicians work in either fee-for-service models with co-payments from patients or are salaried or paid for work in acute hospitals.

Australia has a similar number of physicians per thousand people as other developed countries.[11] In the last 10 years there has been a doubling of medical school places and large increases in numbers training to be allied health professionals, consequent upon a relaxation on funding caps to universities providing health courses.[12,13] Changes in scopes of practice to permit the use of assistants, the use of Medicare funding for non-doctors and organisational transformation have all been foreshadowed by projections relating to future workforce needs.[14]

Finally, the policy environment in which health professionals work has not been predictable. In 2009, Australia established the National Health and Hospitals Reform Commission to formulate a blueprint for healthcare going forward.[15] It suggested that one level of government should be responsible for health system funding and suggested a strengthening of the primary care system and 'connection and integration for health and aged care services over people's lives'.[15] Outcomes included a national healthcare agreement (2012) and a national primary care strategic framework (2013), establishing a network of 61 primary healthcare organisations. The plan included common governance membership, with state-run local hospital networks and a move towards integrated governance.[16] Considerable investment was proposed to develop a patient controlled electronic health record (PCEHR) and to facilitate consumer engagement. With a change of government in 2013, a number of these initiatives have been reviewed. The primary healthcare organisations are being reorganised, with the aim that large networks capable of commissioning will be in place in 2015–2016. The PCEHR is being revised with a new rollout strategy planned.[17] In addition, the government has heralded the greater involvement of the private sector in the delivery of primary and secondary care.[18] This may herald a move to more integrated models of care for certain targeted groups within the population, such as those who hold private insurance.

Definitional issues around integration

Australia, like other jurisdictions, employs the term integration loosely, such that it means different things to different users. Most commonly, it is used to describe harmonisation within services or within one sector, for example within a hospital. This can be termed horizontal integration. Alternatively, it can be used to describe collaboration between different health sectors, such as aged care and primary care or primary care and acute care. This could be considered as vertical integration. For others it can mean collaboration between health and non-health sectors, even extending to key determinants such as housing and education.[19,20] Additionally integration can be used to describe integration at a system level or the coordination of services or programmes for a particular target group within a population.

Integrated care delivery can be an organisational structure that is brought together with an economic imperative, such as a financing group, or may be a way of organising care delivery by coordinating different activities around a common clinical outcome.[21] Australia has commenced integrated care delivery by trying to organise care for a number of key population groups. Aboriginal medical services for example are organised around multidisciplinary primary healthcare.[22] Rural providers are often able to demonstrate high levels of integration (with themselves), where both acute and primary care are provided by the same professionals in a discrete, often isolated location. The most appropriate definition for Australian clinicians may be that 'integration is concerned with the processes of bringing organisations and professionals together, with the aim of improving outcomes for patients and service users through the delivery of integrated care'.[23] This could also be seen as collaborative practice, no doubt a pre-condition for integrating care.[24]

Although there are different definitions, the success of integration can be determined by measuring the process, outcomes, financial cost, patient experience or all of these factors. In Australia measurement has been focused on the process of integration. Much of the current effort has looked at measuring collaboration and partnership with tools like balanced scorecards which seek to measure the implementation of the integration process.[19,25]

One way to consider whether integration and integrated care is being enabled is to consider the status of known 'enablers' within the health system. Accountability and shared decision making, clinician and consumer leadership and the availability of shared information are obvious system issues. The availability of aligned incentives provides the fuel for the system to consider reorganisation. Reviewing these parameters developed by McKinsey[26] will assist in outlining a clinician perspective of the current integrated care agenda in Australia in 2015.

Accountability and shared decision making

There has been an increase in the amount of publicly available data concerning variations in care and outcomes,

and the availability and costs of services.[4,27,28] This provides at least some of the information needed to support greater accountability of systems and has certainly revealed significant care variation between facilities, networks and states.

The capacity of this information to assist the public to understand the performance of their health services is not yet apparent, but its granularity at the hospital and community levels provides clinicians with a new opportunity to evaluate and investigate their own practice.[29] The focus on clinical variation has also been gaining momentum,[10] but clinician engagement and ownership may be endangered if clinical indicators are utilised as performance measures without confidence in the process or if the resources required to improve patient care are absent.

