General Practitioner, Dr A

A Medical Centre

A Report by the

Health and Disability Commissioner

(Case 04HDC08084)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Parties involved

Dr A	Provider/General Practitioner
Dr B	Provider/General Practitioner
Dr C	Provider/General Practitioner
Dr D	General Manager/A Medical Centre
A Medical Centre	Provider
Master E	Consumer
Mr and Mrs E	Complainants
Dr F	Paediatrician

Complaint

On 13 May 2004 the Commissioner received a complaint from Mr and Mrs E about services provided by Dr A to their infant son, Master E. The issues for investigation arising from the complaint were summarised as follows:

Dr A

The appropriateness of the care and treatment provided to Master E by general practitioner Dr A in November 2003, including:

- *whether Dr A adequately diagnosed and treated Master E;*
- *whether Dr A should have undertaken follow-up and investigation of Master E's urine test results.*

The Medical Centre

The appropriateness of the care and treatment provided to Master E by the Medical Centre, including:

- *the adequacy of the response by the medical centre to Master E's urine test results.*

An investigation was commenced on 3 November 2004.

Names have been removed to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

Information reviewed

- Complaint from Mr and Mrs E
- Information from:
  – Dr A
  – Dr D
- In-house clinical advice obtained from the Health and Disability Commissioner's Clinical Advisor, a general practitioner
- Independent expert advice obtained from Dr Philip Jacobs, general practitioner

Information gathered during investigation

Background/Overview
At 3.45am on 20 November 2003 Mr and Mrs E took their infant son, Master E, aged 7 months, to consult general practitioner Dr B at an Accident and Medical Clinic. Mr and Mrs E were concerned that Master E had a fever and was not sleeping well, had lost his appetite and was fatigued.

Dr B noted that Master E was afebrile, attentive and alert, with a clear throat and chest. However, he was mildly tachycardic and had a small blanching rash. His parents provided a recent history of fever and vomiting. Dr B diagnosed a probable viral illness and recommended a urine test and review with his general practitioner in 8 hours (or earlier if there was any deterioration in Master E's condition).

Later that day (at 3.30pm), Mr and Mrs E consulted general practitioner Dr A, at the Medical Centre. Dr A reviewed Master E's notes from the Accident and Medical Clinic and discussed his symptoms with Mr and Mrs E. Dr A noted that Master E was febrile (38.8°C) and tachycardic, with a widespread area of blanching rash over his trunk, arms and legs. His ear, nose, throat and chest were normal. Dr A stated:

> "In view of the rash and the fever, and in the absence of any other signs or symptoms, I felt that this was most likely to be a viral illness, probably of upper respiratory origin, but that a urinary tract infection (UTI) should be excluded."

Dr A then transferred Master E to a treatment bay where he was given paracetamol, and a urine bag was placed on him by the practice nurse. Approximately 30 minutes later, the nurse successfully obtained a urine sample and then performed a dipstick test on the collected urine. The dipstick test revealed "+++ protein" (indicating a high protein count) with no other abnormal findings. As the findings were inconclusive, Dr A requested that the sample be sent for laboratory testing, including a full culture and urine analysis. Mr and Mrs E were informed that there was an abnormality and that Dr A would contact them if the

result indicated that treatment for a urine infection was required. Dr A also reviewed Master E's temperature. He recalled:

> "[Master E's] fever appeared to be settling, so I prescribed [Master E] Pamol suppositories and advised [Mrs E] to encourage oral fluids, and that they should bring [Master E] back if his fever did not continue to settle, or if they had any further concerns about him. I can only assume that his symptoms must have resolved, given that he did not re-present for three weeks."

Mr and Mrs E confirmed that the only specific instruction Dr A provided them was to monitor Master E for the continuation of his fever, and that he would contact them if anything was wrong with his urine test result. As Master E's fever resolved they were reassured that he had a viral illness and did not return.

On 21 November Dr A received the results of Master E's urine analysis via email. The test results stated:

> "Mid stream urine
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> | | |
> |---|---|
> | Protein | Large |
> | Glucose | Negative |
> | Blood Pigment | Large amounts detected |
> | White cells | 25/cmm |
> | Red cells | 100/cmm |
> | Epithelial cells | Nil |
> | Bacteria | Nil |
>
> No casts seen
>
> Culture
>
> Mixed bacterial species present
> Count: 10 to 100 million/litre
> Mixed growths are not usually regarded as significant."

Dr A stated that as Master E's urine test results showed no significant bacteria, the possibility of a urinary tract infection was effectively eliminated. The results were otherwise unremarkable and, accordingly, the negative culture on Master E's urine confirmed his working diagnosis of viral illness. He stated:

> "Since the urine result of the 20 November 2003 was not surprising in its clinical context, and since I was confident that [Mrs E] would follow my advice and bring [Master E] back if he did not improve or if she had any other concerns, I felt that the urine result was acceptable, and filed it without taking any further action."

Subsequent events

On 12 December 2003 Master E's parents consulted general practitioner Dr C at the Medical Centre. Master E presented with a two-day history of diarrhoea with no vomiting, and was diagnosed by Dr C with viral gastroenteritis.

On 21 January 2004 Mr and Mrs E returned to the Medical Centre as Master E appeared generally unwell. Dr C noted "puffiness around his eyes" and diagnosed an allergic reaction. He also referred Master E for a urine test, which again reported a large protein and blood pigment count, as well as the presence of casts (debris indicative of renal pathology). A full blood test showed the fragmentation of red blood cells and a decreased platelet count.

On 22 January 2004 Dr C reviewed Master E and recorded: "swelling and puffiness around the eyes, not feeding or drinking well. Pale, looks tired." Dr C was concerned about Master E's condition and referred him to the public hospital.

On 23 January 2004 Master E was admitted to the public hospital for assessment. After receiving a "full diagnostic workup", Master E was diagnosed with atypical haemolytic uraemic syndrome (HUS) with accompanying hypertension and anaemia. He received treatment for these (and other related) conditions during his admission and was eventually discharged on 12 February 2004, with further review and treatment of his condition planned. His discharge letter (written by a relieving paediatric renal registrar) stated:

> "The prognosis for [Master E] is clearly uncertain. […] has spoken to the parents on a number of occasions about the uncertain nature of atypical HUS and the possibility of recurrences and the strong possibility of renal failure."

Following Master E's hospital admission, Mr and Mrs E obtained a copy of his medical record and became aware of his urine test result of 21 November 2003:

> "We were shocked to find out that his urine analysis in November [2003] showed the same concerning traces of blood in his urine, and the same large amount of protein, but nobody had ever informed us about this matter.
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> …
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> We talked with the kidney specialist in charge with the treatment of our son and he told us this was a severe neglecting of our GP's duties, because traces of blood in urine is a sign which should make any doctor further look for the cause. It is not just a symptom which can be misinterpreted."

Dr A's review

When Dr A reviewed Master E's test results on 21 November 2003 he concluded that the incidental findings of the urine analysis were due to a combination of the type of test used, and Master E's presenting symptoms. The presence of pigment in the urine could be explained by haemolysis [loss of haemoglobin] of the red blood cells in the collection bag over a three to four hour period before the sample was processed (the urine specimen arrived at the medical testing laboratory at 6.46pm, having been obtained at approximately 4pm). Additionally, the white and red blood cell count was not unusual in the context of the mixed growth finding. Dr A stated:

> "Although a 'large' protein recording would not be expected in a normal adult/child midstream urine, it is unremarkable for a bag specimen from an infant who would have

been mildly dehydrated after a period of reduced feeding. Also, with fever, some proteinuria would be expected.

…

It is not the case that I did not pay attention to the 'formal report'. I made my decision based on the clinical presentation and conscious of my clear instructions to the parents to return if [Master E] did not return to normal. There were two choices available to me; to require a follow up test immediately or to arrange an in-hospital bladder puncture or catheterisation only if problems persisted. My assessment was that the latter course was appropriate. Having regard to all the circumstances, I consider it was a reasonable judgment to have made."