Medicare Locals (primary healthcare organisations) in their short gestation have supported a number of local initiatives around shared governance, positions and indicators with their respective acute hospital networks. The development of the collaborative framework tool has supported this.[30] However, the lack of integrated governance that can cross sectors, in particular in primary care governance, means that shared decision making on a system-wide scale is not yet a reality.[16,31,32]

Clinician leadership

Clinician leadership in Australia has been most evident within hospital and hospital-based clinical networks. While clinicians have a frequent helpful overlap of roles and responsibilities between federal and state-funded healthcare services and between public and private healthcare providers, these tend to depend upon individuals and be localised. Hospital networks have focused on internal service provision and state-funded services. Clinical senates have been supported in most states with slow but steady progress; their terms of reference encompass advice to government, the promise of two-way consultations, leadership development and the promotion of trust and partnership. There has been an expectation that clinicians will take a whole-of-system perspective, partner consumers and managers, and be multidisciplinary in nature.[33] These hospital-based senates have recognised the need to articulate with primary care clinicians but to date overt linkages are few. This relates in part to the lack of funding and leadership support to those working in primary care. Less attention has been given to the engagement of health professionals in day-to-day activity and across organisational boundaries. Yet it is the inspiration of these clinicians that will support transformational change for the patient.[34]

Commonwealth activities have included a National Lead Clinician's Group, which supported the development of clinical standards and guidelines, provided advice to government, offer a focal point for engagement of expert clinicians, and offered a cross-sector forum for collaboration.[30]

Information sharing: electronic records

The utility and efficiency of a shared electronic medical record system is well described, at least in terms of medication management and rational use of laboratory tests. In addition, the need for an accessible and complete record is essential if care and its delivery are to be collaborative and/or integrated.[35] With a move away from the traditional general practitioner to a team-based approach, the need for continuous accurate contemporaneous communication between providers remains paramount. Australia remains well placed, with 92% of primary care practitioners using electronic systems.[36] Interestingly, community specialists and allied health practitioners have much lower rates of computerisation.

The PCEHR project is now 4 years old and has been in receipt of in excess of $500 million in funding.[37] However, the capacity of the electronic record to streamline and enhance care has been demonstrated in the Northern Territory, where such a system has been in place for over 10 years. It has been particularly embraced by clinicians in remote locations where patients must be repatriated long distances for specialist care and where the population mobility is high.[38]

Electronic communications, such as secure messaging, have been useful and have been seen as preconditions to PCEHR compliance and utility. Currently the number of consumers subscribing is in excess of 1 million, although only 0.6% of these have a shared health summary available. Although nearly all states now have the capacity to download discharge summaries, the PCEHR programme and its capacity to support integrated care is paused. The possibility of linking upload to PCEHR with chronic disease management plans in primary care or hospital avoidance programmes suggest possible ways of increasing uptake and clinician support. However, barriers remain in rural and remote areas where broadband speeds and affordable internet solutions remain patchy.[39] This is of course in addition to clinicians' ambivalence and skill issues.

Consumer engagement

The role of consumers in determining the nature of healthcare in Australia has been enhanced over the last decade, with patients being seen increasingly as consumers and partners and the role of patient experience being explored using localised policies and tools. First, evidence from research conducted in Australia suggests that the experience of individual engagement in decision making, with quality health information, supportive clinician interaction and/or access to self-management tools, improves outcomes,[40] specifically in cancer care.[41] While promising, translation of these pilot projects into engaging consumers in the daily provision of healthcare is not yet the norm, and even ensuring that concepts like 'goals of care' have been canvassed with patients is a work in progress.[42]

Second, consumer engagement can be seen contributing to improvements in health service responsiveness. There are now studies illustrating linkages between patient-centred care (through strategies including consumer engagement) and decreased readmission rates and healthcare acquired infections; improved delivery of preventive care services; better functional status; reduced hospital stays and enhanced compliance with treatment regimens.[43]

Increasingly, the language of patient-centred care is used with the recognition that it can be considered as a 'marker of high quality care'.[44] Primary care models, such as aboriginal community-controlled health services and the 'Australianised' version of the patient-centred medical home, are gaining prominence. Measuring and evaluating patients' experience of their care has to date mostly used the Picker framework,[45] whose principles of patient-centred care as distinct from patient satisfaction have been utilised in numerous tools and

indicators. An example is a recent project by the Consumers Health Forum (*Real people; real data*), which uses the framework to support a narrative patient journey tool[46] with the utility to collect longitudinal information on accountability of health organisations to patients as well as looking at integration across the system.