Dr A commented that Master E's test results and symptoms in November 2003 and January 2004 were significantly distinct. He stated:

"Firstly, the January specimen results differ significantly from those of the November specimen. In the January result, there were 500 red cells rather than 100 red cells. Also, there are casts present, which were not present in November.

Secondly, the clinical situation in January was completely different to that in November. The notes show that, when [Master E] was seen on January 21, he presented with periorbital oedema and significant pallor, and reduced feeding despite the absence of fever or other signs of viral infection. These signs and symptoms suggest a significantly different underlying disease process, which requires a different interpretation of the urine results."

Dr A also commented that HUS is often preceded by gastroenteritis and that Master E certainly did not present with gastroenteritis in November 2003.

Dr D, General Manager at the Medical Centre, agreed with Dr A's interpretation of Master E's results. He stated:

"On reviewing the clinical notes, the minor abnormalities noted on the urine test result reported by the lab are not uncommon, particularly in bag urine samples and especially in the presence of a febrile illness.

…

With hindsight, it could be argued that [Dr A] could have followed up this result with a repeat test a few days later but as [Dr F] has pointed out [see below], urine bag results are more often than not unreliable as an investigative tool and if the child had recovered to the parents' satisfaction within a short period (as suggested by the fact that they did not return for follow-up as advised by [Dr A]), then there would be no indication to follow up this test with an invasive procedure such as obtaining a sample by catheterisation which is not only painful but carries a greater risk of injury and other side effects."

Paediatrician Dr F
Dr A submitted an opinion from paediatrician Dr F, who agreed that blood and protein were common findings in the urine of febrile children, particularly if the urine is collected by way of bag sample. Dr F commented:

> "Bag collected samples are notoriously contaminated. In fact many practitioners see little value in the collection of a sample in that way."

Dr F considered that the blood/protein result did require further consideration, but that it was reasonable to have assumed Master E had recovered as the family did not return. Dr F stated:

> "A practitioner has two alternative courses of action in respect of such a result. He can elect to re-test immediately, or wait to see if the child improves in the short term before deciding whether to repeat the test.
>
> I also believe that parents have some responsibility in following up results. I specifically remind parents when ordering a test that they also phone in for a result as a double check in case a result is mis-filed, even although I regard it as my responsibility to follow up.
>
> Clearly with the benefit of hindsight it is unfortunate that [Dr A] did not order a repeat test. However, in my view, this does not constitute a failure by him to provide services with reasonable care and skill to [Master E]. [Dr A], like most general practitioners, would assume that if the child does not re-present to him then he had recovered.
>
> Indeed this assumption seems to have been borne out by the fact that [Master E] did not re-present to the practice until 12 December 2003."

Dr F also commented that atypical HUS is very rare and it is unclear whether Master E's symptoms on 20 November amounted to an early presentation of HUS.

The Medical Centre systems
Dr D explained that the Medical Centre uses the medical software programme "Medtech 32". He stated:

> "This software records every detail relating to the clinical practice of patients including clinical notes, laboratory and other investigations, prescriptions and referral letters. As such all details are fully recorded and easily accessible to, and under the control, of any medical practitioner dealing with the patient."

Dr D advised that test samples are collected during the day by the medical testing laboratory staff and taken to a centralised laboratory for processing and testing. The test results are sent back electronically and appear in the doctor's electronic inbox. Dr D provided the computer screen print-outs from Medtech 32 confirming that Dr A reviewed and filed Master E's test results at 3.55pm on 21 November 2003. Dr D stated:

> "The procedures followed by [Dr A] in reviewing the test results were quite appropriate."

In-house clinical advice
The Commissioner's clinical advisor, a general practitioner, provided a clinical review of this matter and was of the opinion that the laboratory urine findings were abnormal and, as such, required follow-up. He stated:

> "[Dr A] ascribes the bag urine findings to dehydration and fever and the viral illness. Certainly a bag urine is a screening test and subject to inaccuracies, but because of the non-invasiveness of this test it can be repeated as often as necessary to clarify a clinical situation. A repeat bag urine should have been ordered either on 21 November 2003 upon receipt of the urine result from the laboratory or in the following days once the acute fever and dehydration had resolved."

The Commissioner's clinical advisor also commented that ordering urine tests, and their interpretation and follow-up, are common activities for general practitioners. He disagreed with Dr F (and Dr A) that waiting to see whether the patient re-presented was an appropriate option. He concluded that most general practitioners would have decided that the abnormality warranted a repeat urine test, and would have drawn the abnormal test results to the parents' attention.

Independent advice to Commissioner

The following expert advice was obtained from general practitioner Dr Philip Jacobs:

> "Expert Advice
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> My name is Philip Jacobs and I have been asked by the Health and Disability Commissioner to provide independent advice concerning the above complaint.
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> I have read the Guidelines for Independent Advisors and agree to follow these guidelines.
>
> I am currently a General Practitioner working as a partner in a group practice in an urban area. I have been in General Practice for 19 years, 12 years as a rural GP and 7 years in my current position. I am an accredited teacher in the GP Training Programme and act as a small group tutor for the day release seminars. I also work as a Palliative

Care Liaison for Pegasus IPA, and provide advice and assistance to GPs caring for their terminally ill patients at home. I have served on the RNZCGP Council and been a member of the Executive. I am a member of the Faculty Board of the Canterbury division of the RNZCGPs. I am a Fellow of the Royal New Zealand College of General Practitioners, have Diplomas in Obstetrics and Palliative Medicine. I hold a medal for teaching and a Distinguished Service Medal for work for the College.

In submitting my reflections on this case, I have undertaken discussions with fellow GPs and with two microbiologists, including one from [the medical testing laboratory] that generated the abnormal urine report.

Given [Master E's] presenting symptoms on 20 November 2003, was [Dr A's] diagnosis appropriate?

It is important to note that [Master E] was seen by two different General Practitioners on the 20/11/03, one being [Dr B] from [the accident and emergency clinic] and the other [Dr A] at [the medical centre]. The first consultation was at 0345 by [Dr B]. The history stated that the patient had been suffering from a fever for 12-15 hours, been vomiting two days ago. The examination showed him to be [a]febrile but with no other findings apart from a rash that was thought to be part of a viral illness. I assume that because of the fever and no other obvious findings apart from the rash, [Dr B] felt a urine sample would be appropriate to rule out a urine infection. He suggested that the patient be reviewed by his GP in 8 hours or sooner if he deteriorated.

The second consultation was reportedly at 1530 the same day with [Dr A]. His history stated that the patient had had a high temperature for 24 hours, was unwell and not feeding as well. His examination revealed a temperature of 38.8, ear nose and throat examinations normal, chest clear, heart sounds normal but a fast heart beat, and the presence as previously reported of a widespread blanching erythematous rash over trunk, arms and legs. He made a diagnosis of a viral upper respiratory tract infection, advised for pamol, fluids and to check the urine as collected via a paediatric urine collection bag. The urine was dipsticked by the nurse and found to contain +++ protein. Because of this abnormality, it was sent to the laboratory for microscopy, culture and sensitivities in case there did prove to be an infection. [Dr A] stated that the fever was settling although what that comment was based on was unclear as the patient was still significantly febrile at the consultation. [In response to the Commissioner's provisional opinion [Dr A] advised that he had based this comment on his review of [Master E's] temperature again after the urine sample had been obtained.]

[Dr A] diagnosed a viral upper respiratory tract infection. I believe that this was incorrect and in fact he meant to say a 'viral infection' and in his letter to the Commissioner, used this phrase. There were no signs of upper respiratory tract infection, but the rash and fever suggested a non specific viral illness. [In response to the provisional opinion, [Dr A] confirmed that he had diagnosed 'Viral infection, NOS' (not otherwise specified).]