Aligned incentives

Within primary care, there is movement towards the patient centred medical home[20] which articulates a multidisciplinary collaborative model with components of population health and a discrete responsibility towards those identified with it. A federal government-funded trial in diabetics is testing the impact of altering primary care funding to create a 'healthcare home,' in which patients voluntarily register with a practice and are cared for by a multidisciplinary team coordinated by a care facilitator[47] and funded by a block payment. Implementing the 'healthcare home' model of care represents a significant 'scaling up' of this intervention with benefits to be measured including cost utility as well as those related to patient outcome. This will be an important step towards understanding the potential gains, and associated risks and costs, of collaborative initiatives at the primary care level.

At the state level there is the acknowledgement of the importance of disruptive innovation. State governments, with responsibility for acute hospital-based care have seeded integrated care programmes. For example, goals of the $125 million NSW programme include enabling infrastructure and introducing tools with interoperability; such as electronic records, risk stratification tools, and enhancement of patient reported measures using real-time feedback.[48,49] This investment, while not changing the funding model of primary care supports care coordination and associated activities that will lead to hospital avoidance.

There are also programmatic federal grants in the indigenous health and wellbeing space that consider integrated healthcare. This alignment of non-health budget items as part of the 'Close the Gap' initiatives have involved high level national partnership agreements between state and commonwealth government looking at for example -early childhood development and educational attainment.[50] At the local community level, aboriginal community-controlled health services are operating on a blended funding model.[51]

Conclusion

There are important and fundamental building blocks for integrated care in place within Australia's current health system. In particular there is a growing interest in clinicians sharing priorities, cooperative planning and the involvement of consumers in decision making.[52] However, integrating communication technologies, using shared data as a measurement tool, resource sharing and interprofessional and interorganisational training remain largely *ad hoc*.[16] While Australia may not be a world leader in reorienting its health system, grassroots initiatives and collaborative activities are emerging with local ownership. The challenge will be to systemise change and direct any reorientation towards patient outcomes. Evidence-informed policy from both levels of government will hopefully influence clinicians to see integrated care as a well-defined, supportively measured and policy enabled way of 'doing their bit' within the Australian health system. ■

References

1 Australian Bureau of National Statistics. *Life Tables, States, Territories and Australia, 2011–2013.* ABNS, 2014. Available online at www.abs.gov.au/ausstats/abs@.nsf/mf/3302.0.55.001 [Accessed 27 March 2014].

2 Australian Institute of Health and Welfare. *Australia's Health 2014.* AIHW, 2014. Available online at www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129548150 [Accessed 27 March 2014].

3 Australian Institute of Health and Welfare. *Australia's Health 2012.* AIHW, 2012. Available online at www.aihw.gov.au/publication-detail/?id=10737422172 [Accessed 5 October 2014].

4 Council of Australian Government Reform Council. *Healthcare 2010–11: comparing outcomes by remoteness: Supplement to the Report to the Council of Australian Governments.* COAGRC, 2012.

5 National Rural Health Alliance. *Inquiry into out of pocket costs in Australian healthcare: submission to Senate standing committee community affairs reference committee.* NRHA, 2014. Available online at http://ruralhealth.org.au/sites/default/files/documents/nrha-policy-document/submissions/sub-out-pocket-costs-12-may-2014.pdf [Accessed 7 March 2014].

6 Gröne O, Garcia-Barbero M. Integrated care: a position paper of the WHO European office for integrated health care services. *Int J Integrated Care* 2001;1:e21.

7 Australian Institute of Health and Welfare. *Medical Workforce 2012.* AIHW, 2014. Available online at www.aihw.gov.au/publication-detail/?id=60129546100 [Accessed 27 March 2014].

8 Stewart GD, Long G, Tulloh BR. Surgical service centralisation in Australia versus choice and quality of life for rural patients. *Med J Australia* 2006;185:162–3.

9 Scott A, Joyce CM. The future of medical careers. *Med J Aust* 2014;201:82–3.

10 Australian Commission on Safety and Quality in Health Care. *Exploring healthcare variation in Australia: analyses resulting from an OECD study.* ACSQHC, 2014. Available online at www.safetyandquality.gov.au/wp-content/uploads/2014/05/Exploring-Healthcare-Variation-in-Australia-Analyses-Resulting-from-an-OECD-Study.pdf [Accessed 27 March 2014].