I believe that both GPs and indeed the vast majority of GPs would have handled this case in an equivalent manner. The collection of a urine sample was reasonable, although it may have been that given the rash, many GPs would have accepted that as an indicator of a viral illness and deemed a bag urine [sample] not to be necessary. Nevertheless the urine did show +++ protein and it was appropriate to send the urine to the lab for further analysis. The presence of +++ protein in a 7 month old baby should ring alarm bells and I would have expected [Dr A] to pay particular attention to the formal report from the laboratory when it arrived.

Did [Dr A] develop an appropriate management plan in relation to [Master E] on 20 November?

I believe that [Dr A] managed this case appropriately to a point. He advised the parents to receive follow up if there were any concerns. However he appears not to have mentioned to the parents about the proteinuria, as they deny having any knowledge of this finding until after the child represented in January 2004. They stated that he said he would contact them if any abnormal results were found. If he had told the parents that he had found some protein in the urine and that the full report was pending, then they could have taken some responsibility for the follow up.

Was [Dr A's] interpretation of [Master E's] urine analysis result appropriate?

What further action, if any, in relation to [Master E's] care should [Dr A] have taken following receipt of the urine test result?

Should [Dr A] have informed [Master E's] parents of his urine test result?

I have discussed the urinalysis result with colleagues and with two microbiologists. The following are statements derived from discussions and evidence from the microbiologists.

Bag urine specimen collection can be unreliable especially if looking for urinary infection. The direct contact of the adjacent perineal skin with the urine greatly increases the risk of bacterial contamination from the skin. It is not unusual to get a mixed growth of bacteria under these circumstances. However it is a non invasive test that is acceptable as a screening tool and if there is a combination of a pure bacterial growth combined with a high white blood cell count, a real urinary infection must be considered. Abnormal but inconclusive bag urine results should either be repeated or replaced by an alternative method of collection of urine such as bladder puncture or catheterisation.

A urine specimen, from whatever source, in order to be valid should be received at the Laboratory within 4 hours of production.

Proteins. The dipstick, which is only semi-quantitative, turns positive at a protein concentration of about 100-300 mg/L. A trace or 1+ can be due to an infection,

particularly one involving the kidney rather than just the bladder. A test registering 2+ or greater raises the possibility of glomerular (kidney) disease.

Proteinuria in children may present in one of three ways: transient or intermittent, orthostatic, and persistent. Transient and orthostatic proteinurias are benign conditions that require no further evaluation. Transient proteinuria is the most common cause. It can be induced by a variety of factors including fever, exercise, stress, seizures and hypovolaemia. The only way to differentiate between the benign proteinuria and serious pathology is to repeat the sample when the child has recovered.

40% of urines dipsticked test positive for blood (all ages). Usually the presence of blood on the dipstick would be assumed to be due to hematuria (blood in the urine) when red blood cells are confirmed under a microscope (as in this case). If blood pigment were detected in the absence of red blood cells and this occurred on more than one occasion then haemolysis might be considered a possible cause. It would not be unreasonable to assume that the blood pigment was present as a result of red blood cells in the sample releasing their contents as the sample aged.

Normal urine has less than 10x10^6 red cells/L which is approximately at the limit of detection of a urine dipstick. When the dipstick is positive for blood the laboratory does a red cell count and there are 8 possible results: nil, 10, 25, 50, 100, 250, 500, >500. At about the 500 level, blood just becomes visible to the naked eye. When considering diagnostic implications, the origin of the blood may be from one of two categories. Firstly benign or relatively benign transient haematuria. These include haematurias that have an identifiable and benign cause eg urinary tract infections, and which disappear with elimination of the disease. Secondly, it may be a persistent pathological haematuria arising from tumours, stones, trauma, renal pathology, bleeding disorders, haemolysis or myoglobinuria.

Discussion

The presence of protein in the urine should always be taken seriously.

This is especially so if there is a large amount of protein detected. As stated, in the situation of fever or hypovolaemia (as you might see if a febrile infant has become dry) some proteinuria might be expected. Similarly, blood in the urine is a common finding on bag urines and could be explained by a number of mechanisms. The blood pigment could conceivably be secondary from breakdown of the red blood cells in the sample collected. However the presence of these abnormalities, both proteinuria and haematuria, require follow up by way of a repeat specimen, to determine whether their origin has a benign or malignant basis. As such it would have been appropriate under these circumstances to repeat the urine sample once the acute febrile illness had resolved. Given that there would be no way that the infant's parents could know whether protein or blood persisted in the urine unless there was gross haematuria (blood stained urine), it is inappropriate to expect them to come back in relation to this problem. He should have informed them of the urine result and advised to return for a repeat urine specimen.

Paediatrician [Dr F] commented that Haemolytic Uremic Syndrome is a rare condition and would not be encountered by most general practitioners. What is your view?

I agree with [Dr F]. This is a very rare illness and most General Practitioners would have little or no knowledge of this. In fact it would be highly unlikely for a General Practitioner to encounter this illness in their working career. Nevertheless, one of the roles of the General Practitioner is to identify serious illness when and where it should arise. It is not a requirement of any given GP that they should make the diagnosis, but that they recognize any variation from normal and follow that up appropriately. In this instance the abnormal urine result, which was a chance finding in an infant with a probable viral illness, should have been repeated and if persistently abnormal, referred to the secondary sector for diagnosis. One of the big problems here was that [Dr A] performed the urine test looking for a urine infection, failed to find one and dismissed the proteinuria and haematuria as not significant under the circumstances. As stated above, large protein and haematuria in a 7 month old infant are significant until a follow up urine says they have disappeared and this was a transient, benign problem. It is difficult to say whether this abnormal urine result was the start of haemolytic uraemic syndrome and I do note that the patient had an episode of diarrhea in December, a situation which is known to trigger HUS. We can only speculate, but it does not alter the way this specific urine test was handled.

Were the systems at [the medical centre] in relation to patient test results appropriate?

I have reviewed the literature provided by [the medical centre] regarding their protocols and am familiar with the MedTech 32 computer software. I see no problems in this area and feel that [Dr A] alone was responsible for the way the results were handled. He reviewed the urine result and decided that the findings were not significant and no further action was required. Once he filed the result, no one else would review or reflect on the urine. The systems in place seem extremely efficient and would be amongst the best I have seen.

Conclusion

I believe that most General Practitioners would have noted the abnormal urine result and repeated it when the infant had recovered from the febrile illness.

The findings in the urine were not 'minor' as has been intimated by others; 3+ protein in association with 100 red blood cells in a 7 month old infant is a significant abnormality and warrants follow up.

The parents were not in a position to take responsibility for follow up because they were not aware of the abnormal urinary findings.

The situation was complicated because some abnormalities in the urine might be expected in an acute viral illness anyway, and [Dr A] primarily performed the urine test to rule out a urine infection – which it did.

Whether or not [Master E] had commenced his illness of HUS at the time of his first presentation is difficult to ascertain but does not affect my assessment that the abnormal urine in November 2003 should have triggered follow up.

I believe that my peers would have sympathy with [Dr A], given the rare diagnosis, the fact that an unexpected and unanticipated problem was revealed in the process of ruling out the obvious (UTI), and the fact that the abnormality in the urine was a matter of degree (a small amount of protein and few red blood cells may have been considered acceptable given the febrile illness). As such, although I believe [Dr A] did not provide an appropriate standard of care, my peers would consider it to be in the mild to moderate disapproval category.

References

Diagnostic MedLab Handbook 2000 at www.dml.co.nz

Correspondence and discussion with [two clinical microbiologists]"

Code of Health and Disability Services Consumers' Rights

The following Rights in the Code of Health and Disability Services Consumers' Rights are applicable to this complaint:

RIGHT 4
Right to Services of an Appropriate Standard

4) Every consumer has the right to have services provided in a manner that minimises the potential harm to, and optimises the quality of life of, that consumer.