11 Health Workforce Australia. *Doctors in focus.* HWA, 2012. Available online at www.hwa.gov.au/sites/default/files/australias_health_workforce_series_doctors_in_focus_20120322.pdf [Accessed 27 March 2014].

12 Australian Government Department of Health. *Medical training review panel sixteenth report.* Commonwealth of Australia 2013. Available online at www.health.gov.au/internet/main/publishing.nsf/Content/work-pubs-mtrp-16 [Accessed 27 March 2014].

13 Health Workforce Australia. *Health workforce by numbers.* HWA, 2013. Available online at www.hwa.gov.au/sites/default/files/Health-Workforce-by-Numbers-FINAL.pdf [Accessed 27 March 2014].

14 Health Workforce Australia. *Health workforce national health workforce innovation and reform strategic framework for action 2011–2015.* HWA, 2014. Available online at www.health.gov.au/internet/main/publishing.nsf/Content/work-pubs-mtrp-16 [Accessed 27 March 2014].

15 National Health and Hospitals Reform Commission. *A healthier future for all Australians.* Commonwealth of Australia, 2009. Available online at www.health.gov.au/internet/nhhrc/publishing.nsf/Content/1AFDEAF1FB76A1D8CA257600000B5BE2/$File/EXEC_SUMMARY.pdf [Accessed 27 March 2014].

16 Nicholson C, Jackson C, Marley J. Best practice integrated health care governance – applying evidence to Australia's health reform agenda. *BMC Health Services Research* 2014;14(Suppl 2):O6.