RIGHT 6
Right to be Fully Informed

1) Every consumer has the right to the information that a reasonable consumer, in that consumer's circumstances, would expect to receive, including –

…

f) The results of tests; …

Names have been removed to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

Opinion: Breach – Dr A

Standard of care

Mr and Mrs E complained that Dr A did not take any action to investigate their son Master E's urine test results of 21 November 2003. They were not informed of any abnormality in these results and are concerned that appropriate investigation in November may have led to an earlier diagnosis and treatment of Master E's atypical haemolytic uraemic syndrome (HUS).

Right 4(4) of the Code of Health and Disability Services Consumers' Rights requires services to be provided in a manner that minimises the potential harm to the patient. Dr A appropriately diagnosed Master E with a potential viral illness and referred him for a urine analysis to exclude a urinary tract infection (UTI). Master E's urine test results were not indicative of a UTI but were potentially abnormal and, as such, warranted investigation. However, Dr A did not take any further action in relation to Master E's test results and therefore breached Right 4(4) of the Code. The basis for my decision is set out below.

Consultation of 20 November 2003

Dr A initially saw Master E on 20 November 2003 and diagnosed a suspected viral illness, but decided that a UTI should be excluded. My independent expert advisor, general practitioner Dr Philip Jacobs, considered that "the vast majority" of general practitioners would have managed matters in this way but that given the high protein count of the preliminary urine dipstick test, Dr A needed to carefully review the laboratory results:

> "The presence of +++ protein in a 7 month old baby should ring alarm bells and I would have expected [Dr A] to pay particular attention to the formal report from the laboratory when it arrived."

My advisor also commented that Dr A should have specifically advised Mr and Mrs E about the high protein finding. Dr Jacobs stated:

> "If he had told the parents that he had found some protein in the urine and that the full report was pending, then they could have taken some responsibility for the follow up."

Review of test results

It is not disputed that Master E's urine test result of 21 November 2003 confirmed the dipstick indication of a high protein count. However, on review of the test result, Dr A considered that the high protein level could be explained by a degree of dehydration associated with fever and reduced feeding. The high levels of blood pigment could be explained by the breakdown of red blood cells in the time since the sample was collected. Furthermore, the absence of casts made renal pathology less likely. Dr A formed the view that the results excluded the possibility of a urinary tract infection and confirmed his diagnosis of viral illness and that any further concerns about Master E's urine test results could be adequately addressed if he re-presented. However, he did not inform Mr and Mrs E that the urine test was abnormal.

Dr A submitted a report from paediatrician Dr F, who commented that the blood/protein result did require further consideration. However, he considered it was reasonable for Dr A to assume Master E had recovered, as the family did not return. Dr D, General Manager at the medical centre, also expressed the view that there was no reason to follow up the test, in circumstances when the patient did not return.

Dr Jacobs advised that a small amount of protein and red blood cells may have been acceptable given the clinical circumstances of febrile illness. However, there were sufficient abnormalities in Master E's urine test result to require a follow-up test to determine whether the proteinuria and haematuria were of benign or pathological origin, and thus Dr Jacobs disagreed with the views of Drs F and D. He stated:

> "As such it would have been appropriate under these circumstances to repeat the urine sample once the acute febrile illness had resolved. Given that there would be no way that the infant's parents could know whether protein or blood persisted in the urine unless there was gross haematuria (blood stained urine), it is inappropriate to expect them to come back in relation to this problem. He should have informed them of the urine result and advised to return for a repeat urine specimen.
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> …
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> I believe that most general practitioners would have noted the abnormal urine result and repeated it when the infant had recovered from the febrile illness.
>
> The findings in the urine were not 'minor' as has been intimated by others; 3+ protein in association with 100 red blood cells in a 7 month old infant is a significant abnormality and warrants follow up."

Dr Jacobs further commented that it was not necessarily a requirement of Dr A, as Master E's general practitioner, to make a diagnosis of an illness as rare as HUS, but it was certainly his responsibility to "recognise any variation from normal and follow that up appropriately". My in-house clinical advisor, a general practitioner, was also of the view that the urine analysis findings were abnormal and required proactive follow-up.

Conclusion

I accept my expert advice and conclude that Dr A did not take appropriate action in relation to Master E's test results. The results showed a significant abnormality and, as Dr Jacobs noted, "Large protein and haematuria in a 7 month old infant are significant until a follow up urine [test] shows they have disappeared and this was a transient benign problem." I note that my in-house clinical advisor, a general practitioner, was also of the opinion that the test results were abnormal and required follow-up. Dr F also considered that the result required further consideration, although he thought that a practitioner could elect to repeat the test immediately, or wait to see if the child improved before deciding whether to repeat the test.

Master E's parents were asked to return only if he remained unwell, particularly if his fever did not abate. They were not told that they needed to return for a follow-up test. While Mr

and Mrs E were able to judge when their son's fever had abated, they had no way of knowing whether the urine abnormalities had continued, and were not provided with any information about the abnormally high protein count revealed by the urine dipstick test to prompt them to come back so Master E would be re-tested. It was not sufficient, in these circumstances, for Dr A to assume that Master E's urine abnormality was of a transient, benign nature simply because he had not re-presented.

In my opinion, by not following up the abnormal urine test results, Dr A did not provide services in a manner that minimised the potential harm to Master E, and breached Right 4(4) of the Code.

Opinion: No Breach – The Medical Centre

The complaint raised the issue of the adequacy of the response by the medical centre to Master E's urine test results. Therefore, the investigation also included the systems in place at the medical centre in relation to the receipt of test results.

My advisor commented:

> "I have reviewed the literature provided by [the medical centre] regarding their protocols and am familiar with the MedTech 32 computer software. I see no problems in this area and feel that [Dr A] alone was responsible for the way the results were handled. He reviewed the urine result and decided that the findings were not significant and no further action was required. Once he filed the result, no-one else would review or reflect on the urine. The systems in place seem extremely efficient and would be amongst the best I have seen."

I accept my advisor's comments. I am satisfied that the medical centre had appropriate systems in place at the time and did not breach the Code.

Vicarious liability
Employers are responsible under section 72(2) of the Health and Disability Commissioner Act for ensuring that employees comply with the Code and may be vicariously liable for an employee's breach of the Code. However, under section 72(5) of the Act it is a defence for an employing authority to prove that it took such steps as were reasonably practicable to prevent the employee from breaching the Code.

The medical centre has provided evidence of efficient systems of an appropriate standard and I am satisfied that Dr A's decision not to further investigate Master E's test results was a matter of individual clinical judgment, rather than being the result of any systemic problem.

Accordingly, the medical centre is not vicariously liable for Dr A's breach of the Code.

Other comment

This case also raises the issue of the notification of patient test results. Under Right 6(1)(f) of the Code a patient is entitled to receive the information that a reasonable consumer, in that consumer's circumstances, would expect to receive, including the results of tests. Dr Jacobs considered that Dr A should have informed Master E's parents of the results of the urine test and advised them to return to repeat the sample. My in-house clinical advisor concurred. In my view, although Dr A did not consider that the urine test results were sufficiently abnormal to warrant further investigation, he should have brought the findings to Master E's parents' attention and given them advice about the need for follow-up.

Actions taken

Dr A has reviewed his practice as a result of these events, and advised me that HUS is now on his differential diagnosis list.

Recommendation

I recommend that Dr A apologise to Mr and Mrs E for his breach of the Code. The apology is to be sent to the Commissioner and will be forwarded to Mr and Mrs E.

Follow-up actions

- A copy of this report will be sent to the Medical Council of New Zealand and the Royal New Zealand College of General Practitioners.

- A copy of this report, with details identifying the parties removed, will be placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Names have been removed to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.