17 Parliament of Australia. *Budget Review 2014–15: other health measures.* APH, 2014. Available online at www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/BudgetReview201415/HealthMeasures [Accessed 27 March 2014].
18 Dutton P. *Address to Committee for Economic Development Australia.* Brisbane: Committee for Economic Cooperation, 2014.
19 Armitage GD, Suter E, Oelke ND, Adair CE. Health systems integration: state of the evidence. *Int J Integrated Care* 2009;9:e82.
20 Royal Australian College of General Practitioners. *Laying foundations for the medical home: RACGP submission to the Minister for Health.* RACGP, 2013. Available online at www.patientconnect.com.au/ws-content/uploads/News_artile_-_RACGP_pre_budget_submission.pdf [Accessed 27 March 2014].
21 Strandberg-Larsen M, Krasnik A. Measurement of integrated healthcare delivery: a systematic review of methods and future research directions. *Int J Integrated Care* 2009;9:e01.
22 Bailie RS, Si D, Robinson GW *et al.* A multifaceted health-service intervention in remote Aboriginal communities: 3-year follow-up of the impact on diabetes care. *Med J Australia* 2004;181:195–200.
23 Curry N, Ham C. *Clinical and service integration.* London: King's Fund, 2010.
24 Mickan S, Hoffman SJ, Nasmith L. Collaborative practice in a global health context: Common themes from developed and developing countries. *J Interprofessional Care* 2010;24:492–502.
25 Ahgren B, Axelsson R. Evaluating integrated health care: a model for measurement. *Int J Integrated Care.* 2005;5:e01.
26 McKinsey. *What it takes to make integrated care to work.* Available online at www.mckinsey.com/client_service/healthcare_systems_and_services/latest_thinking/health_international/archive/issue_11 [Accessed 27 March 2014].
27 Healthy communities. *Australia's experience with primary health care 2010-2011.* Available online at www.myhealthycommunities.gov.au/Content/downloads/ml-spreads/ml-spread-report-hc01-abs0013-2010-11.pdf [Accessed 27 March 2014].
28 Medicare. *Expenditure on specialist attendances, age-standardised 2012–13.* Available online at www.myhealthycommunities.gov.au/national/mbs0015 [Accessed 7 March 2014].
29 Clarke AL, Shearer W, McMillan AJ, Ireland PD. Investigating apparent variation in quality of care: the critical role of clinician engagement. *Med J Aust* 2010;193:S111.
30 Commonwealth of Australia. *A conceptual framework for Medicare Local collaboration.* Available online at http://iehu.unimelb.edu.au/__data/assets/pdf_file/0004/953509/AMLA_medicare_local_collaboration_framework.pdf [Accessed 27 March 2014].
31 Crossland L, Janamian T, Sheehan M *et al.* Development and pilot study of the Primary Care Practice Improvement Tool (PC-PIT): an innovative approach. *Med J Aust* 2014;201:S52–5.
32 Gauld R. What should governance for integrated care look like? New Zealand's alliances provide some pointers. *Med J Aust* 2014;201:S67–8.
33 Queensland Government. *Queensland Clinical Senate.* Available online at www.health.qld.gov.au/clinical-practice/engagement/clinical-senate/default.asp [Accessed 27 March 2014].
34 Bohmer RM. Leading clinicians and clinicians leading. *N Engl J Med* 2013;368:1468–70.
35 The Lancet. Making primary care people-centred: a 21st century blueprint. *Lancet* 2014;384:281.
36 Adler-Milstein J, Sarma N, Woskie LR, Jha AK. A comparison of how four countries use health it to support care for people with chronic conditions. *Health Affairs* 2014 2014;33:1559–66.
37 Pearce C, Haikerwal MC. E-health in Australia: time to plunge into the 21st century. *Med J Aust* 2010;193:397–8.
38 National Lead Clinicians Group. Transfer of Care: rural and remote perspectives. Available online at http://leadclinicians.health.gov.au/internet/lcg/publishing.nsf/Content/0BC80B14F241017BCA257A590021F2E8/$File/NT%20NCN%202013%20report.pdf [Accessed 27 March 2014].
39 Moffatt J, Eley D. Barriers to the up-take of telemedicine in Australia – a view from providers. *Rural Remote Health* 2011;11:1581.
40 Health Consumers Queensland. *Consumer and community engagement: Evidence of improved individual health outcomes, services and systems.* Available online at www.iap2.org.au/sitebuilder/states/knowledge/asset/files/30/improved-health.pdf [Accessed 27 March 2014].
41 Shepherd HL, Barratt A, Trevena LJ *et al.* Three questions that patients can ask to improve the quality of information physicians give about treatment options: a cross-over trial. *Patient Educ Couns* 2011;84:379–85.
42 Thomas R, Zubair N, Hayes B. Goals of care: a clinical framework for limitation of medical treatment. *Med J Aust* 2014;201:452–5.
43 Australian Commission on Safety and Quality in Healthcare. *Australian safety and quality goals for healthcare consultation paper.* Available online at www.safetyandquality.gov.au/wp-content/uploads/2012/01/Goals-consultation-discussion-paper-FINAL-9-Nov-2011.pdf [Accessed 27 March 2014].
44 Australian Institute of Health and Welfare. *The measurement of patient experience in non-GP primary health care settings. Discussion paper for the National Health Standards and Statistics Committee.* Available online at www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=60129547330 [Accessed 27 March 2014].
45 Picker Institute. *Options appraisal on the measurement of people's experiences of integrated care.* Available online at www.pickereurope.org/wp-content/uploads/2014/10/Options-appraisal-on...-integrated-care.pdf [Accessed 7 March 2014].
46 Consumers Health Forum of Australia. *Real people; real data.* Available online at www.chf.org.au/real-people-real-data-project.php [Accessed 27 March 2014].
47 Leach M, Segal L, Esterman A *et al.* The Diabetes Care Project: an Australian multicentre, cluster randomised controlled trial [study protocol]. *BMC Public Health* 2013;13:1212.
48 State Government of Victoria. *Primary care partnerships.* Available online at www.health.vic.gov.au/pcps/ [Accessed 27 March 2014].
49 NSW Government. *NSW integrated care strategy.* Available online at www.health.nsw.gov.au/integratedcare/Pages/default.aspx [Accessed 27 March 2014].
50 Queensland Government. *Making tracks – towards closing the gap in health outcomes for indigenous Queenslanders by 2033.* Available online at www.health.qld.gov.au/atsihealth/documents/making-tracks/making_tracks_pol.pdf [Accessed 27 March 2014].
51 Cooper D. *Closing the gap in cultural understanding: social determinants of health in Indigenous policy in Australia.* Darwin: AMSANT, 2011.
52 Primary Health Care Research & Information Service. *Primary Health Care Research and Information Service integrated care – What policies support and influence integration in health care in Australia?* Bedford Park: PHCRIS, 2013.

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